

GRACE HOPPER CELEBRATION of WOMENⁱⁿ COMPUTING

A program of the  **Anita Borg Institute**
for Women and Technology

2008 Conference Information: Program Schedule

Schedule at a Glance

Wednesday, October 1, 2008

Start Time	End Time	Description	Location
Ongoing		Free Wireless Internet Available in All Conference Areas – Sponsored by Juniper Networks	All GHC Meeting Spaces
7:00 am	5:30 pm	Registration Open	Main Lobby
7:00 am	5:30 pm	ABI Information Table	Main Lobby
8:00 am	9:30 am	Continental Breakfast	Red Cloud Peak & Shavano Peak
9:00 am	5:00 pm	Childcare – Check in at Main Lobby	Lakeside Suite
7:30 am	5:30 pm	Cybercafé – Sponsored by HP	Torreys Peak Foyer
8:30 am	9:30 am	“Hoppers Meeting”–Volunteer Orientation	Crestone Peak II - IV
9:00 am	9:30 pm	Nursing Mothers Room	Gold Camp
9:30 am	10:00 am	Welcome: Anne Condon, GHC General Chair – PhD Forum and New Investigators Sessions Begin	Crestone Peak II - IV
10:00am	11:00am	PhD Forum 1-3/New Investigators 1&2	Various
11:15am	12:15am	PhD Forum 4-6/New Investigators 3&4	Various
12:15pm	1:00pm	PhD Forum/New Investigators Lunch	Grays Peak I – II
1:00 pm	2:30 pm	Recession Proof Your Career! Networking Workshop with Jo Miller – Sponsored by Cisco	Keystone Lodge Ballroom
2:30 pm	5:30 pm	Resume Clinic – Sponsored by Cisco	Silvers
2:30 pm	4:00 pm	Structured Networking Event with Jo Miller – Sponsored by Cisco	Keystone Lodge Ballroom

4:15pm	5:15 pm	Unstructured Networking Event with the Connect Project. Affinity Groups Meeting – Sponsored by ACM Women’s Council and the Anita Borg Institute for Women and Technology	Keystone Lodge Ballroom
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Grace Hopper Celebration for Women and Computing Begins

Wednesday, October 1, 2008

Start Time	End Time	Description	Location
5:30 pm	9:30 pm	Nursing Mothers Room	Gold Camp
5:30 pm	9:00 pm	Childcare – Check in at Main Lobby	Lakeside Suite
5:30 pm	9:00 pm	Exhibits Open	Shavano & Longs Peak Foyers
5:30 pm	7:00 pm	For the Newcomer Meeting for First-Time GHC Attendees & Scholarship Recipients	Quandary Peak I – III
5:30 pm	7:00 pm	LGBT Meetup	Tenderfoot Lounge
7:00 pm	9:00 pm	Opening Reception and Technical Poster Session	Red Cloud Peak & Shavano Peak
9:00 pm	10:00 pm	“Hoppers” Meeting- Volunteer Orientation	Crestone Peak II - IV

Thursday, October 2, 2008

Start Time	End Time	Description	Location
Ongoing		Free Wireless Internet Available in All Conference Areas – Sponsored by Juniper Networks	All GHC Meeting Spaces
7:00 am	5:30 pm	Registration Open	Main Lobby
7:00 am	8:15 am	Keynote Breakfast – (By Invitation Only)	Castle Peak I – II
7:30 am	8:30 am	ABI Ambassadors Breakfast	Castle Peak III
7:30 am	7:00 pm	ABI Information Table	Main Lobby
7:00 am	5:30 pm	Cybercafé – Sponsored by HP	Torreys Peak Foyer
7:30 am	8:45 am	Continental Breakfast	Red Cloud Peak & Shavano Peak
8:00 am	11:00 pm	Nursing Mothers Room	Gold Camp
8:00 am	11:00 pm	Childcare – Check in at Main Lobby	Lakeside Suite

8:00 am	5:30 pm	Exhibits Open	Shavano & Longs Peak Foyers
8:30 am	9:45 am	Welcome: Anne Condon, General Chair, Telle Whitney, President, Anita Borg Institute Keynote Speaker: Fran Allen, IBM Fellow Emerita and 2006 Turing Award Winner	Longs Peak & Grays Peak I – III
9:45 am	10:00 am	Break	Red Cloud Peak & Shavano Peak
10:00 am	11:00 am	Session 1	Various
11:10 am	12:20 pm	CTO Forum – Meeting with Students (By Invitation Only) – Sponsored by Intel	Castle Peak I – II
11:20 am	12:20 pm	Session 2	Various
12:20 pm	1:20 pm	Main Conference Lunch	Longs Peak & Grays Peak I – III
12:20 pm	1:20 pm	Women of Color Lunch (Prior RSVP required)- Hosted by the Richard Tapia Celebration of Diversity in Computing. Sponsored by HP.	Divide Room & Ten Mile Room
12:20 pm	1:20 pm	Systers Lunch (Prior RSVP required)	Castle Peak III – IV
12:20 pm	1:20 pm	CTO and Student Lunch – (By Invitation Only) – sponsored by Intel	Castle Peak I – II
1:20 pm	2:45 pm	CTO Plenary Session – Leading Technology: A View From the Top: Sophie Vandebroek, Xerox, Nan Mattai, Rockwell Collins, Greg Papadopoulos, Sun Microsystems, Justin Rattner, Intel. Moderated by Kate Greene, MIT Technology Review	Longs Peak & Grays Peak I – III
2:45 pm	3:45 pm	Session 3	Various
2:45 pm	4:00 pm	CTO Forum – Roundtable (By Invitation Only) – sponsored by Intel	Castle Peak I – II
3:45 pm	4:10 pm	Break	Red Cloud Peak & Shavano Peak
4:10 pm	5:10 pm	Session 4	Various
5:25 pm	6:25 pm	Birds of a Feather	Various
6:30 pm	7:30 pm	Awards Ceremony Reception	Shavano & Longs Terrace; Shavano & Longs Peak Foyers
7:30 pm	12:00 am	Awards Ceremony Welcome: Anne Condon, GHC General Chair, Telle Whitney, President, Anita Borg Institute. Announcement of the Anita Borg Awards and	Longs Peak & Grays Peak I – III

		Denice Denton Award recipients, networking reception, music and dancing	
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Friday, October 3, 2008

Start Time	End Time	Description	Location
Ongoing		Free Wireless Internet Available in All Conference Areas – Sponsored by Juniper Networks	All GHC Meeting Areas
7:00 am	7:00 pm	Registration Open	Main Lobby
7:30 am	7:00 pm	ABI Information Table	Main Lobby
7:00 am	5:30 pm	Cybercafé – Sponsored by HP	Torreys Peak Foyer
7:30 am	8:45 am	Continental Breakfast	Red Cloud Peak & Shavano Peak
8:00 am	6:00 pm	Nursing Mothers Room	Gold Camp
8:00 am	10:00 pm	Childcare – Check in at Main Lobby	Lakeside Suite
8:00 am	5:30 pm	Exhibits Open	Shavano & Longs Peak Foyers
8:30 am	9:45 am	Welcome: Heidi Kvinge, Program Chair. Keynote Speaker: Mary Lou Jepsen, CEO Pixel Qi	Longs Peak & Grays Peak I – III
9:45 am	10:00 am	Break	Red Cloud Peak & Shavano Peak
10:00 am	11:00 am	Session 5	Various
11:20 am	12:20 pm	Session 6	Various
12:20 pm	1:30 pm	Main Conference Lunch	Longs Peak & Grays Peak I – III
12:20 pm	1:30 pm	Latinas in Computing Lunch (Prior RSVP required)	Castle Peak I
12:20 pm	1:30 pm	Junior Faculty Lunch (Prior RSVP required) – sponsored by NCWIT	Castle Peak III
12:20 pm	1:30 pm	GHC Scholarship Reunion Lunch	Torreys Peak I – II
12:20 pm	1:30 pm	LGBT Lunch (Prior RSVP required)	Windwood Room
12:20 pm	1:30 pm	ResearchHers Lunch (Prior RSVP required) – Sponsored by AT&T Research Labs	Castle Peak II
12:20 pm	1:30 pm	Fran Allen Career Mentoring Award Lunch (By Invitation Only)	Foxfire Room
1:30 pm	2:30 pm	Session 7	Various

2:50 pm	3:50 pm	Session 8	Various
3:50 pm	4:00 pm	Break	Red Cloud Peak & Shavano Peak
4:00 pm	5:00 pm	Session 9	Various
5:10 pm	6:10 pm	Birds of a Feather/Web 2.0 Session	Various
7:00 pm	10:00 pm	Sponsor Night – Hosted by Microsoft and Google – Western BBQ Street Festival	Keystone Village, Lakeside

Saturday, October 4, 2008

Start Time	End Time	Description	Location
Ongoing		Free Wireless Internet Available in All Conference Areas – Sponsored by Juniper Networks	All GHC Meeting Areas
7:00 am	10:00 am	Registration Open	Main Lobby
7:00 am	8:00 am	Continental Breakfast	Red Cloud Peak & Shavano Peak
7:30 am	9:30 am	Cyber Café Open – Sponsored by HP	
8:00 am	10:00 am	Nursing Mothers Room	Gold Camp
8:00 am	10:00 am	Childcare – Check in at Main Lobby	Lakeside Suite
8:30 am	9:30 am	Town Hall Meeting – Sponsored by NCWIT	Longs Peak & Grays Peak I – III

End of Conference

Program Detail:

Wednesday, October 1st

10:00-11:00am

PhD Forum 1 – Interdisciplinary Computing

Location: Crestone Peak II-IV

Towards Compact, Robust DNA Self-Assembly based Computation: Modeling, Simulation and Experiments

Presenter: Urmi Majumder (Duke University)

Although self-assembly is a powerful technique for constructing nanoscale objects, due to its

great complexity, its immense engineering potential has been inadequately harnessed. My thesis addresses this challenge by asking the following question: How can self-assembly be used to perform arbitrarily complex and robust computation? I approach this question by studying basic mathematical properties of self-assembly and by designing, simulating and fabricating self-assembled systems using DNA as a nanoconstruction material.

Computational Modeling and Formal Analysis Techniques in Interdisciplinary Studies of Complex Systems

Presenter: Mona Vajihollahi (Simon Fraser University)

This work deals with the challenges of applying computational techniques in novel research areas, such as Computational Criminology, focusing on the needs of truly interdisciplinary research projects. Bridging the gap between disciplines requires new approaches that accommodate solid common grounds for clarifying different assumptions and expectations. We present a methodological framework that addresses such special needs and focuses on the 'cooperative process' of transforming complex domain knowledge into computational artifacts.

Spatial Analysis of Meeting Speech Scenes

Presenter: Eva Cheng (University of Wollongong)

Within the field of digital speech signal processing, this doctoral research focuses on speech signal description and extraction of semantically meaningful metadata. Of particular interest is the use of spatial information to detect and annotate significant events in multichannel meeting speech recordings. The research methodology adopted approaches the problem of reliably estimating speaker location information through developing software algorithms, investigating multi-microphone hardware solutions, and optimally combining the two together.

PhD Forum 2 – Hardware, Real-time & Embedded Systems

Location: Torreys Peak II

Analytically Bounding Data Cache Behavior for Real-Time Systems

Presenter: Harini Ramaprasad (North Carolina State University)

My research work makes contributions to data cache analysis and static timing analysis for hard real-time systems. First, data cache behavior is characterized statically for a single task. Second, data cache preemption effects are accounted for, thus calculating tight response time bounds for preemptive tasks. Third, a methodology is proposed to calculate an upper bound on the response times of tasks in systems where some tasks may have critical sections.

Leveraging Mixed-Process 3D Integration for Reliability and Cache Hierarchies

Presenter: Niti Madan (University of Utah)

Emerging three-dimensional (3D) integration technology enables vertical stacking of silicon dies with high density and low latency interconnects. This results in increased processor performance as well as reduced power consumption because of smaller on-chip wires. Several research opportunities and challenges in 3D technology are being studied at the fabrication, circuit design and architecture level. This dissertation explores novel applications for 3D die stacking at the micro-architecture level with an emphasis on mixed-process integration.

Embedded Systems in Body Sensor Networks: Experimental Methods for Continuous Monitoring, Network Connectivity, and Physical Security

Presenter: Tammara Massey (University of California, Los Angeles)

The shrewd design of embedded systems make efficient use of limited resources through efficient reconfiguration schemes that balance the trade-offs between power consumption,

memory consumption, and interoperability in heterogeneous environments. Medical applications, in particular, will benefit from lightweight reconfiguration techniques that will improve the quantity and quality of ubiquitous data collection. Reconfigurable software in heterogeneous embedded systems that adapts to the environment is essential for usability and system performance.

PhD Forum 3 – Mixed Session: Sensors, Sensor Networks & User Interfaces

Location: Torreys Peak III

Context-Sensitive Intelligent Cueing

Presenter: Julie S. Weber (University of Michigan)

I focus on evaluating a variety of visual presentations of electronic notifications. In contrast to the breadth of work addressing the question of when to interrupt a computer user with a notification, my work addresses the less studied question of how to deliver interruptions.

Results motivate future investigation into the efficacy of varying the presentation style of a notification for tailoring to users' individual preferences or requirements.

Quality of Information-aware Design and Management of Sensor Network

Presenter: Sadaf Zahedi (University of California, Los Angeles)

Providing a high quality of information (QoI) from sensor networks is an important design goal. A modular analysis framework is introduced to evaluate the QoI of sensor network deployments. The process is decomposed to steps of modeling the characteristics of sensor networks, analyzing the QoI at sensor and network level, and exploring trade-offs and optimized designs. Sensor network is managed at runtime to detect the faults in tiered fashion and take run-time actions.

Multitier Multiscale Sensing: A New Paradigm for Actuated Sensing

Presenter: Diane M Budzik (University of California, Los Angeles)

Multitier Multiscale Sensing is a new paradigm for actuated sensing for efficiently sampling dynamic spatiotemporal phenomena with high fidelity. This approach introduces a hierarchy of sensors according to sampling fidelity, spatial coverage, and mobility characteristics. The application of solar light radiation illustrates a two-tier implementation of multiscale sensing.

Experiments performed in simulation and on a physical robotic system show that multitier multiscale sensing is suitable for sampling dynamic spatiotemporal phenomena.

New Investigators 1 – Networking

Location: Torreys Peak IV

A 3D N-tier Architecture for a Multi-parameter Ocean Monitoring Underwater Wireless Sensor Network

Presenters: Supriya Vadlamani (Birla Institute of Technology and Science), Aparna Sasidharan (Birla Institute of Technology and Science)

In this paper, we propose a 3D multi-tier architecture for Underwater Wireless Sensor Networks which can be used for Multi-parameter Ocean column monitoring. The nodes in this network can be fixed or mobile. The network topology can change with node mobility and the network is reconfigurable. The architecture defines multiple layers along the entire ocean

column. A varying combination of sensor clusters and different underwater vehicles is employed at each level.

Minerva: Learning to Infer Network Path Properties

Presenter: Rita H Wouhaybi (Intel Corporation)

Knowledge of the network path properties such as latency, and hop count is key to the performance of overlay networks, grids and p2p applications. However, the size of the Internet makes the task of measuring these immensely difficult. In this paper, we propose a novel learning-based approach, called Minerva, for the inferencing of inter-node properties, resulting in a more scalable approach based on partial measurements.

New Investigators 2 – Modeling & Simulation

Location: Crestone Peak I

Efficient Parallel Simulation of an Individual-Based Fish Schooling Model on a Graphics Processing Unit

Presenters: Hong Li (University of California, Santa Barbara), Allison Kolpas (University of California, Santa Barbara)

Due to their low cost and high performance processing capabilities, graphics processing units (GPUs) have become an attractive alternative to clusters for some scientific computing applications. In this paper, we show how stochastic simulation of an individual-based fish schooling model can be efficiently carried out on a general-purpose GPU. We describe our implementation and present computational results to illustrate the power of this new technology.

Minimum Cost Routing with Local Processing for Distributed Statistical Inference

Presenter: Animashree Anandkumar (Cornell University)

Classical routing does not exploit “inherent” saving in costs arising from data reduction in a sufficient statistic for inference. We explore in-network processing for inference, using Markov random field (MRF) model for spatial correlation. We show that the minimum cost routing for computation and delivery of the likelihood ratio is an approximation-ratio preserving Steiner tree on expanded graph. Hence, any Steiner-tree approximation has the same ratio for minimum cost fusion.

A Remote Server-based Network Emulation System

Presenters: Yan Gu (North Dakota State University)

This paper proposes a remote network emulation approach that utilizes a distributed server-based architecture in which local low-fidelity emulators provide real-time QoS predictions to distributed applications, coupled with a remote large scale high-fidelity simulator that continuously updates and calibrates the local low-fidelity emulators. Experimental results examining emulation results show that the remote network emulation system provides a promising approach to network emulation supporting accuracy and scale while meeting real-time constraints.

Wednesday, October 1st

11:15-12:15pm

PhD Forum 4 – Artificial Intelligence & Learning Systems

Location: Crestone Peak II-IV

Using Planning Techniques to Build a Better World

Presenter: Liangrong Yi (University of Kentucky)

My research area is decision-theoretic planning. I am working on Markov decision process based planning: algorithm design and applications. The first application is decision support for welfare case managers. For that project, I created two new planning algorithms: a receding-horizon planner and a concurrent-action planner. The second application is music, specifically harmony generation. Given the soprano line, my algorithm automatically generates the other three voices of a four-part harmony.

Class Noise Detection through Instance Weighting

Presenter: Umaa D Rebbapragada (Tufts University)

My thesis explores a novel solution to the problem of detecting and eliminating mislabeled training data. Past solutions either discard or correct suspected mislabelings. My approach weights each instance according to its probability of cleanliness. Our hypothesis is that instance weighting improves any supervised method whose performance is impacted by mislabeled training data, including active and semi-supervised learning. Thus, this research has important consequences for the field of supervised learning.

Advanced Reasoning about Dynamical Systems

Presenter: Yilan Gu (University of Toronto)

My research focuses on advanced reasoning in dynamic systems. We proposed a modified fragment of the situation calculus (SC) that can assure decidable reasoning and has potential applications to Semantic Webs. Recently, we developed a framework to handle large taxonomies of actions compactly, gaining us computational advantages. Now, we consider another improvement to the SC by using many-sorted logic. We will consider their possible applications to other AI research areas.

PhD Forum 5 – Security & Privacy

Location: Torreys Peak II

Privacy Preserving Distributed Data Mining: A Game-Theoretic Approach

Presenter: Kamalika Das (University of Maryland, Baltimore County)

This research aims at formalizing a new approach toward privacy preserving data mining in the light of economic game theory. The focus of this research is two-fold: (i) develop a new model of privacy for heterogeneous multi-party distributed data mining environments and (ii) design mechanisms to get rid of some not-so-practical assumptions present in the privacy preserving data mining literature for computation primitives such as sum and inner product.

Intrusion Detection in Wireless Ad hoc Networks Using Cross-layer Designs

Presenter: Geethapriya Thamilarasu (University at Buffalo)

The goal of our research is to develop an efficient intrusion detection system for wireless ad hoc networks to protect and defend these networks from various security threats and vulnerabilities. We adopt cross-layer interaction techniques to gather relevant audit information from different protocol layers to identify malicious network behaviors. Our research seeks to facilitate the deployment of IDS tool for various wireless networking

applications ranging from military to commercial domains.

A Verification Framework for Broken Access Control Attack in Dynamic Web Applications

Presenter: Manar Hasan Aalfi (Queens University)

This thesis will propose a security analysis framework for dynamic web applications. A reverse engineering process will be performed over a dynamic web application to extract a role-based access control security model. A formal analysis will be applied on the recovered model to check access control security properties. This framework may be used to verify if a dynamic web application conforms to the access control policies specified by a security engineer.

PhD Forum 6 – Information Management

Location: Torreys Peak III

Framework for Interactive Massive Volume Visualization

Presenter: Susan Frank (Stony Brook University)

A framework for distributed volume visualization is presented. Out-of-core region growing is introduced for segmentation. Flex-blocks are cells containing empty space and a cropped subvolume, which are used for data reduction. Brick grouping dynamic programming (DP) is used to partition the scene from a DAG of bricks. Moving walls DP uses slab-projection slices, which encrypt empty space information. The cell-tree is a concise representation of ray-traversal dependencies used for ray-task scheduling.

Reliability and Scalability of Large Scale Archival Storage Systems

Presenters: Deepavali Bhagwat (University of California, Santa Cruz)

The design of large scale archival storage systems is a challenging problem. Archival Systems need to be cost effective: storage costs must be reduced by removing data redundancies; they must be reliable: data must be protected to survive storage media failures; they must be scalable: the sheer volume of data required to be preserved makes this imperative. My PhD thesis focuses on these three areas of archival storage systems.

Scalable Content-Based Music Retrieval on Acoustic Datasets via Hashing

Presenters: Yi Yu (Nara Women's University)

A less emphasized but crucial aspect of content-based music retrieval is how to represent complex audio features to make them easily indexable for quickening the matching of audio data. We address this important issue from two points: i) refining music representation and ii) organizing music documents by index-based approximate techniques. Experimental evaluations prove that the proposed query-by-content music retrieval techniques can be effectively and practically applied in a large audio dataset.

New Investigators 3 – Large Scale Patterns & Parallel Computing

Location: Torreys Peak IV

Large-scale Distributed Storage Systems

Presenter: Aram Shahinfard (University of California, San Diego)

A major challenge in building large-scale distributed applications is designing a storage system that scales to massive volume of data, with a high level of availability and performance. Most such systems run on commodity hardware with lower performance and reliability than high-end

servers. Also commercial databases are unable to scale to these requirements. In this paper we present Google's Bigtable and Amazon's Dynamo, two custom designed distributed storage systems.

Managing Trust and Interoperability in a Grid

Presenters: Shashi Bhanwar (Thapar University), Seema Bawa (Thapar University)

Security is a major issue that must be resolved in order for the potential of the grid to be fully exploited. In this paper, we discuss architectural, infrastructural and management issues related to grid security. We elaborate Grid Security requirements such as authentication, authorization and confidentiality. We have discussed two major security challenges faced by grids today for its deployment on massive scale and at enterprise level: interoperability and trust management.

FraSPA: A Framework for Synthesizing Parallel Applications

Presenter: Ritu Arora (University of Alabama at Birmingham)

This paper introduces a Framework for Synthesizing Parallel Applications (FraSPA) for multiple-platforms in a user-guided fashion. This research work is motivated by the complexities associated with the Message Passing Interface (MPI) [1], the widely used parallel programming standard. FraSPA will address these complexities and will facilitate the synthesis of parallel programs from sequential application and middleware components. A high-level design approach and initial work to demonstrate the feasibility of FraSPA are presented in this paper.

New Investigators 4 – Algorithms & Applications

Location: Crestone Peak I

Kernel Method for Predicting DNA-Binding Proteins in Yeast from Heterogeneous Data Sources

Presenter: Xin Zhang (Arizona State University)

We present a kernel-based learning method for predicting DNA-binding proteins from multiple data sources. In cross validation over integrated kernels, the overall average accuracy is over 88%, which is better than previously published results using only structural and sequence information. We further apply the method over proteins with unknown structure information. The results demonstrate that kernel method combining with multiple data sources has great potential in accurately predicting DNA-binding proteins.

Exploiting Advances in ICT Technologies to Affectively Monitor Student Learning

Presenter: Aisha Ijaz (Liverpool Hope University)

This paper examines the potential of exploiting state-of-the art technologies when affectively monitoring student learning to form an enriched and unobtrusive system that responds to humans with the aim of modernizing the way users learn. An amalgamation of affective computing and wireless sensor networks outline an intelligent system integrated within an ambient environment providing a novel model of learning which underpins the interplay between learning and emotions.

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Thursday, October 2nd

Session One

10:00am - 11:00am

Session Detail	Location
<p>Tools and Talk: Conversational Code and the Changing World of the Internet Invited Technical Speaker: Elizabeth Churchill, Principal Research Scientist, Yahoo! <i>The Internet has always been about communication, conversation and collaboration. In this talk, I will draw on a number of research projects that have looked at the communicational aspects of collaborative work. I will describe some recent studies focused on the design of developer networks and of craft communities online. I will consider the ways in which certain tools, applications and platforms do and do not support collaborative conversations. Through this work, I will recast information search as a social practice, complementing - and perhaps challenging - the dominant vision of search as the attempt by an individual to satisfy an information need. I will open discussion to how this shifting view affects the design of social search technologies.</i></p>	<p>Quandary Peak III</p>
<p>Organizations Building a Better World: ABI, ACM-W, CRA-W and NCWIT Panelists: Telle Whitney (Anita Borg Institute), Carla Ellis (Duke University), Lucy Sanders (NCWIT), Elaine Weyuker (AT&T Laboratories) <i>The panel will disseminate information regarding four major "Women in IT" organizations' (The Anita Borg Institute for Women and Technology, ACM's Committee on Women in Computing, CRA's Committee on the Status of Women in Computing Research, Nation Center for Women & IT) projects and ways that audience members can participate in the organizations' projects plus brainstorm new project areas and emphases with audience members.</i></p>	<p>Torreys Peak III</p>
<p>Transforming Yourself into a Technical Leader Panelists: Stephen Tolopka (Intel), Monique Jeanne Morrow (Cisco Systems), Catherine C. Lasser (IBM), Ramune Nagisetty (Intel), Ira Pramanick (Google), Linda Apsley (Microsoft) <i>What does "being a leader" feel like on the technical career ladder? Is it different from being a manager? What new skills are needed? How do you develop your unique voice and express it with impact? Drawing on transformative experiences from their careers, senior men and women from Cisco, Google, IBM, Intel, and Microsoft show how they established themselves as voices of influence and provide practical tips to help build YOUR career.</i></p>	<p>Quandary Peak I - II</p>
<p>Fighting Crime using Gunshot Location Systems</p>	<p>Torreys Peak</p>

<p>Presenters: Elecia White (ShotSpotter), Sarah Newman (ShotSpotter) <i>Gunshot location systems direct police to crime scenes quickly, saving lives and catching criminals. We describe the science behind the ShotSpotter system including the audio signal processing, gunshot triangulation, incident classification, and the police dispatcher interface. Through the efforts of engineers and scientists, drawing on a wide variety of computer science disciplines, gunshot location systems have made the leap from theory to application and are building a better world.</i></p> <p>AND</p> <p>Future Mobile Technology Empowering Users: Understands, Guides, Decides</p> <p>Presenter: Mary Smiley (Intel) <i>Future mobile devices will understand users at a depth that was never before possible, enabling technology to guide them and even act on their behalf throughout their life. This is already starting to be realized through increasingly mobile technology, pervasive connectivity, context awareness and novel means of interacting with devices.</i></p>	<p>IV</p>
<p>How to Manage Your Career When “Life Gets in the Way”</p> <p>Panelists: Kathleen E Naughton (Hewlett-Packard), Jody Mahoney (Anita Borg Institute), Celeste Null (Intel), Valentina Salapura (IBM), Rebecca Coleman (Microsoft), Henry Schauer (Hewlett-Packard) <i>Life is filled with unexpected events that demand attention over everything else. This panel will explore how women have managed their careers while dealing with breast cancer, divorce, single-parenting, transitioning elderly parents from independent living, and menopause. We’ll hear about the tools used by these women to survive and prosper through these life events. We’ll also hear a male manager’s perspective.</i></p>	<p>Torreys Peak I - II</p>
<p>Risky Business – Building Teams and Taking Risk as the Leader</p> <p>Invited Speaker – Penny Herscher, CEO FirstRain <i>What does it take to lead a team? What makes a good leader? Leaders have different personalities but good leaders have characteristics in common when it comes to vision, people and taking risk. Penny’s talk will share her beliefs on the essentials of leadership, peppered with examples from the two very different companies she has led. She’ll describe why the team is so important, how to build it to be world class, and how she thinks about risk as she faces company defining decisions. The talk will be interactive with Q&A at the end.</i></p>	<p>Crestone Peak II - IV</p>
<p>Innovating with Chip Multi-Threading Technology</p> <p>Presenter: Catherine Ahlschlager (Sun Microsystems) <i>The goal of this talk is to encourage researchers and students to participate and innovate using chip multi-threading (also known as CMT) technology. At the end of the presentation, the audience will know what CMT is and how to start their own innovation by taking advantage of the infrastructure made available by the OpenSPARC program.</i></p> <p>AND</p> <p>Outside of Normal Operating Conditions: Using Commercial Hardware in</p>	<p>Crestone Peak I</p>

<p>Space Computing Platforms Presenter: Heather M Quinn (Los Alamos National Laboratory) <i>Over the past decade field-programmable gate arrays (FPGAs) have been useful in speeding up digital signal processing (DSP) algorithms, and FPGA implementations can be orders of magnitude faster than microprocessor implementations. As many national security satellites are DSP-oriented, many organizations have started using commercial FPGAs to process data closer to the sensor. Using commercial technology successfully in this environment has lead to new research into fault tolerance and resilience.</i></p>	
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Thursday, October 2nd

Session Two

11:20 – 12:20

Session Detail	Location
<p>Building a Better World via the User-Centered Design of Technology Invited Technical Speaker: Mary Czerwinski, Research Area Manager Visualization and Interaction Group, Microsoft Research <i>Today's information workers are characterized by their ability to easily handle interruptions, multi-task, switch tasks quickly, and make sense of enormous amounts of information in high-pressure situations. Current and future technologies, including various wearables and sensing devices, ensure that robust communications and information transmissions can occur almost anywhere, any time. Our ability to log, collect, and visualize event data has become more sophisticated, allowing us to analyze trends and identify patterns across many areas of individual and group behaviors. How do we use these technological trends to ensure that we are designing tools that improve productivity, insight, and an overall sense of user control? In this talk, Mary discusses her research group's approach to the user-centered design of advanced user interfaces, and she describes several of their research projects.</i></p>	<p>Torreys Peak I - II</p>
<p>Building the Earth in 3D (Hands-on) Presenters: Lori Meiskey (Google), Jilmil Saraf (Google) <i>This talk will demonstrate how to create and update the buildings in Google Earth using the simple yet powerful 3D modeling software, Google SketchUp. We will also teach you how to instantly spiff-up your models by dragging and dropping pre-created models available in the 3D Warehouse. Come and learn to create your own world and share it with the world !!</i></p>	<p>Crestone Peak I and the Internet Café</p>

<p>Mid-Career Course Correction Panelists: Ira Pramanick (Google), Alexandra Krasne (Anita Borg Institute), Anne Krook (Amazon), Ana Pinczuk (Cisco Systems), Catherine C. Lasser (IBM), Mimi Hills (Sun Microsystems), Robin Goldstein (Microsoft) <i>Mid-career crisis can hit you suddenly. How do you determine that you are in that situation, and how do you get out of it? Are there ways to proactively avoid getting into such a situation? Successful women from ABI, Amazon, Cisco, IBM, Microsoft and Sun, will each draw from their rich experiences, to address these important questions, and to offer their advice.</i></p>	<p>Crestone Peak II – IV</p>
<p>The Synergistic Evolution of Software & Hardware Technologies Panelists: Uma Srinivasan (Intel), Usha Prabhu (Xilinx), Janice Nickel (Hewlett-Packard), Mary Hall (University of Southern California), Cynthia McGuire (Sun Microsystems), Carol Eidt (Microsoft Corporation), Mary Smiley (Intel), Rina Raman (Xilinx) <i>As the complexity of system design increases, the dividing lines between hardware and software technologies become blurred. This panel discusses the synergistic evolution of software and hardware technologies in complex systems (such as high availability systems, mobile devices and services, biomedical appliances) and the challenges and opportunities presented by this evolution. Technical leaders from industry and academia discuss ways to foster collaboration as the pathway to breakthrough innovation.</i></p>	<p>Quandary Peak I – II</p>
<p>Enabling Nonprofits to Accomplish Their Missions through Technology Panelists: Meghan Morrison (Swift River Consulting), Meghan Nesbit (Salesforce.com), Cindy Goral (Anita Borg Institute), Sonja Karkare (NPower NY), Janice Lathen (Powering Potential) <i>Speakers will discuss how different technologies have benefited humanity by enabling nonprofits to better meet their missions and improve impact. Topics will include how organizations can apply technology resources to help create healthy, vibrant communities, using Salesforce.com to improve communities, inspire youth to be more successful, and support the world in times of need and promote "compassionate capitalism", and bringing and teaching computers to students in rural Tanzania.</i></p>	<p>Torreys Peak III</p>
<p>Women of Color Career Panel Moderator: Dr. Loretta A. Moore, Professor and Chair, Jackson State University, Panelists Yet to Be Named <i>The Coalition to Diversify Computing (CDC – www.cdc-computing.org), a joint organization of the ACM, CRA, and IEEE-CS, organized this panel to provide an open discussion about current environments and career paths that lead to success for women of color. In particular, the panel will discuss issues relevant to support mechanisms and climates that are necessary to thrive. In addition, the panelists will discuss their particular career paths, identifying issues that still need to be addressed.</i></p>	<p>Quandary Peak III</p>
<p>Build a Better Processor: Breaking through the Technology Challenges Presenters: Mary Jo Doherty (Sun Microsystems), Sonia Leon (Sun Microsystems)</p>	<p>Torreys Peak IV</p>

<p><i>In this presentation, we'll discuss new challenges in microprocessor design presented by characteristics of the latest sub-micron process technologies. We'll describe approaches to meet those challenges in architecture and logic design, circuit and physical design, and especially in the exciting areas where all of these meet. The target audience includes anyone interested in the latest trends in microprocessors, especially any students who are considering a career in hardware design.</i></p>	
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Thursday, October 2nd

Session Three

2:45pm – 3:45pm

Session Detail	Location
<p>Getting It Together: Empowering People through Information (Integration) Invited Technical Speaker: Laura Haas, Distinguished Engineer and Director of Computer Science, IBM <i>We depend on information, in both our work and personal lives. But the information we need is scattered in many different data sources: on the web, in our personal devices, in documents and in databases, or hidden within application programs. Often we need to get information from several of these sources to complete a task. However, this can be a difficult or time-consuming endeavor. This talk describes some information-intensive tasks, choosing examples from such areas as healthcare, science, the business world and our personal lives. It will discuss the barriers to getting information together and delivering it to the people that need it in a form they can understand, review key research on information integration and information interaction, indicate how the combination may enable real progress, and illustrate where research challenges remain.</i></p>	<p>Torreys Peak I – II</p>
<p>Findings, Challenges, and Recommendations for Teaching in Academia Panelists: Briana B Morrison (Southern Polytechnic State University), Joyce Currie Little (Towson University), Susan Rodger (Duke University), Patricia A. Joseph (Slippery Rock University), Frank Friedman (Temple University) <i>This panel will address the challenges of "teaching" professors. First we will discuss this option as a career path, and second discuss challenges facing women in such a career path. Finally, we give recommendations on leadership action to improve this situation by acknowledging the important role of teaching professors in education and give recommendations for improvements</i></p>	<p>Quandary Peak III</p>

<p><i>in working environments.</i></p>	
<p>Taking the Long View – Many Careers in One Company Presenters: Katy Dickinson (Sun Microsystems), Sheueling Chang-Shantz (Sun Microsystems), Martha Lyons (Hewlett Packard), Cristina Mahon (Hewlett Packard), Ana Pinczuk (Cisco) <i>Is moving from job to job the best way for a woman to get promoted in a technical company? What happens if she takes the long view instead? The panelists are women who have developed long, successful, multi-disciplinary careers at Sun Microsystems, Hewlett Packard, and Cisco Systems. What did they gain or give up by staying so long? Is this a path for you?</i></p>	<p>Quandary Peak I – II</p>
<p>Introduction to Grid Computing using OSG Presenter: Alina Bejan (University of Chicago) <i>This workshop introduces basic techniques of grid and distributed computing for science and engineering that involve the use of national grid computing resources. The focus will be on enabling the use of national cyberinfrastructure - Open Science Grid and TeraGrid - to perform large-scale computations and data-intensive processing in various fields of research. will be provided with technical information that will allow them to continue exploring grid technologies for their research.</i></p>	<p>Crestone Peak I</p>
<p>The Artemis Project: Teaching Computer Science to Adolescent Girls Panelists: Megan Hugdahl (Brown University), Jihan Chao (Brown University), Emily Mellor (Brown University), Ashley Tuccero (Brown University) <i>The Artemis Project is a free five-week summer camp for incoming ninth grade girls interested in computer science. It is held annually at Brown University. Four undergraduate women who are studying computer science serve as coordinators for the Artemis Project. It is their responsibility to organize the entire program. Artemis fosters enthusiasm and provides knowledge to students, building their confidence and giving them tools to apply to science in the future.</i> AND Using Robots to Introduce Computer Programming to Middle Schools Panelists: Shikha Prashad (Bryn Mawr College), Marwa N. Muhammad (Bryn Mawr College), Mansi Gupta (Bryn Mawr College) <i>This project investigated the effectiveness of using personal robots in capturing interests of middle school students to computing by developing a course that teaches students the Python programming language to program a robot. We conducted the course on 13 home-schooled students aged between seven and thirteen years. Each student was provided with his/her own robot and a textbook that we developed to accompany and complement the course.</i></p>	<p>Torreys Peak IV</p>
<p>Denice Denton Emerging Leader Award Winner – sponsored by Microsoft <i>This award will be presented to a junior non-tenured faculty member (under the age of 40) at an academic or research institution, who is pursuing high-quality research in any field of engineering or physical sciences, while contributing significantly to promote diversity in his/her environment. A \$5000 prize is given at the Awards Ceremony Thursday evening. The award winner will discuss her</i></p>	<p>Torreys Peak III</p>

<i>achievements during this session.</i>	
<p>Social Impact of Advanced Technologies and Telemedicine in the Developing World</p> <p>Panelists: Mateja de Leonni Stanonik (International Virtual e-Hospital), Rifat Latifi (International Virtual e-Hospital)</p> <p><i>This panel will present strategies used in rebuilding medical systems in the developing world, one country at a time, using telemedicine, advanced technologies, and culturally responsive exchanges and collaboration as a platform. Various presentations will report on utilizing advanced technologies and communications to foster women's empowerment and gender equality in the emerging democratic governance of developing countries, and foster medical diplomacy in the regions and countries undergoing political turmoil.</i></p>	Crestone Peak II - IV

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Thursday, October 2nd

Session Four

4:10pm – 5:10pm

Session Detail	Location
<p>A Survey of Some Recent Research at the Border of Game Theory, Economics and Computer Science</p> <p>Invited Technical Speaker:</p> <p>Presenter: Anna Karlin, Professor, University of Washington, Seattle</p> <p><i>The emergence of the Internet as one of the most important arenas for resource sharing between parties with diverse and selfish interests has led to a number of fascinating and new algorithmic problems and issues at the intersection of game theory, economics and computer science. In this talk, we survey recent research at this intersection, with a specific focus on the design and analysis of auctions.</i></p>	Crestone Peak II – IV
<p>Planning, Organizing, and Holding Regional Celebrations of Women in Computing</p> <p>Panelists: Gloria Townsend (DePauw University), Bettina Bair (Ohio State University), Lecia Barker (NCWIT), Tracy Camp (Colorado School of Mines), J McGrath Cohoon (NCWIT), Laura K. Dillon (Michigan State University), Catherine Lang (Swinburne University of Technology), Khadija Stewart (DePauw University), Ellen Walker (Hiram College)</p> <p><i>The presenters will discuss their experiences in planning, financing, organizing, running and assessing regional events for women. The presenters will also discuss barriers that they have overcome in accomplishing their goals,</i></p>	Torreys Peak III

<p><i>as well as practices that accelerate goal achievement. In addition, results of the international Grace Hopper Celebration of Women in Computing Conference will be briefly presented. Finally, we will emphasize a surprising side-effect we have discovered.</i></p>	
<p>Letting the Cup Overflow: Expanding Your Experiences Outside Your Research Lab Panelists: Mary Fernandez (AT&T Research), Kathleen Fisher (AT&T Research), Gilda Garreton (Sun Microsystems), Laura Haas (IBM), Susan Landau (Sun Microsystems) <i>When you work in industry, the rewards are high for working on projects that the lab directors want. Following such a direction can be very rewarding within your organization, but it can also lead to research and/or professional isolation. How do you break those golden ties and establish connections to colleagues in the outside world? What are the rewards for doing so?</i></p>	<p>Quandary Peak I - II</p>
<p>Evaluating Virtualization Performance via Benchmarking – Method and Practice Presenter: Lily Shi (IBM) <i>Nowadays, going virtual is a hot trend in enterprise IT industry. This presentation will begin with an overview of virtualization technology and benchmarking. Then we will evaluate hardware system performance via the virtualization benchmarking tools. The presentation will also explore the many usages of the benchmarking to provide the audience a glimpse of what performance engineers do and how they can impact business.</i> AND Project Fortress: A Multicore Language for Scientists and Engineers Presenter: Sukyoung Ryu (Sun Microsystems) <i>The computing world is undergoing dramatic changes. As computers become more powerful, high-performance computing (HPC) is becoming mainstream and multicore processors are becoming ubiquitous. However, modern programming languages are not ready for these changes. Fortress is a new programming language designed for HPC with high programmability. It provides mathematical syntax to enable scientists to write programs in their own language. It also provides support for easy and correct parallel programming.</i></p>	<p>Torreys Peak IV</p>
<p>Inspiring Girls in Technology: How to Make Every Outreach a Success Presenters: Linda Kekelis (Chabot Space and Science Center), Shannon Madison (Google), Reena Singhal Lee (Google), Marie-Ange Eyoun (Intel) <i>This workshop brings together the expertise of Techbridge, Google, and Intel partners that have successfully collaborated and introduced many more girls to technology and engineering. Participants will receive guidance on how to organize a successful, impactful outreach event for girls and role models. They will also participate in hands-on activities and receive concrete and practical suggestions for conducting effective outreach. Please note this session is 90 minutes from 4:10 - 5:40pm.</i></p>	<p>Torreys Peak I – II</p>
<p>SRC Competition – Second Round</p>	<p>Crestone Peak I</p>

<p><i>The ACM Student Research Competition (SRC), sponsored by Microsoft Research, offers a unique forum for undergraduate and graduate students to present their original research at well-known ACM sponsored and co-sponsored conferences before a panel of judges and attendees.</i></p> <p><i>There are two rounds of competition at each conference hosting an SRC and a grand finals competition: First Round Competitions- The first round is usually referred to as the Poster Session. Judges will review the posters and speak to participants about their research; a group of semi-finalists will be chosen to present at the second round of the competition. Second Round Competitions - Semi-finalists continue by giving a short presentation of their research before a panel of judges, with a supporting power point presentation. Evaluations are based on the presenter's knowledge of his/her research area, contribution of the research, and the quality of the oral and visual presentation. Three winners will be chosen in each category, undergraduate and graduate, receiving \$500, \$300, and \$200, respectively.</i></p>	
<p>Skinware: Getting Innovation Out Invited Speaker: Janice H. Nickel, Hewlett-Packard Laboratories <i>A revolutionary drug delivery technology is presented. Fusing high – tech with biotech, we have created a device enabling fine control over the delivery time and dose – leading to precise control of the drug concentration profile. The device is a programmable, painless injection technology utilizing microneedles. It will deliver one or more drugs in any desired sequence – sustained release, pulsatile delivery, chronotherapeutic delivery, and patient activated delivery – or any combination thereof – all this while avoiding the Gastrointestinal tract. The design utilizes HP's mature ink – jet technology to address the \$100 Billion drug delivery market. In addition, I will describe the odyssey traversed to get the medical technology into product development – including developing a business plan, the VC environment, funding options, valuation, and licensing. The technology was ultimately licensed to a medical device company, and was awarded the Silicon Valley Business Journal's Emerging Technology Award in Medical Devices.</i></p>	<p>Quandary Peak III</p>

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Thursday, October 2nd

Birds of a Feather/SRC Competition

5:25 pm – 6:25 pm

Session Detail	Location
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<p>Recruiting High-School Women into Computer Science Presenters: Inna Pivkina (New Mexico State University), Joan Francioni (Winona State University), Ann Quiroz Gates (University of Texas at El Paso), Laura Marie Leventhal (Bowling Green State University), Enrico Pontelli (New Mexico State University) <i>This BOF session focuses on ways of recruiting of high-school women into Computer Science. We will discuss an outreach program developed at New Mexico State University and another program at the University of Texas at El Paso to promote interest of middle- and high-school girls towards computing disciplines, and explore a role of inter-disciplinary components in such programs. Participants will share challenges and experiences in recruiting high-school women into Computer Science.</i></p>	<p>Torreys Peak I – II</p>
<p>The ABC’s for ABD’s: Working on Your Dissertation Can be a Lonely Process Presenters: Shannon I Steinfadt (Kent State University), Shannon Duvall (Elon University), Anne Weinberger Bracy (Intel), Katarzyna Wac (University of Geneva) <i>“All-But-Dissertation” (ABD’s) are candidates in the last stage of a Ph.D. This BoF is intended to support Ph.D. students that are just beginning dissertation work to well established ABD’s. Topics open for discussion include working with your advisor, parsing down your research topic into a workable dissertation, time management, balancing life and work, self-contracts, positive attitude, perseverance and motivation. Participants are invited to add their own topics and questions.</i></p>	<p>Torreys Peak III</p>
<p>Building the Lavender Network: LGBT Issues, Resources and Collaboration Presenters: BJ Wishinsky (Anita Borg Institute for Women and Technology), Rachel Popkin (Microsoft), Heather Foust-Cummings (Catalyst), Julie Mariga (Purdue University) <i>Lesbian, gay, bisexual and transgender (LGBT) women in computer science, engineering and information technology represent a minority within a minority. We often study and work with few other women, and may not have colleagues who understand issues and concerns unique to the LGBT community. The goal of this session is to bring together LGBT participants and our allies to network, share issues and resources, and mobilize for ongoing community support.</i></p>	<p>Torreys Peak IV</p>
<p>The Bird has Left the Nest – The Challenges of Crossing the World to Follow Our Passions Presenters: Supriya Singh (Microsoft Canada Development Centre), Jean Wu (Microsoft Canada Development Centre), Vineet Kulkarni (Microsoft Canada Development Centre) <i>Women face many challenges when they cross the globe to take up new opportunities, often going against their family's long-held traditions. However, many women have overcome those obstacles to forge new paths in their lives. This panel considers some challenges women have come across and how they were addressed. We want to explore the ways to share our knowledge and</i></p>	<p>Quandary Peak III</p>

<p><i>experiences, in hopes that others can take something away from this.</i></p>	
<p>Grad School 101: Choosing the Graduate Program That’s Right For You and Finding Success and Happiness Throughout Your Graduate Experience Presenters: Leanne Hirshfield (Tufts University), Rachel Lomasky (Tufts University) <i>In this informal session, current graduate students are available to answer questions for prospective and new graduate students. They will discuss choosing where to apply, the application process, and visiting schools, They will also give a review of research areas within the CS field and provide advice on choosing a research area, choosing an advisor, and being successful as a graduate student. Several graduate students from the Tufts CS department will help guide the discussion.</i></p>	<p>Quandary Peak I – II</p>
<p>SRC Competition – Second Round <i>The ACM Student Research Competition (SRC), sponsored by Microsoft Research, offers a unique forum for undergraduate and graduate students to present their original research at well-known ACM sponsored and co-sponsored conferences before a panel of judges and attendees.</i></p> <p><i>There are two rounds of competition at each conference hosting an SRC and a grand finals competition: First Round Competitions- The first round is usually referred to as the Poster Session. Judges will review the posters and speak to participants about their research; a group of semi-finalists will be chosen to present at the second round of the competition. Second Round Competitions - Semi-finalists continue by giving a short presentation of their research before a panel of judges, with a supporting power point presentation. Evaluations are based on the presenter’s knowledge of his/her research area, contribution of the research, and the quality of the oral and visual presentation. Three winners will be chosen in each category, undergraduate and graduate, receiving \$500, \$300, and \$200, respectively</i></p>	<p>Crestone Peak I</p>
<p>A Change for the Better: Improving the Environment at Computing Departments Nationwide Moderator: Ann Redelfs (Redelfs LLC) Speakers: Phoebe Lenear (University of Illinois Global Campus), Sheila Humphreys (University of California, Berkeley), Amanda Nunez (University of Texas at Austin), Bonnie Zhu (University of California, Berkeley), Tiffany Grady (University of Texas, Austin), Sarah Hug (University of Colorado) <i>Women, minority, and disabled scholars in computing are faced with multiple challenges. Too few and far between, they are scattered among majority institutions where they experience all of the pressures of university life and are also most often one of few minority (race/gender/abilities) in their departments. This BoF provides an opportunity to speak out and provide input for institutional change to the greater benefit of our nation’s leading universities.</i></p>	<p>Crestone Peak II - IV</p>

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Friday, October 3rd

Session Five

10:00am – 11:00 am

Detail	Location
<p>Automation to Understand and Ultimately Improve Health and the Environment for the Future Invited Technical Speaker: Deirdre Meldrum, Dean of the Ira A. Fulton School of Engineering, Director of the Center for Ecogenomics, Director of the NIH Microscale Life Sciences Center, and Professor of Electrical Engineering at Arizona State University <i>Advances in automation combined with molecular biology, nanotechnology, chemistry, materials and communications are enabling significant technology advances that permit deeper understanding of human health, disease and our environment. In turn, new diagnostic capabilities and real-time monitoring systems are being developed to detect and respond to, or in some cases prevent, changes in living organisms and the environment.</i></p> <p><i>Automation and its role in the rapidly evolving fields of medicine and the environment will be addressed by presenting relevant ongoing research in centers in the Ira A. Fulton School of Engineering and the Biodesign Institute at Arizona State University along with other relevant results in these fields.</i></p> <p><i>The Centers for Bioelectronics and Biosensors, EcoGenomics, Environmental Biotechnology and Nanobioscience are developing novel molecular, biological, chemical and electronic sensors and tools to take us from understanding how human cells and microorganisms work to personalized medicine and environmental monitoring. Technologies from the centers, including new polymer materials, sensors, microfluidics, nanotechnology and micro-optics are being integrated into microscale instrument modules to measure multiple parameters in living cells in real-time to correlate cellular events with genomic information (e.g. gene expression and genomic rearrangements).</i></p> <p><i>These modules enable scientists to pursue and solve scientific questions that require analysis of heterogeneous cell populations. The microsystem modules are used for real-time quantitative assessment of expression of different genes and the resulting phenotypes as a function of environmental (and cell-to-cell) interactions.</i></p> <p><i>The technology is being applied to fundamental problems of biology and health including cancer, heart disease, and stroke. Further development of</i></p>	<p>Torreys Peak I - II</p>

<p><i>the technology to make it small, robust in the real environment (human body, oceans, etc.), fast, and low power will enable in vivo diagnostics in humans and real-time monitoring of microbial populations in the environment. The talk will delve into exciting possibilities for the future.</i></p>	
<p>“Help, My Supervisor Moved/Had a Baby/Went on Sabbatical!” Surviving Real Life during Grad School Panelists: Kori Inkpen (Microsoft Research), Caitlin Kelleher (Washington University in St. Louis), Regan Mandryk (University of Saskatchewan), Tara Matthews (IBM Almaden Research Center), Irina Shklovski (University of California, Irvine) <i>When real life interferes with Grad school, if it doesn't kill you, will it really make you stronger? The objective of this panel is to discuss obstacles many students encounter and discuss strategies for how to deal with these challenges. Four recent PhD grads will reflect on the ups and down they experienced during grad school and provide suggestions to others who may be experiencing similar challenges.</i></p>	<p>Quandary Peak III</p>
<p>Building a Better World for Women in High Tech: Maximizing Talent, Minimizing Barriers Presenter: Heather N. Foust-Cummings (Catalyst) <i>This presentation details the Catalyst report, Women in High Tech: Maximizing Talent, Minimizing Barriers, which focuses on talent management. Findings are based on employee surveys of more than 60,000 employees at high-tech companies and an online survey. Results indicate technical women at high tech companies were less satisfied than others with supervisory relationships, and fairness and voice. Additionally, the study details barriers to career advancement women in high tech face.</i> AND Building a Better Software - Role of Product Support in Requirements Gathering Presenter: Vandana Mallempati (IBM) <i>This abstract describes the role of product support in requirements gathering. Collaboration between the product support and product development improves the customer requirements. Product support personnel have a unique and comprehensive view of the customer's environment because they analyze, debug, provide solutions to the problems faced by the customer. This knowledge can be used as a feedback to the product development to provide more perspective from a client experience base.</i></p>	<p>Torreys Peak III</p>
<p>Building a Better World: Using Anthropology to Ensure Success in Your Project Panelists: Leslie Sue Lieberman (University of Central Florida), Kathi R. Kitner (Intel), S. Revi Sterling (University of Colorado), John Bennett (University of Colorado at Boulder) <i>Many GHC attendees have been or will be working with diverse populations in the US and in international communities designing, implementing and deploying new technologies. The technology roadmap is changing and</i></p>	<p>Crestone Peak I</p>

<p><i>anthropology can provide many of the guideposts to culturally competent, appropriate, sustainable and equitable technology development and implementation. This panel addresses these issues and offers concrete examples of anthropological approaches that have been successful.</i></p>	
<p>Experiences with OLPC Technology in Ghana, West Africa Presenter: Suzanne Buchele (Southwestern University) <i>The realities of implementing One Laptop Per Child (OLPC) technology in a developing country such as Ghana, West Africa are complex due to infrastructure, educational, and political issues, among others. First-hand experiences with an OLPC pilot project in Accra, Ghana, will be presented, as well as the larger issues of whether or not this type of program is possible and sustainable in the large scale.</i></p> <p>AND</p> <p>Build a Better Future with Creating an ACM-W Chapter in the United Arab Emirates to Help the Peace in the Persian Gulf Presenter: Lilia Kakaradova (Zayed University) <i>The United Arab Emirates is a leading country in the Persian Gulf region who invests in woman undergraduate and graduate education in the engineering and computing fields. The young UAE women are excited to learn and explore the new ideas in telecommunications, networking, information security and system administration with UNIX/Linux. The vibrant Emirate female students are using their knowledge learned at the state of the art labs at Zayed University.</i></p>	<p>Torreys Peak IV</p>
<p>European Women in Science and Engineering Panelists: Julita Vassileva (University of Saskatchewan), Reyyan Ayfer (Bilkent University, Ankara, Turkey), Aurora Vizcaino (University of Castilla-La Mancha, Spain), Wendy Hall (University of Southampton, UK), Nahid Shahmehri (Linkoeplings University, Sweden) <i>The situation in Europe with regard to the representation of women is quite different than that in US and Canada. There are countries in Europe with a lot of women in CS, especially in faculty positions, like countries in former Eastern Europe, Portugal, and Spain. However, the status and the pay of academic jobs in these countries are lower. Women take these jobs since they are more stable, less stressful and allow for taking care of the family, while the husband as a the main breadwinner hops from one high-paying job to another in Industry.</i></p> <p><i>The big question the panel will address is what can we learn from the differences that exist in women's participation in IT in different countries? Do women in developed Western countries have the freedom to self-select out of unattractive (hard, time-swallowing, not paid enough) jobs - a theory that was widely publicized recently, for example, in Susan Pinker's recent book "The Sexual Paradox: Men, Women, and the Real Gender Gap"? Or it is the education system and the unfriendly climate that weeds women away or blocks their career paths? Or do all of these factors work together, with</i></p>	<p>Quandary Peak I - II</p>

<i>different relative strength in different countries?</i>	
<p>Implications of Frontier Nano Science and Technology for the Energy Sector</p> <p>Invited Technical Speaker: Ellen B. Stechel, Manager of the Fuels and Energy Transitions Department in the Energy Futures Group at Sandia National Laboratories</p> <p><i>Fossil Fuels are relatively cheap, easily distributed, and readily used but are a finite energy resource, have serious ecological and geo-political implications. Before the century concludes, the world will need to find abundant, cost effective, safe, secure, and sustainable alternatives or suffer a much reduced standard of living. Existing and emerging technologies will not be sufficient to sustain the growing aspirations of an increasing worldwide population; but frontier science and technology, especially nanotechnology and state-of-the-art computational science, hold the promise and potential to navigate the multitude of challenges, which include energy security, national security, economic-well being, and reducing greenhouse gas emissions. This presentation will highlight some promising opportunities to rise above these challenges.</i></p>	<p>Crestone Peak II – IV</p>

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Friday, October 3rd

Session Six

11:20am – 12:20pm

Session Detail	Location
<p>Programming Language Ideas Escape the Lab: A Declarative Data Description Language for Managing Ad hoc Data</p> <p>Invited Technical Speaker: Kathlen Fisher, Principal Member of the Technical Staff at AT&T Labs Research</p> <p><i>XML. HTML. CSV. JPEG. MPEG. These data formats represent vast quantities of scientific, governmental, industrial, and private data. Because the formats have been standardized and are widely used, many reliable, efficient, and convenient tools exist for processing such data. In an ideal world, all data would be in such formats. In reality, however, we are not nearly so fortunate. Instead, vast amounts of data exist in ad hoc formats, which do not typically have readily available tools. Every day, network administrators, financial analysts, computer scientists, biologists, chemists, astronomers, and physicists deal with ad hoc data in a myriad of complex formats, wasting valuable time on low-level chores like parsing and format</i></p>	<p>Torreys Peak I - II</p>

<p><i>translation instead of actually using the information stored in their data.</i></p> <p><i>In this talk, I will describe the PADS data description language that colleagues and I have designed and built to address this problem. PADS allows users to describe both the physical layout of ad hoc data sources and semantic properties of that data. From such descriptions, the PADS compiler generates libraries and tools for manipulating the data, including parsing routines, statistical profiling tools, translation programs to produce well-behaved formats such as XML, and tools for running queries over raw PADS data sources. The descriptions are concise enough to serve as “living” documentation while flexible enough to describe most of the ASCII, binary, and Cobol formats that we have seen in practice. The generated parsing library provides for robust, application-specific error handling. As I describe PADS and its associated tools, I will highlight how various ideas from the programming language research community have informed the design and implementation of the PADS system.</i></p> <p><i>Information about PADS and a list of the many people who have contributed to the system is available from the project web site: www.padsproj.org</i></p>	
<p>Preparing for an Advanced Degree: Life after the BS/BA Presenters: Jacqueline Thomas (The National GEM Consortium), Patty Lopez (Hewlett Packard)</p> <p><i>Undergraduates, especially minorities, may not pursue an advanced degree because of a lack of knowledge of opportunities (both financial and professional), a lack of role models/mentoring/preparation, and the mystique surrounding the graduate school experience. This workshop will discuss the benefits of graduate school and how to prepare for it. We will share real life experiences from professionals in academia, industry, and government, where they address their fears, reflect on their experiences, and discuss their careers and opportunities.</i></p>	<p>Crestone Peak II – IV</p>
<p>The Imposter Panel Presenters: Kori Inkpen (Microsoft Research), Maria Klawe (Harvey Mudd College), Mary Czerwinski (Microsoft Research), Tiffani Williams (Texas A&M University), Tessa Lau (IBM Almaden Research Center)</p> <p><i>Five seemingly successful women all share the same secret which they will reveal on stage at Grace Hopper 2008. They are imposters. Despite numerous recognitions and being considered leaders in their respective fields they live in fear that their deception will be discovered. That someday everyone will realize that they have been faking it, and aren't as good as everyone thinks. What will happen when the charade ends?</i></p>	<p>Quandary Peak I – II</p>
<p>Engaging Students in the Free Open Source Movement Through Civic Engagement Presenters: Trishan R de Lanerolle (Trinity College), Ralph Morelli (Trinity College), Ingrid Russell (University of Hartford), Sarah Thayer (Trinity College), Myles Garvey (University of Hartford)</p>	<p>Quandary Peak III</p>

<p><i>This panel discussion will provide an overview of the Free and Open Source Software (FOSS) movement, introduce the Humanitarian-FOSS project, an NSF CPATH Project to engage students in building socially beneficial software, and provide perspectives from both faculty and students involved in development of humanitarian Open Source software.</i></p>	
<p>An International Perspective on Successful Programs to Attract Women to ICT Presented by ACM-W Ambassadors Presenters: Catherine Lang (Swinburne University of Technology), Mary Anne Egan (Siena College), Jan Peters (KatalytiK), Reyyan Ayfer (Bilkent University), Jehan Ara (Enabling Technologies) <i>An international snapshot of women in IT in ACM-W Ambassador countries will be provided. There will be a particular focus on political initiatives to address the lack of diversity in the ICT workforce. A discussion of where the under-representation of women in IT sits in current political climates will be addressed leading to at least one example from each country of a successful program to attract women into IT careers.</i></p>	Torreys Peak III
<p>Measuring Success – Partner Panel: TBD</p>	Crestone Peak I
<p>Scaling Applications to Enable Unprecedented Science on Petaflop Platforms Presenters: Maria Eleftheriou (IBM Thomas J. Watson Research Center), Valentina Salapura (IBM Thomas J. Watson Research Center) <i>Massively parallel architectures promise to revolutionize the way researchers do science, by enabling simulations that are orders of magnitude larger in scale than has previously been possible. IBM BlueGene is a large-scale computing platform which currently holds top positions in the Top500-list of the world's most powerful supercomputers. We will present the design goals of the BlueGene family and the challenges in scaling applications on BlueGene for enabling biological simulations.</i></p>	Torreys Peak IV

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Friday, October 3rd

Session Seven

1:30pm – 2:30pm

Session Detail	Location
<p>Multi-Robot Intelligence Invited Technical Speaker: Manuela M. Veloso, Herbert A. Simon Professor of Computer Science at Carnegie Mellon University <i>Robots are physical artifacts with a seamless integration of perception,</i></p>	Crestone Peak I

<p><i>cognition, and action. The presentation will be focused on teams of intelligent autonomous robots performing tasks in highly uncertain domains. Robots need to jointly assess the state of their environment, communicate with each other, make decisions, execute actions towards the achievement of team objectives, and learn from observation and feedback based on the outcome of their actions.</i></p>	
<p>What is a PhD Really Good For?: Thoughts from New(er) Grads Panelists: Stefanie Tomko (Microsoft), Jennifer Beckmann (Microsoft), Renée Bryce (University of Nevada at Las Vegas), Ariadna Font-Llitjós (Vivísimo), Kathrin Probst (Accenture), Laura Tomokiyo (Carnegie Mellon University) <i>This panel will provide personal insights and discussions on career paths upon completion of a computer science graduate program. We will talk about factors that influenced our career path choices, what we really like about our current positions, and what’s been challenging in our positions and in the transition from school. We will also include a discussion of the option to move from a research-focused degree to a product-focused position.</i></p>	<p>Quandary Peak I - II</p>
<p>Business 101: Learning to Speak the Language of Business Panelists: Tessa Lau (IBM Almaden Research Center), Mary Czerwinski (Microsoft Research), Elaine Weyuker (AT&T Research), Ellen Yoffa (IBM Research) <i>This panel will introduce students and young researchers to the language and concepts necessary to make your research strategically align with the business goals of a commercial research organization. Being able to speak the language of business makes it easier for researchers to communicate with the business people who might be interested in supporting their research, and enables one to have a more successful career in industry.</i></p>	<p>Crestone Peak II - IV</p>
<p>Women in the Brave New World of Free and Open Source Software Panelists: Meenakshi Kaul-Basu (Sun Microsystems), Kristen Carlson Accardi (Intel), Valerie Fenwick (Sun Microsystems), Val Henson (Linux), Kathryn Vandiver (NetApp), Zoë Slattery (IBM) <i>Free/Libre Open Source Software (FLOSS) is a movement that has changed the way software products are developed. Embracing FLOSS presents companies with strategic challenges in adjusting development processes, capturing revenue, and engendering strong open source communities. With development of open source projects done on the Internet by virtual teams with relative anonymity, traditional gender biases should be eroded. Yet, studies confirm that about 2% of the open source community are women.</i></p>	<p>Torreys Peak IV</p>
<p>Having Global Impact as a Technical Woman: Information Technology Applied to the Developing World Panel: Ruth Anderson (University of Washington), Elizabeth Basha (CSAIL, M.I.T.), Melissa Ho (University of California, Berkeley), Revi Sterling (ATLAS Institute, University of Colorado at Boulder) <i>Three women will present first hand accounts of how they are building and deploying technologies ranging from mobile devices to sensor networks to</i></p>	<p>Torreys Peak I - II</p>

<p><i>address issues in disaster mitigation, healthcare, and improving the status of women in developing countries. All four speakers will provide advice and give examples of ways attendees can get involved in the area of Information and Communication Technologies for Development (ICTD) through curriculum examples and projects.</i></p>	
<p>Web 2.0 Session: Online Social Networks - Impact to Our Careers Presenters: Carole Dulong (Google), Kimberly Blessing (PaylPal), Victor Chung (HP), Susan Miller (Sun Microsystems), Marzia Polito (Whozat), Elizabeth Yin (Google), Jessica Mitchell (Cisco) <i>Social networking can be a powerful tool for professionals. This panel will discuss examples on how to use online social networks to advance careers, to extend business connections, and increase visibility. Panelists will highlight some of the limitations of this tool in terms of privacy, and reliability, and propose their recommendations. Finally the panelists will explore how communities such as women in computing, can leverage online social networks to strengthen themselves.</i></p>	<p>Quandary Peak III</p>
<p>Anita Borg Social Impact Award Winner: TBD – sponsored by Microsoft <i>The fourth Anita Borg Social Impact Award, an international prize, will honor an individual or team who has caused technology to have a positive impact on the lives of women and society or who has caused women to have a significant impact on the design and use of technology. The recipient of the 2008 Anita Borg Social Impact Award will receive a \$10,000 award and will be honored at the 2008 Grace Hopper Celebration of Women in Computing conference Awards Ceremony and will be discussing her wor/her teams work in this session.</i></p>	<p>Torreys Peak III</p>

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Friday, October 3rd

Session Eight

2:50pm – 3:50pm

Detail	Location
<p>Confidential Advice for Junior Faculty Presenters: Michelle Strout (Colorado State University), Nancy Amato (Texas A& M) <i>Pre-tenure female faculty face unique challenges regarding professional, technical, and life issues. With this session we seek to combat these issues by creating a space where junior women can talk among themselves, swear not to repeat anything that is revealed, discuss the specific problems that they are</i></p>	<p>Torreys Peak IV</p>

<p><i>having, and receive advice from a few senior faculty members. This session is restricted to attendees who are thinking about or are, in fact, junior faculty.</i></p>	
<p>Beyond Classes and Textbooks: a Guide for Starting Grad School Research Panelists: Dilma Da Silva (IBM Research), Kimberly Keeton (HP Labs), Kori Inkpen (Microsoft Research), Cristina Fernandes (University of Sao Paulo, Brazil) <i>In this presentation we provide students with guidelines on transitioning from undergraduate work to conducting research in a graduate program. We offer information on making the best of their initial experience in grad school, from acquiring and sharpening basic skills to picking the "right" problem and communicating results. We advise students on how to avoid common pitfalls and set up a path for exciting and relevant research projects.</i> AND Choosing Your Building Bricks: How to Find Your Research Direction Panelists: Kristin Yvonne Rozier (NASA Langley Research Center), Kristen R. Walcott (University of Virginia), Katie Panciera (University of Minnesota) <i>We are three women in C.S. in three different research areas who arrived at our research topics in very different ways! We present an organized outline of several possible paths for finding the "next" research topic and how to further focus on one problem. Our presentation emphasizes themes common to all our paths. Each speaker shares her personal story and refers to more general tips that have helped her.</i></p>	<p>Quandary Peak I - II</p>
<p>Exciting Career They Don't Tell You about at School: Software Engineer in Test Panelists: Lilia Paradis (Microsoft), Anu Arora (Microsoft), Emese Bari (eBay), Stella Jacoby (Amazon), Shilpa Kolhatkar (Cisco), Silvia Ahmed (NetApp) <i>When everything from National Security to family pictures depends on computers, software must be trustworthy and reliable; making Test a crucial function in hi-tech. Test requires skilled engineers with raw-CS talent and break-it/hack-it aptitude. With no Testing in CS curriculum, new graduates are often unaware of Testing as a career. We invite senior women in Test from leading software companies to talk about career paths, challenges and opportunities within Test.</i></p>	<p>Crestone Peak I</p>
<p>Green Data Centers Panelists: Aglaia Kong (Symantec), Lorie Wigle (Intel), Jane Snowdon (IBM), Brinnan L. Taylor (NetApp), Rachel Zhu (NetApp) <i>We are seeing explosive information growth. The demands for more storage, more servers, faster network interconnects, data replication and data protection are forcing the data center to grow larger and more complex. At the same time, energy prices are rising at an alarming rate, and physical space cannot keep up with business growth needs. Developing an energy-efficient, sustainable data center that still maintains high performance is vital</i></p>	<p>Torreys Peak III</p>

<p><i>to the future of data center development and management. This panel will examine power and space considerations, costs and the latest tools and trends available.</i></p>	
<p>Women Working in International Development to Build a Better World Panelists: Kate Roberts (thewiredwoman), British Robinson (PEPFAR (President’s Emergency Plan for AIDS Relief)), Julie Clugage (Intel), Megan Ryskamp (Haas School of Business), Linda Lee (Qualcomm) <i>Come learn how to apply your unique skills to help women in developing countries. Hear stories from women working in different sectors whose work is having a positive impact on underserved communities throughout the world. Panelists will describe projects benefiting women in developing countries. They will also share what prepared them for their careers, and recommendations on how to apply one’s unique skills to the field of international development.</i></p>	<p>Crestone Peak II - IV</p>
<p>Climbing the Technical Ladder: Obstacles and Solutions for Mid-Level Technical Women Caroline Simard (Anita Borg Institute for Women and Technology), Andrea Henderson (CalState Northridge) <i>If there was one thing a company could do to retain and advance technical women, what should it be? This session will highlight key findings from a major research initiative by the Anita Borg Institute and the Clayman Institute at Stanford University. This new study of 7 prominent Silicon Valley high-tech companies provides:</i></p> <ul style="list-style-type: none"> - current snapshot of technical talent in the high-tech industry - accurate description of women’s experiences of high-tech workplace culture -shared perceptions of what it takes to be successful as a technical worker - key career decision-making issues for women at mid-career - successful strategies to increase the retention and advancement of technical women 	<p>Quandary Peak III</p>
<p>Anita Borg Technical Leadership Award Winner – sponsored by Cisco <i>The Anita Borg Technical Leadership Award recognizes and celebrates an outstanding women technical leader. The recipient will be honored and receive a \$10,000 cash award at the 2008 Grace Hopper Celebration of Women in Computing Conference’s Awards Ceremony. In this session, the award winner will speak about her work.</i></p>	<p>Torreys Peak I - II</p>

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Friday, October 3rd

Session Nine

4:00pm – 5:00pm

Session Detail	Location
<p>Venture Capital in the 'Periphery:' The New Argonauts, Global Search, and Local Institution Building Invited Technical Speaker: Anna Lee Saxenian, Dean and Professor in the School of Information and Professor in the Department of City and Regional Planning at the University of California, Berkeley</p> <p><i>The emergence of centers of technology entrepreneurship and innovation outside, but closely connected to, the advanced core of the world economy, is one of the most striking features of contemporary capitalism. This talk explores the growing role of global, or external, search networks (that firms and other actors rely on to locate collaborators who can solve part of a problem they face, or require part of a solution they may be able provide) in these economic transformations.</i></p> <p><i>Networks of first-generation immigrant professionals from U.S. technology industries--whose members are referred to here as the new Argonauts, an allusion to the ancient Greek Jason and the Argonauts who searched for the Golden Fleece--are naturally occurring search networks. They are ideally positioned to search beyond local routines and identify opportunities in their home countries for complementary “peripheral” participation in the global economy. By collaborating with their domestic counterparts, the new Argonauts have contributed to the development of institutions, like venture capital, that support entrepreneurial experimentation in locations ranging from Taiwan and Israel to China and India. Venture capital is an exemplary search network: it is organized to search systematically for, and foster the development of, entrepreneurs and firms that can collaborate in the co-design of new products and services. This suggests that the most significant contributions of the Argonauts to their home countries are not direct transfers of technology or knowledge, but their participation in external search and domestic institutional reform.</i></p>	<p>Torreys Peak I – II</p>
<p>OurCS: Opportunities for Undergraduate Research in Computer Science: A Conference for Undergraduate Women Panelists: Carol Frieze (Carnegie Mellon University), Desney Tan (Microsoft Research), Elizabeth Bales (University of California, San Diego), Alissa Briggs (Carnegie Mellon University), Sarah Loos (Indiana University), Princess Trillo (University of Texas at El Paso)</p> <p><i>The OurCS panel will discuss objectives and outcomes of this first-of-its-kind research focused conference for undergraduate women in computer science, developed through the collaboration of Carnegie Mellon and Microsoft Research. Students will discuss their overall experiences and join their team leader from MSR to present one of the research projects. We will present survey data and discuss the role of graduates and keynote speakers in providing advice on graduate school.</i></p> <p>AND</p> <p>We Build a Better Researcher Presenters: Lisa M Marvel (US ARL), Nancy Amato (Texas A&M University), Karen Bloch (DuPont Company), Joanne</p>	<p>Quandary Peak I - II</p>

<p>McGrath Cohoon (University of Virginia), Lori L. Pollock (University of Delaware)</p> <p><i>Effective mentoring is challenging but the benefits can be rewarding to the mentor, the mentee, their employer and society. Unfortunately, researchers and their managers do not typically invest resources in developing mentoring skills. This panel will use role-playing to demonstrate how to handle critical mentoring situations and engage the audience. Consequently, we hope to support mentors and encourage researchers and supervisors to invest the time and effort in mentoring effectively.</i></p>	
<p>Internship Programs Showcase - Success Stories (How to Make the Best of Internship Programs - a 360 View)</p> <p>Panelists: Anne Hardy (SAP), Erin Chapple (Microsoft), Patrick Payne (Amazon), Jhilmil Jain (HP Labs), Nicole Tucker (SAP), Ching-Hua Chen Ritzo (IBM), Suzanna Khatchatrian (IBM)</p> <p><i>This panel will discuss internship best practices and success stories for both students and technology companies. Topics will include: What do companies look for in an intern? What is a successful internship? How can students influence success? Is there an ideal internship program? Is there an ideal time for doing internships? Should students do as many internships as possible? The audience will have a chance to ask questions.</i></p>	<p>Crestone Peak II - IV</p>
<p>What's a Supercomputer Good For Anyways?</p> <p>Presenter: Ruth Poole (IBM)</p> <p><i>Competition is fierce to build the world's fastest supercomputer, but what are researchers really doing with all that computational power, and what's driving the need for bigger and faster supercomputers? This presentation gives an overview of the current state of the art in supercomputer technology and a peek into the future. Key areas of research and industry needs are also presented.</i></p> <p>AND</p> <p>Intellectual Property & Patents Empowering Innovation</p> <p>Presenter: Andrea Dick (ThinkFire Services)</p> <p><i>Innovation is essential for devising the improvements required to make the world a better place. Research institutions, universities, emerging companies, and governments are some of the entities responsible for the creation of innovations. Several forms of intellectual property, in particular patents, protect the interests of these entities. This session will educate the attendee about the patent process, benefits of patent ownership and other information about the importance of patents.</i></p>	<p>Torreys Peak III</p>
<p>Changing the World through Technological Innovation</p> <p>Presenter: Joann Ordille (Avaya Labs Research)</p> <p><i>Whether you work in a government or industrial research lab, or academia, it is very satisfying when your research has a positive, enduring impact on the world. One way this can occur is through the transfer of your technology into products and services. This session includes an overview of the technology transfer process, based on such works as "Crossing the Chasm" and the "Innovator's Dilemma," and ample time for discussion.</i></p>	<p>Torreys Peak IV</p>

<p>AND Communicating Within Virtual Teams Presenter: Carlena M Harris (IBM) <i>Many organizations have tapped into the use of virtual teams, which has caused a shift in team environments. The workshop covers one of the critical areas that team leaders and team members need to be attentive to for them to be successful despite their virtual team environments. The topic is how to use the right communication tools in virtual team environments to assist virtual teams in reaching their project goals.</i></p>	
<p>ACM Membership Gender Study Panelists: Paula Gabbert (Furman University), Wendy Hall (ACM), Lillian Israel (ACM), Lucy Sanders (NCWIT), Telle Whitney (Anita Borg Institute), Tracy Camp (Colorado School of Mines) <i>The objective of this panel is to present the qualitative and quantitative results of a gender study undertaken by ACM of its membership base. In addition, the results of the study will be used to foster discussion about how the services of ACM and other organizations interested in supporting women in computing can better meet the needs of women in computing.</i></p>	<p>Crestone Peak I</p>
<p>Change Agent Awards Panel: TBD – sponsored by Google <i>The Anita Borg Change Agent Awards celebrate the accomplishments of technical women from emerging countries. These awards are designed to recognize up-and-coming leaders that impact or advance women’s participation in technology, while also internationally expanding the reach of the Grace Hopper Celebration of Women in Computing conference. This panel made up of the 3 amazing award winners who will talk about their work and how they are using technology across the globe. .</i></p>	<p>Quandary Peak III</p>

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Friday, October 3rd

Birds of a Feather/Web 2.0 Session

5:10pm – 6:10pm

Session Detail	Location
<p>Setting Up An Effective Organization To Support Girls Presenters: Ira Pramanick (Google), Fauzia Saeed (Sun Microsystems), Katy Dickinson (Sun Microsystems), Kristin Y. Rozier (NASA), Meenakshi Kaul-Basu (Sun Microsystems) <i>The MAGIC program for mentoring middle and high school girls was kicked off at GHC2007. The MAGIC team has spent the past year setting up the</i></p>	<p>Torreys Peak III</p>

<p><i>infrastructure towards building an effective organization for supporting these girls. We will discuss basic elements of such an infrastructure, and the successes and setbacks that the MAGIC team has faced. Come offer your thoughts, ideas and experiences in related areas!</i></p>	
<p>How to Get Your Dream Job After Graduate School Presenters: Claris Castillo (IBM T.J. Watson Research Center), Mara Silva (Virginia Tech), Dilma da Silva (IBM T.J. Watson Research Center), Patty Lopez (Hewlett-Packard), Cecilia Aragon (Lawrence Berkeley National Laboratory), Raquel Romano (Google) <i>This BOF will tap into the practical knowledge of experienced professionals to discuss (a) how to help graduate students identify a career path (e.g. researcher, developer) that is right for her based on her skill set, experience, and available growth opportunities; and (b) what exactly are the steps that a graduate student needs to take while in school to improve the chances of getting her dream job after graduation.</i></p>	<p>Quandary Peak I - II</p>
<p>Student Groups Networking + Integrating Ideas = Together We Can Make a Better World Presenters: Alicia Chong (Monterrey Institute of Technology and Superior Education, ITESM, Mexico), Sunayana Sitaram (National Institute of Technology, Surat, India), Aakriti Agarwal (Nanyang Technological University), Kathleen Tsoukalas (Simon Fraser University) <i>This session, organized by four members of different student groups, from different institutions and different countries, focuses on how to build Women in Technology Student Groups around the globe by integrating our ideas, sharing old ones and investigating new ones. Our goal is to help new and old groups grow, because Together We Can Build a Better World. The session will be interactive and audience participation is encouraged.</i></p>	<p>Crestone Peak II - IV</p>
<p>Experiences with Maternity Leave and Returning to Work Presenter: Tarik Ono (Sun Microsystems), Gilda Garreton (Sun Microsystems) <i>Raising young children and working full-time is a challenge for all women, especially those involved in fast-changing areas of computer science like parallel programming, mobile computing or hardware design. This BoF will provide an avenue for all women in computing, be it in academia or in industry, US based or foreign, to share their experiences with maternity leave and returning to work after the leave.</i></p>	<p>Quandary Peak III</p>
<p>Using Oral History Stories in Computing Education Presenters: Vicki L. Almstrum (The University of Texas at Austin), Barbara Boucher Owens (Southwestern University), Lecia J. Barker (NCWIT), E. Anne Gates Applin (Ithaca College) <i>This session highlights recent developments in the Computing Educators Oral History Project (CEOHP). The organizers report briefly on the current status of the project and on the results from the Working Group at the SIGCSE ITiCSE Conference. Participants will react to existing materials, share ideas for continued growth of the project, and suggest ways to use the interviews and other materials in pre-college and college settings.</i></p>	<p>Torreys Peak IV</p>

<p>Expanding your HPC toolkit using the TeraGrid Presenter: Daphne Siefert-Herron (Indiana University), Laura McGinnis (Pittsburgh Supercomputing Center), Vickie E. Lynch (Oak Ridge National Laboratory) <i>Funded by the National Science Foundation, the TeraGrid provides essential computational and data storage resources to the national research community. Researchers can use the TeraGrid to access more than 750 teraflops of computing resources and 30 petabytes of data storage. This session is for anyone interested in expanding their access to HPC resources using the TeraGrid and talking with others who have used or who are starting to use TeraGrid resources.</i></p>	<p>Crestone Peak I</p>
<p>Web 2.0 Session: Developing a Collaboration Platform based on Web 2.0 Technology Presenters: Jane Snowdon (IBM T. J. Watson Research Center), William Hutson (IBM) <i>Fueled by Web 2.0 technologies and pervasive, inexpensive access to the internet, the way that customers, suppliers, and business partners are conducting commerce and creating, distributing and consuming content is radically changing. We describe a web business platform for a company's ecosystem that uses advanced technologies such as Web 2.0, SOA, and data analytics to offer tremendous benefits including better overall lead and opportunity visibility, solution development, co-marketing strategy, and tighter collaboration.</i></p>	<p>Torreys Peak I – II</p>

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Wednesday, October 1, 2008

7:00 – 9:00 pm

SRC Poster Session

<p>60GHZ High Speed Wireless Architecture Candy Yiu (Portland State University) <i>A wireless architecture for giga bit per second per node data rate is presented for indoor environments using 60GHz ISM band. 60GHz has deal propagation properties when combined with antenna array technology to maximize spatial reuse. A detailed simulation using ray tracing for 60GHz propagation is developed. We present a resource allocation algorithm combined with an adaptive modulation scheme for individual links. The result shows that giga bps/node is achievable.</i></p>
<p>A Case for Adapting Channel Width in Wireless Networks Ramya Raghavendra (University of California, Santa Barbara) <i>We study a fundamental yet under-explored facet in wireless communication width of the spectrum over which transmitters spread their signals, or the channel width. Through detailed measurements, we first quantify the impact of channel width on throughput, range, and power consumption. Our findings make a strong case for wireless systems that adapt channel width. We present a channel width adaptation algorithm called SampleWidth, which increases</i></p>

throughput by more than 60% compared to the best fixed-width configuration.

A Novel Authentication and Validation Mechanism for Attack Identification and Trace Back in Syslogs for Forensic Analysis

Steen D.S. Monteiro (Utah State University)

This research proposes a novel technique for authenticating and validating syslogs for forensic analysis. Digital evidence needs to be admissible, authentic, believable, and reliable. The proposed technique uses a modification of the Needham-Schroeder protocol and ties together all the entities involved in the generation of a syslog entry through the assignment of digital fingerprints. The assigned fingerprints and the incorporated challenge response mechanism forensically validate the generated syslogs.

Body Interference and Interconnect Time on Opportunistic Body Sensor Networks

Tammara Massey (University of California, Los Angeles)

The impact of body interference on short range radios, such as 802.15.4, and its implications on capacity management and communication has not been adequately addressed. In this paper, we present a measurement study that isolates and quantifies the effect of body area interference on 802.15.4 radio communication. The connectivity model is combined with mobility data of people to create an algorithm that dynamically adapts to the environment.

Building Robust Intrusion Detection Systems for MANETs Using Cross-layer Designs

Geethapriya Thamilarasu (Univeristy at Buffalo)

In this work, we address the problem of security attacks and vulnerabilities in mobile ad hoc networks. We study the limitations of existing security solutions based on a layered protocol architecture. We introduce novel cross-layer interactions and develop intrusion detection systems (CIDS) to guarantee ad hoc network security. Using simulation results, we demonstrate that our proposed CIDS system enables multi-layer security for MANETs and detects intrusions in the network with improved detection accuracy.

Compatibility-Dependent Application Placement for Energy-Efficient Data Centers

Manal Hourri (Southern Methodist University)

Recently, it has been reported that datacenters are responsible for 1.2 to 2.0 percent of the electricity consumed in the United States. Our approach exploits prior knowledge of workload patterns of applications to achieve a power-aware allocation. We propose allocating applications on machines according to the incoming workload characteristics while 1) minimizing the system power consumption, 2) increasing utilization level of running machines, and 3) minimizing the number of running machines.

Computers Can Assist in Retrieving and Assessing New Information in the Medical Domain

Oana Frunza (University of Ottawa)

Systematic reviews are highly structured summaries of existing research in any given field and particularly in the medical domain were they are a fundamental tool for evidence-based medicine. The amount of information in medical publications repositories continues to increase tremendously. Systematic reviews help to parse this growing body of information in order to determine if an abstract/article is relevant to a topic of interest (e.g., cancer, obesity, drugs, treatments etc.).

Crafting Girls into Computing

Kady Rosier (Georgia Institute of Technology)

The Institute for Computing Education (ICE) at Georgia Tech is trying to increase the percentage of students, especially girls, that are interested in computing. We do this by running

weekend workshops with the Girl Scouts. In these, they explore different avenues of computing through fun and engaging softwares like PicoCricket and Lego Mindstorms. Our goal is for the girls to think, "Hey, computing can be creative and fun!"

Engendering ICT

Diane P. McCarthy (University of Otago /Christchurch Polytechnic Institute of Technology)
Through a mixed method approach and technofeminist poststructuralist framework, my Master of Arts (Education) thesis seeks to make sense of how women students take up, resist and/or subvert discourses in masculinized IT training programmes. Critiquing current policies and practices may open up transformative strategies in polytechnics and institutes of technology (ITPs), retaining women in ICT by blending feminist practice with the business case to build a better world.

Examination of Variance in Production of Task Operators Questions GOMS Ability for a Quick Semi-Automated Usability Assessment of Interfaces

Maria Vicente Bonto-Kane (North Carolina State University)
GOMS modeling techniques have been exemplary in automating usability evaluation of human-computer interfaces by relying on statistical means for keyboard operators and generating a measure of task complexity and duration. GOMS estimates, however, may be off and its assessment on usability limited. This research considers the need for examining the statistical variance in the production of keyboard operators and the need for better methods for normative standardization of GOMS operators.

HADES - Utilizing Artificial Death for Fault Tolerance

Megan Olsen (University of Massachusetts Amherst)
HADES is a multi-agent system whose agents acknowledge their citizenship to the system and monitor their environment. When an agent senses persistent malfunctioning agents in its neighborhood, it sends anonymous messages to entice them to self-kill. We develop protocols for sending and interpreting these self-kill messages to optimize the system's longevity. We contribute to AI by introducing protocols for system robustness via notions of active citizenship and programmed death.

HoverCross: Modeless Editing for Pen-Based Computing

Alice (Xuexin) Zhu (Harvey Mudd College)
A central problem in pen-based interfaces is how to transition smoothly between drawing and editing. Separating the two modes can be awkward and distracting, while modeless editing gestures are error-prone. We propose to use the hover space to perform selection by crossing over desired objects in the hover range, providing a simple and reliable method to edit without explicit mode changes. Our user studies indicate that HoverCross generally creates a more fluid transition between drawing and editing.

Impact Analysis of System and Network Attacks using Artificial Neural Networks and Attack Graphs

Anupama Biswas (Utah State University)
Impact Analysis of System/Network Attacks is one of the key areas in security that has not yet been explored extensively. I present the idea of how to predict the impact of a new attack since it is difficult to generalize such an attack while it is in progress. Artificial Neural Networks and Attack graphs have been incorporated to perform the mapping of the novel attack with the existing attacks.

Improving Verification Scalability through Automated Compositional Verification

Haiqiong Yao (University of South Florida)

Formal verification has emerged as a promising complement to simulation for functional verification providing almost exhaustive verification coverage. Its main problem is the state space explosion problem resulting in poor scalability. We develop a framework combining compositional verification and abstraction to address the challenge, and apply it to verify large scale concurrent designs successfully. We develop a novel technique to generate small yet accurate environments automatically to support compositional verification.

Modeling Global Green House Gas Emissions in Proportion to Continental Output

Anastasia Sagalovitch (Baruch College- CUNY)

This project aims to visually model carbon dioxide (CO₂) emissions in proportion to amount emitted per continent using POV-Ray, a ray tracing software. This technique was used in order to highlight the critical problem of climate change and the need to reduce green house gas emissions worldwide. GHG emissions data is an integral part of the debate on controlling climate change, thus representing data well is as important as measuring it accurately.

More than Paradoxes to Offer: Exploring Motivations to Attract Women to Computing

Jill Dimond (Georgia Institute of Technology)

We interviewed twelve women at Georgia Tech who are not studying computing and found half had pro-social goals for their careers. They also perceived people who worked in computing to not align with those goals. We showed pictures where technology helped people. Most were really interested in these pictures and given opportunity thought they would be interested in participating - they just never thought of computing as helping people.

Multicasting in Disconnected and Delay Tolerant Networks for Developing Countries

Grace Metri (Wayne State University)

Many around the world live below the poverty line. The only way to improve their life is by education. The best way to spread education is through the internet. Due to the geographic nature of many developing countries, it is difficult and expensive to have reliable networks. Therefore, we explored a way to multicast data to servers across developing countries while adapting current technology to the physical nature of their network.

Physically-Based Granular Dynamics

Tina Yee (University of Toronto)

Granular dynamics refers to the dynamics of a large set of small particles. Convincing simulation remains a challenging computational problem. Our approach begins with a particle-based method to model high velocity interactions. We then add dissipative forces to produce static properties of grains. With these static attributes, we try to characterize the grains and transition to a fluid-based model to reduce computational costs.

Private Searching for Nearest Neighbors

Yinian Qi (Purdue University)

We give efficient protocols for private k -nearest neighbor (k -NN) search, when data is distributed between parties who want to cooperatively compute the answers without revealing their private data. Our single-step k -NN search protocol is secure with linear computation and communication complexity. We also give the general multi-step k -NN search protocol for data with complex distance functions. Our protocols can also be used for k -NN classification and outlier detection.

Quality of Information-Aware Design and Management of Sensor Network

Sadaf Zahedi (University of California, Los Angeles)

Provided quality of information (QoI) by sensor networks to users is an important design goal. Our proposed modular analysis framework evaluates QoI of sensor network deployments. The

process is decomposed to steps of modeling the characteristics of sensor networks like faulty behaviors, analyzing QoI at sensor, cluster and network level, and exploring the trade-offs and optimized designs. For reliable designs, sensor network is managed at runtime to detect the faults in tiered fashion and take run-time actions.

Reactions to the Use of Wearable Recording Technology for Aiding People with Memory Impairments

Gabriela Marcu (University of California, Irvine)

SenseCam is a wearable recording device which captures pictures automatically, and was designed to help individuals with memory impairments. Secondary stakeholders' responses to imagined uses of SenseCam in situ enabled us to construct models about this recording technology grounded in real-life experiences. Our results indicate that self-presentation, control of data and its dissemination, and desire to help those in need all impact reactions to ubiquitous recording technologies like SenseCam.

Reasoning about Multisets with Cardinality Constraints

Ruzica Piskac (Ecole Polytechnique Federale de Lausanne)

Collections are ubiquitous in computer science and reasoning about them is very important in software analysis and verification. There are numerous applications in software analysis that involve reasoning about collections of objects. Cardinality constraints on such collections also arise in these scenarios. Multisets (bags) are introduced by abstracting the content of linked data structure with duplicate elements. We investigate the decidability and complexity of reasoning about multisets with cardinality constraints.

Rich Services: The Integration Piece of the SOA Puzzle

Vina Ermagan (University of California, San Diego)

A major challenge in the development of ultra large scale software intensive systems is the controlled integration of multiple subsystems, such that the resulting system fulfills a wide spectrum of integration requirements, such as authentication, security and governance. To address this challenge, we introduce the notion of Rich Service, an extension of the standard service notion, based on an architectural pattern that allows hierarchical decomposition of system architecture according to separate concerns.

Scaling Network Games Using Collaborative P2P Overlay

Neha Singh (IIT Bombay)

Networked Virtual Environments (NVEs) are computer generated, synthetic worlds that allow simultaneous interactions of multiple participants. Online games representing the most common class of NVEs, are becoming the next frontier for social interaction between humans. A very important aspect in creating rich playing experience is creation of dynamic and complex artificial intelligence (AI) of non-player characters (NPCs) which is computationally expensive. We propose the architecture and techniques to scale computation intensive NVEs using the collaborative peer-to-peer overlay.

Secure Data Communications using Cryptography, Steganography and Data Splitting

Nighat Mir (IIUI)

A Sender sends a plain text message to the Encryption Phase (AES), the Splitter Algorithm splits the message into two halves. Two cover images are taken by the Stego-Encoder for hiding data. Cover image is transformed by using transformations. These two cover images are converted into stago images by hiding respective message into their coefficients. And a reverse process is applied at the receiver end to get back the original message.

2D Shape Decomposition Based on Combined Boundary-Skeleton Features

Jingting Zeng (Temple University)

This project is to implement 2D shape decomposition. Motivated by recent studies in visual human perception discussing the importance of certain shape boundary features as well as features of the shape area, we combine properties of skeleton and boundary to implement an approach leading to shape decomposition. Experiments prove the robustness of our combined approach compared to other decomposition methods.

Tracking in a Spaghetti Bowl: Monitoring Transactions Using Footprints

Animashree Anandkumar (Cornell University)

The problem of tracking end-to-end service-level transactions in the absence of instrumentation support is considered. The transactions progress through a state-transition model and generate time-stamped footprints at each model state. The goal is to track individual transactions using footprints they generate when these footprints may not contain any tokens uniquely identifying the transaction instance that generated them. For a semi-Markov process model, the maximum likelihood tracking rule is explored.

Wednesday, October 1, 2008

7:00 – 9:00 pm

Regular Poster Session

A Federated Feature for Query-by-Content Audio Retrieval

Yi Yu (Nara Women's University)

Audio feature extraction plays an important role in query-by-content audio retrieval. In this work we propose a weighting scheme using regression on a database to summarize long audio feature sequences and generate a concise and semantic feature called Federated Feature (FF). Two similarity searching schemes are adopted to test the proposed approach of audio feature summarization. The experimental results demonstrate that our weighting scheme is useful for music content retrieval.

A Goal Oriented Approach for Modeling and Analyzing Security Trade-Offs

Golnaz Elahi (University of Toronto)

In designing software systems, security is only one design objective among many. It may compete with or complement other objectives such as privacy and usability. Often, security mechanisms are adopted without explicit recognition of competing design objectives and their origins in stakeholder interests. We examine how conceptual modeling techniques provide explicit and systematic support for analyzing security trade-offs. We proposed an extension to the i^ framework for security trade-off analysis.*

A Platform for Developing and Executing Scientific Workflows in Distributed Environments

Corina Stratan (Politehnica University of Bucharest)

In designing software systems, security is only one design objective among many. It may compete with or complement other objectives such as privacy and usability. Often, security mechanisms are adopted without explicit recognition of competing design objectives and their origins in stakeholder interests. We examine how conceptual modeling techniques provide explicit and systematic support for analyzing security trade-offs. We proposed an extension to the i^ framework for security trade-off analysis.*

A Privacy-Preserving Approach for Spam Filtering Evaluation

Mona Mojdeh (University of Waterloo)

These privacy considerations are often at odds with the conduct of large-scale realistic spam filtering efforts. We address the problem of spam filter evaluation on a realistic email set without the need to sacrifice the privacy at any level. Using our framework, researchers will be able to test different spam filters on real email boxes, for which they will receive the result file (containing no private data) in email.

Accelerating Quantum Monte Carlo Applications on Advanced Computing Platforms

Akila Gothandaraman (University of Tennessee, Knoxville)

We are currently exploring the use of emerging computing platforms in computational chemistry. We present the results when a Quantum Monte Carlo application, which is used to determine the ground-state properties of atomic or molecular clusters, is ported on high performance reconfigurable computing systems. We are also porting our application to platforms such as graphics processing units and multi-core processors and evaluating the performance of our application on these platforms.

Accelerating the Drug Discovery Process with Blue Gene through Massively Parallel Computation and Data Integration

Amanda Peters (IBM)

The pre-clinical phases of drug development consist of the assessment of compound libraries by screening and then by analysis of both biological properties and commercial viability. Developing a solution to accelerate identification and development of drug candidates based on both binding affinities and disease-related receptor knowledge is a key goal for this field. This work focuses on the methods of leveraging Blue Gene for the integration of massively parallel computation and textual annotation for virtual screening.

Accessibility Assessment Via Workspace Estimation

Jing Yang (York University)

The process of evaluating a built environment for accessibility is known as "accessibility assessment". Determining accessibility is closely related to the problem of determining possible motions of a specific kinematic structure. Here, the accessibility assessment process is reformulated as a motion planning problem. Rather than treating each of the degrees of freedom (DOFs) 'equally' while planning, we explore a hierarchical characteristic of all the DOFs when constructing the roadmap.

An Energy-aware Relay Selection Scheme for ALLIANCES

Xinhua Yang (Colorado School of Mines)

ALLIANCES is a newly proposed wireless MAC protocol, which exploits the cooperation of source nodes and relay nodes to resolve collisions and further improve throughput. We propose an energy-conserving model, and an Energy-aware Relay Selection scheme (ERS), which maintains the benefits of Location Relay Selection scheme (LRS), but more evenly distributes the energy throughout the network. Simulation results show that the energy-conserving model can save up to 80% energy with the same delay.

An eNotebook Prototype for Students and their Notetaking Tasks

Melissa Bubnash (The University of Montana)

Traditional approaches to managing, storing, and editing electronic data need re-evaluation for today's college student. This research focuses on the development of a prototype application that allows users to gather and organize files of multiple types, browse the Web, and take notes within a single, seamless user interface. Our goal is to provide students with a better set of tools

<p><i>and centralized data repository for their evolving Information Assimilation tasks.</i></p>
<p>Antler: A Multi-Tiered Approach to Automated Wireless Network Management Ramya Raghavendra (UCSB) <i>Troubleshooting problems related to wireless access in these networks requires a comprehensive set of metrics and monitoring data. Current solutions gather large amounts of data and require significant bandwidth and processing to offload and analyze this management traffic, consequently not scalable or real-time. We propose a multi-tiered approach to wireless network monitoring that dynamically controls the granularity of data collection based on network activity. Our approach can achieve significant bandwidth savings and enable real-time automated management of wireless networks. Our initial analysis using traces from a large WLAN shows significant reduction in amount of data collected to diagnose wireless problems.</i></p>
<p>BayView Fab Displays: A Collaborative Project for an Automated Manufacturing Facility Kathleen M. Milhaven (IBM) <i>The Fab Display or "BayView" project was designed to deliver relevant content and production metrics to computer monitors over a network of computer displays at predetermined locations within the IBM East Fishkill 300mm Manufacturing areas. The focus of this project is on three key areas: 1. Collaborative Customization 2. The "Pushing" of Data, rather than the "Pulling" of Data 3. Presenting Only Critical Data</i></p>
<p>BIOCRUISE: An Interactive Graphical User Interface (GUI) to Modeller9v1 for Protein Homology Modeling Zartasha Mustansar (Comsats University) <i>BioCruise (BC), an integrated application designed to provide homology modeling under a uniform & user-friendly graphical interface to Modeller library serves to combine the most frequent modeling steps in a semi-automatic, interactive way. BC provides an integrated GUI to the different phases in Homology Modeling such as: protein alignment, modeling, mutation & evaluation. BC is an open-source, cross-platform & extensible framework and allows developers to integrate additional third-party programs.</i></p>
<p>Bringing stories to the world: The technical challenges of CEOHP Vicki L. Almstrum (The University of Texas at Austin) <i>This poster explores technical challenges encountered during the first few years of the Computing Educators Oral History Project (CEOHP). Among the challenges are audio and visual processing, organization, web technology, and ethical/legal issues. We discuss these technical challenges in the context of the processes involved, including data collection of audio interviews and processing to create a transcript and identifying pullquotes, and uses of the processed and approved interviews.</i></p>
<p>Building a Better World by Growing the Pipeline: The Influence of Collaborative Learning Cynthia Lester (Tuskegee University) <i>New data show that students' interest in computer science (CS) is declining. While there are many suggested reasons for the decline, some educators suggest that the problem is with the way that CS is being introduced to a "technically savvy generation". In an effort to increase interest in the major, especially among female students, a technique using collaborative learning was infused into an introductory programming course.</i></p>
<p>Changes in Girls' Attitudes to Information Technology: A Focus Group Study Sandra E. Downes (Murdoch University) <i>There has been a shift in the use of technology by females. The computer is no longer a</i></p>

mathematical device that is only of interest to males. Females are using computers for communication and design and claiming this technology as their own. Using focus groups, this study aimed to investigate this change in perception of IT and whether this could be translated into more females considering a career in IT.

Classified Price Policy and Adaptive Timing for Digital Rights Management

Lingyan Wang (Auburn University)

The popularity of digitalized products and service attracts illegal copying and consumption. Digital Rights Management (DRM), merges to fight against these piracy activities. In this paper, we propose an innovative price policy and timing method as a component of DRM. Particularly, we classify the consumption of a digital product into several levels, each of which requires different price. Then, the expiration of the service is adaptively calculated to prevent illegal use.

Compiler Directed Hierarchical Hardware-Software Mapping for Algorithm-Architecture Codesign

Yuanrui Zhang (Penn State University)

Algorithm-architecture co-exploration and hardware-software codesign have been used to accelerate domain specific applications. We combine these two into a single framework to achieve application performance improvement. The proposed compiler directed hierarchical mapping employs an intermediate code representation to capture the program structure, and applies a branch and bound search to find the optimal solution using fast cost estimation models. Experimental results demonstrate that our approach is efficient in finding the optimal mappings for parallel applications.

Complexities and Importance of Successful Cabling Management from Start to Finish

Rebecca J Vossberg (IBM), Nadia Anguiano-Wehde (IBM)

Cable management is crucial to rack system design and data center layout. It must take into account airflow, cable density, signal integrity, serviceability, and aesthetics in order to produce a successful product. This poster exhibits various hardware, methodologies, and best practices of cable management for high-density racks, as well as Do and Don'ts of cabling for various scenarios.

Computer Science Recruitment for the 21st Century

Jasmine L Glaese (Missouri University of Science and Technology)

This project is creating software to help reverse the trend of decreasing interest in Computer Science (CS) among students, particularly females. Our software is aimed at elementary school students, with an emphasis on female appeal, showcasing the social relevancy of CS through a series of highly visual games & puzzles, illustrating the careers of CS alumni. Survey results show the effectiveness of our software in increasing the students interest in CS.

Concurrency Management in Project Managed Environments

Johnissia R Stevenson (IBM/University of Arizona)

Concurrency management includes strategy, people/relationships, processes/operations, tools, projects, management, and technology. It integrates and produces results that meet both business and customer needs and expectations. All process and communication channels must interlock to solve problems and improve business. This paper highlights an array of topics on concurrent processes by looking at multiple factors to understand technical project delivery challenges and identify solutions for overall concurrent improvement.

Coping Strategies for CS Women

Valerie Morganson (Old Dominion University)

Coping is a lever for increasing the success and retention of CS women. This poster examines a large sample of CS undergraduates to identify effective coping strategies. Findings indicate that women are inclined to rely upon social resources to cope. Problem-focused coping is related to lower stress, and greater commitment and satisfaction with a majority of men, but not for women. We provide research-based suggestions for CS students, mentors and teachers.

Could We Improve the Accuracy of Neural Network Derived Optical Coefficients with Boosting?

Jinyan Guan (Winona State University)

To improve the learning performance of Artificial Neural Network on the retrieval of water optical properties from satellite images, we apply boosting to the training samples. The boosting algorithm allows the training process to focus on the harder cases of the training samples. The result shows the boosting can reduce the error rate of absorption coefficient from 9% to 7%.

Crisis Web Portal: Making Sense of On-line Disaster Activity

Amanda Hughes (University of Colorado at Boulder)

Social networking and peer communication on the Internet is generating information that could be used in disaster response and relief efforts. However, the large size and distributed nature of these activities makes it tedious and time consuming to gather and extract. We propose a Crisis Web Portal that automates the process of gathering information sharing activity on the Internet, processing it, and presenting it for use during times of disaster.

Design Strategy for Knowledge Base Formation to Automate a Course Map Creation

Susan Lukose (University of Mississippi)

As popularity of e-learning has increased, the task of assisting an author in creating an online course map or a student in customizing a learning path has a lot of potential. The goal of this research is to create a knowledge base for a decision support system that could guide an author or a student in their respective tasks. We propose to achieve this by automatically creating a ranked ontology from domain specific glossaries.

Developing Student Courses for Wireless Sensor Networks using TinyOS 2.x

Leena Kowser Ganguli (University of Technology, Sydney)

The project, "Wireless Sensor Networks (WSN)" focuses on researching and evaluating methodologies for teaching students how to program on small Networked Sensor Devices known as Motes using TinyOS 2.x. Due to the specialized nature of this topic, this information is not widespread. However, WSNs are attracting attention by researchers and commercial entities who foresee the importance of these networks in such areas as health monitoring for the elderly and infirm.

Digging in the Uncertainty: Probabilistic Ranking Queries on Data with Uncertain Linkage

Ming Hua (Simon Fraser University)

Uncertain data is inherent in a few important applications such as environmental surveillance and mobile object tracking. On the other hand, ranking queries are often natural and useful in data analysis. We study probabilistic ranking queries on uncertain data and present efficient query answering algorithms. An extensive empirical study using both real and synthetic data sets are reported.

Digital Library and Corpus of the Collected Works of Ivan Franko

Oresta Tymchyshyn (Lviv Politechnic University)

The poster is devoted to creation of digital library (DL) and Corpus of 50-volume Collected

Works of prominent Ukrainian writer Ivan Franko. The technology of preparation of digital publications in both DjVu and PDF formats and principles of presentation of text corpus in the XCES format are described. The method for detecting OCR errors on the basis of Levenshtein algorithm, hidden Markov model and frequency dictionaries is proposed.

Discovering RNA motifs using Generative Models

Hilal Kosucu (University of Toronto)

RNA-binding proteins (RBP) regulate gene expression by binding to target RNAs and thus affecting their translation. Our aim is to characterize the sequence and structure preferences of RBPs using motif models that are fit to semi-quantitative microarray-based measurements of RBP binding affinity to particular RNA sequences. In the present study, we can correctly identify the sequential and structural features of several motifs that are recognized by the RBP VTSl.

ECG based Biometrics

Anupriya Mittal (MIT, Manipal, India)

The electrocardiogram (ECG also called EKG) trace expresses cardiac features that are unique to an individual. The ECG varies from person to person. In fact this is the only biometric token which doesn't exist if the owner is not alive. For ECG processing data filters were designed. Fiducial points were identified on the filtered data and extracted digitally for each heartbeat. From the fiducial points, stable features were computed that characterize the uniqueness of an individual.

Efficient Online Co-Allocation Scheduling Algorithm for Large-Scale Distributed Environments DRAFT

Claris Castillo (North Carolina State University/IBM)

Complex high performance distributed applications frequently require the co-allocation of multiple resources. In principle, this can be achieved by allocating resources sequentially. However, such a solution can be computationally expensive for time-sensitive applications. We present an efficient online algorithm for co-allocating resources that also provides support for advance reservations. We perform a comparative analysis of our online algorithm against conventional batch schedulers. Our findings indicate that our algorithm may achieve higher utilization while providing smaller delays and better QoS guarantees; and, without adding much complexity. Furthermore, we show that the algorithm proposed scales to systems with large number of resources and heavy workloads.

Engaging Students in Software Development Course Projects

Jacqueline Hundley (Auburn University)

This work seeks to contribute to software development education by motivating the use of engaging in-class and laboratory assignments. Ideally, these assignments should involve considerable student buy-in and should also evolve throughout the course to mimic real-world software development. Prior research is discussed, as well as specific examples from two introductory programming classes. The ultimately contribution is a convincing argument to spend the extra effort to design better student projects.

EXAM - A Comprehensive Environment for Access Control Policy Analysis and Management

Prathima Rao (Purdue University)

As distributed collaborative applications are adopting policy-based solutions for security tasks, management and consolidation of a large number of policies is becoming a crucial component of such solutions. We present EXAM, a comprehensive environment for access control policy

analysis and management, which can be used to perform various functions such as policy property analyses, policy similarity analysis and integration. Our work focuses on analysis of policies written in XACML.

Exposing the Cool Side of Building Technology to the Next Generation

Deirdre Athaide (IBM), Jennifer Schachter (IBM)

From Webkins to Pleo to YouTube, the list of incredibly cool, pop culture applications of technology is never-ending. And yet we are faced with the very certain reality that the number of entrants into computer science and other technology related disciplines is declining, particularly for women. Come and join us as we discuss techniques and technologies that can be used to engage middle school aged girls in computer science.

Feedback Controlled Load Balancing for Hybrid Peer-to-Peer Systems

Purvi Shah (University of Houston)

In our prior work we proposed a content delivery network distributing software packages in a large organization. Our design combined the concept of volunteering with the P2P technology. In this work we present a novel load balancing mechanism that considers both the synchronization and the customer-generated workload of the volunteers. Our results indicate that the feedback information currently available at the server/tracker of the P2P system offers enough information to ensure fair load distribution among the peers.

For Better or For Worse: Is What We Are Doing Right?

Jennifer Wong (University of Victoria)

Many initiatives have risen in response to an enrolment decrease in Computer Science. However, many questions and challenges still remain unresolved. Initiatives have been designing and deploying activities and pedagogy, but how do we know we are actually recruiting and retaining instead of dejecting students? This poster will address various issues and attempt to answer some of these issues and challenges.

Formal Computational Models Give Guidance to Initial Design Efforts for Usability

Maria Vicente Bonto-Kane (North Carolina State University)

Decades of work in HCI has looked to using live user testing and GOMS techniques to guide usability design. But with these methods, guidance came after the fact. This research shows how formal computational models can give systematic guidance to initial design. Using formal methods, the probabilistic occurrence of task operators were mapped and optimum placement of frequently accessed icon operators done to ensure design of a more facilitative interface.

GATOR and SWAMP: GPU Computing for Sequence Alignment

Shannon I Steinfadt (Kent State University)

In the search to understand the function of DNA and RNA, a sequence is aligned against one or more other sequences. Smith-Waterman is an exact local sequence alignment algorithm. An existing associative parallel Smith-Waterman algorithm known as SWAMP is in development for two NVIDIA Tesla boards that are general-purpose graphical processing units (GPGPUs). This poster highlights the GPGPU version of SWAMP, or Genetic Alignment on sStream processors (GATOR).

Hardware Optimization and Virtualization in Large Datacenters

Clea Zolotow (Regis University/IBM)

Server hardware spending has remained consistent in the last few years. However, power and cooling costs have increased dramatically. This poster shows an overview of p, x, and zSeries virtualization and architecture and provides a high-level methodology for both physical and virtual migration. This allows full utilization of hardware, decreased number of frames, and

corresponding power and cooling savings. Case studies and lessons learned are presented.

Helping Bring Technology, Training, and Passion to Health Care in Zambia

Lynn Langit (Microsoft), Chrys Thorsen (TBH Consulting), Esther Schorr (Microsoft)

This poster is based on volunteer work done by technical professionals for a non-profit, healthcare project in Africa. The specific project that the group works on will be used as context for a broader discussion on the ‘why and how’ of matching particular project needs to technical volunteer skills from an international group.

Helping the New Kid on the Block: Recommending Groups in Social Networks

Isabelle Stanton (University of Virginia)

Modern social networks have millions of groups; far more than a user can reasonably be expected to peruse. To deal with this problem we develop a recommendation algorithm for groups in social networks. We base our algorithm on explicitly discovered communities. The primary technical achievement is finding communities in massive networks. Experiments show that exploiting the structure of the network with no text significantly improves the quality of the recommendations.

HospitalLine – A Spoken Dialogue System for Hospitals

Sunayana Sitaram (NIT Surat)

Hospitals in India are staffed with many specialist doctors, each with his/her own schedule for visiting the hospital. Boards at the hospital carry information about their availability but getting information is difficult because they are outdated and use technical terms. Telephone-based enquiry systems are an attractive solution. HospitalLine is a spoken dialogue system, created using the RavenClaw/Olympus framework, which a user can call the hospital and book an appointment.

How to Combat Plagiarism in Academia (and How Not To)

Jessica Dickinson Goodman (Carnegie Mellon University)

Everyone has heard about students cheating as a “Rip, Mix, Burn” approach to homework. Professors and Administrators struggle to preserve the reputation of their institutions as well as their students' Intellectual Property. How does one combat plagiarism with so many sources for an unscrupulous student to draw from? This poster will evaluate the current state of both technical and non-technical solutions to academic plagiarism and produce a conclusion on the overall costs and benefits of several methods.

Improving the Performance of Electronic Communities by Sharing Reputation Ratings of Users

Georgia Kastidou (University of Waterloo)

The utility and popularity of self-interested electronic communities in which the provided services are mainly offered by participants are sometimes compromised by the existence of malicious users and free riders. In order to overcome this problem we are investigating ways to motivate agents to increase their contributions by providing incentives to communities to exchange information regarding their agents and to make more sophisticated decisions about which agents to accept.

Incorporating Semantic Information into Text Segmentation

Meghana U. Marathe (University of Toronto)

Text segmentation involves the division of a text into cohesive units. Many state-of-the-art segmentation techniques use simple term repetition to measure lexical cohesion. This is mainly due to a lack of reliable semantic information sources. Lexical chains join semantically-related words in a text. Their presence, absence and number help indicate segment breakpoints.

Mohammad and Hirst (2006) proposed a framework for measuring concept distance, which we use for chaining. Such chains should outperform term-repetition methods at text segmentation.

Instructional Materials for Engaging Middle School Students in Computing Using Animation

Iris Jomellee Beltran (Lamar University), Valerie Juarez (Lamar University)

It is recognized that there is an increasing demand for computer scientists in today's market, but university enrollments for computing degrees have been declining in recent years. Studies have shown that students' interests are developed by high school, so outreach should target middle school students. This poster presents instructional materials developed to teach concepts of sequence, selection, and repetition in animation using Scratch, a program developed by MIT.

Intelligent Adaptive Scaffolds for Expert Users

Alana Cordick (University of Guelph)

Experts may use a new application due to workplace or higher education requirements. The support required to learn the new software is dependent on the user's demonstrated expertise. Adaptive scaffolds can help these experts to learn the software at a faster rate, using real tasks, increasing productiveness. The adaptive scaffolds allow for the tailoring of support to the expert's need based on the user model.

Learning Styles: How Do They Fluctuate?

Cheryl Swanier (Auburn University), Juan Gilbert (Auburn University)

This article discusses learning styles and how learning styles can vary from lesson to lesson within a specific course. The purpose of this research was to gain insight and hopefully improve teaching methods to facilitate student achievement and retention in the Science, Technology, Engineering, and Mathematics discipline. Through this research, professors will probably be able to answer questions as to why certain students do not perform well on various assessments.

Mining Influential Customers from Online Social Network for Targeted Marketing

Yu Zhang (Zhejiang University)

This paper proposes a method for identifying influential users, based on mining of online social networks. We represent social networks as a directed graph, which incorporates "Web of Trust" and "Review-Rate Network" on Epinions, and moreover, has a weight associated with each edge to represent the influence of one user on another. We then test several algorithms, including general greedy, hill-climbing and centrality-based algorithms, on the real-world social network to identify influential users.

Modeling Information Roles for Understanding Stock Market Dynamics

Munmun De Choudhury (Arizona State University)

We have developed a framework to determine information roles of people in blogosphere and how their communication is useful to understand external events. This can improvise search algorithms, help determine opinions and understand community evolution. We use a technology-blog Engadget and determine information roles of bloggers which are associated with stock movements of companies. Favorable events are characterized by presence of chatter; while unfavorable events reckon substantial crowd as aftermath.

Multitier Multiscale Sensing: A New Paradigm for Actuated Sensing

Diane M. Budzik (University of California, Los Angeles)

Multitier Multiscale Sensing is a new paradigm for actuated sensing for efficiently sampling dynamic spatiotemporal phenomena with high fidelity. This approach introduces a hierarchy of

sensors according to sampling fidelity, spatial coverage, and mobility characteristics. The application of solar light radiation illustrates a two-tier implementation of multiscale sensing. Experiments performed in simulation and on a physical robotic system show that multitier multiscale sensing is suitable for sampling dynamic spatiotemporal phenomena.

Non-Blocking Array-Based Algorithms for Stack and Queue

Niloufar Shafiei (York University)

We present new non-blocking array-based distributed implementations for stack and queue. We give detailed proofs of correctness and amortized time analyses for the algorithms. We use the Spin model checker to verify the correctness of our algorithms. Our second stack and queue algorithms are the first ones that use bounded counter values and our stack implementations are the first practical array-based stack implementations. We compare our stack and queue implementations to the popular proposed implementations experimentally.

On Monitoring the Top-k Unsafe Places

Ling Hu (Northeastern University)

In a city, protecting units, like police cars, move around and protect places such as banks and residential buildings. Different places may be under different protection levels by police units. We study the Continuous Top-k Unsafe Places query, which continuously monitors the k least safe places. It is a novel addition to the family of continuous location-based queries. This paper proposes two solutions to this new query and experiments are conducted to evaluate the proposed solutions.

Onto'CoPE: Ontology for Communities of Practice of E-learning

Akila Sarirete (Effat College)

In the present work we focus on the problem of capitalization of techno-pedagogic knowledge, both tacit and explicit in the domain of e-learning. We attempt to solve this problem within the framework of Communities of Practice of E-learning. An ontology will be proposed to model the members of the CoPE, their roles, the learning situations, and annotating the CoPE's knowledge resources of activities and interactions and the environment of the CoPE.

Protein Representation for Efficient Comparison of Surface Properties

Sael Lee (Purdue University)

Protein surface properties such as shape and physico-chemical properties convey information important in characterizing individual proteins as well as in measuring the affinity of interaction or binding of molecules. Thus, efficient representation and analysis of protein surface properties is needed. We proposed the uses of (global/local) 3-demsional Zernike descriptor to describe the protein surface properties for its compactness and rotation invariance as well as its accuracy.

Representing Process Variation

Borislava I. Simidchieva (University of Massachusetts Amherst)

Processes involving the coordination of human and computer agents to achieve a goal are ubiquitous. Developing and analyzing process definitions can help to improve real-world processes. However, defining real-world processes that exhibit variations is hard. Variations can be modeled with several related definitions, or process variants, which together comprise a family. We introduce an approach for modeling process families using the Little-JIL process definition language, and present a case study.

Scholarship Day

Emily G Raymond (Purdue University)

Scholarship Day is a program of Purdue University's Computer Science department. The

program helps potential students and parents decide if computer science is the best field for them and familiarizes the top scholarship applicants with the Computer Science department. Therefore, the prospective students and their parents get to interact with current students, faculty, and advisors. Scholarship Day is a unique experience to recruit and retain women to computer science.

Shape Correspondence Using Particle Filter

Shusha Li (Temple University)

The project is to analyze similarities in two shapes. The crucial step is to find the correspondences between shape features in accordance with human perception. The project works on 2-dimensional shapes represented by a polygonal boundary. It utilizes a multiple hypotheses technique, "Particle Filters" (PF). Based on certain world knowledge, PF build correct correspondences by evaluating different hypotheses of most reasonable solutions.

Stochastic Analysis of Reversible Self-Assembly

Urmi Majumder (Duke University)

Since Winfree demonstrated that his abstract irreversible self-assembly model is capable of universal computation, self-assembly has been recognized as a promising route towards nano-scale computation. In reality, however, self-assembly is not irreversible, requiring us to develop a reversible model that allows tile dissociation. However, such analysis exists only for one-dimensional assemblies. We extend this work to higher dimensions and describe how self-assembly can be modeled as rapidly mixing Markov Chains.

Study of Pitch Shifts for Query-by-Example Music Retrieval

Yi Yu (Nara Women's University)

In this poster, a wide set of features covering both spectral and temporal properties are studied. The analysis shows Pitch shift has much less effect on cepstrum than on STFT. Short-Time Fourier Transform (STFT), Mel-Frequency Cepstral Coefficient (MFCC) and two new features based on cepstrum are compared with respect to different pitch shifts. Simulation results verify that retrieval ratio can be improved by removing pitch shift and time variant energy.

Subsumption Architecture and Experiment on team based AI

Rajitha Rani Satharla (University of Memphis)

Subsumption architecture for implementation of game AI breaks the system into layers of activities each of which can be designed and debugged independently. Activities are much simpler processes to handle when compared to the overall system they fit into. Designed game AI handles the decision taking process of Bot of first person shooter game. Decisions involve actions such as taking cover, aiming searching for enemies, and team based tactics.

The Correction of GAMER for Multiple Geocasts

Nur Aini Rakhmawati (National Taiwan University of Science and Technology)

Normally, there is not only one source node sending packets to one geocast region in real mobile Ad Hoc environments. We implements GAMER protocol in which there are four source nodes and four different geocast regions. In order to make GAMER feasible for multiple geocasts, we have made some corrections this protocol. Our simulation result shows that the GAMER correction could perform well in multiple geocast regions while its delivery ratio has dropped to nearly 50%.

The Impact of Web Page Usability Guideline Implementation on Aesthetic and E-Retailer Evaluations

Anshu Agarwal (Salesforce.com/Cornell University)

This research examined the impact of front-end usability guideline implementations on web

page aesthetics and e-retailer perceptions. A guidelines framework was developed from an in-depth review of the literature. Four design factors (background color, white space, thumbnail image location, and thumbnail image size) were selected and varied using this framework. Sixteen web page prototypes were developed and assessed through use of an online survey. Results provided evidence that subtle design manipulations had significant effects on consumer perceptions.

The Wind of Flocks for Clustering and Data Visualization

Esin Saka (University of Louisville)

The way birds fly is a source of inspiration for challenging problems such as data visualization and clustering. This project presents a bio-inspired algorithm that uses the metaphor of flocks of agents for data clustering and visualization. Our approach makes improvements to overcome some limitations of an existing flock clustering algorithm, known as FClust, and decreases the complexity from quadratic to linear by hybridization with the classical K-means clustering algorithm. Applications to real-life problems are also presented.

Toward Secured Folksonomies

Maryam Ramezani (Depaul University)

Social tagging systems provide an open platform for users to share and annotate their resources such as photos and URLs. Due to their open nature, however, these systems present a security problem. Malicious users may try to distort the system's behavior by inserting false user profiles. This poster addresses the problem of security and robustness of social tagging systems. We outline a framework to model the navigation of a tagging system. Using our framework we classify attack models and identify different kinds of potential attacks to a social tagging system.

URSA: Understanding User Reviewing Patterns

Gayatree Ganu (Rutgers, The State University of New Jersey)

Websites commonly allow users to input reviews on various topics. These are used when customers buy products and businesses track user feedback. Most reviews are in a free-text format, which is difficult to automatically analyze and aggregate. The User Review Structure Analysis (URSA) project proposes tools to better access and search text-based reviews, augmenting them with structural information, hence improving simple searches and similarity searches in a social network setting.

Using Parallel Computing to Search for High Rank Elliptic Curves

Shweta Gupte (Purdue University)

An elliptic curve is a certain type of cubic polynomial equation. The "rank" of such a curve is a measure of the number of rational points. This project seeks to find curves with "large" rank by sieving through hundreds of millions of examples. The mathematical theory demands, for each example, one search for points on thousands of related quartic curves. For the computing application we use a high performance computing cluster and distribute the search load.

Using Your Brain for Human-Computer Interaction

Erin Treacy Solovey (Tufts)

To increase the bandwidth from humans to computers, we are investigating methods for sensing signals that users naturally give off while using a computer. We then use this data to augment the explicit input that the user provides through standard devices. Using a relatively new brain imaging tool, we can detect signals within the brain that indicate various cognitive states and build interfaces that adapt carefully and appropriately to changes in the user's cognitive state.

Variations of Strassen's Matrix Multiplication Algorithms

Sarah M. Loos (Indiana University)

*The quadrant additions in the classical $O(n^{\lg 7})$, Strassen matrix multiplication algorithms are not ideal for preserving boundaries in rectangular multiplications. Adding the northwest quadrant, which is the only necessarily non-empty quadrant, creates dense sums that, as factors, make more work for six of the seven recursive multiplications.
A very simple modification of the traditional algorithms, however, has only three recursions on factors built from that dense northwest block. Experimental results show how the algorithms accelerate by annihilating the other four recursive products, since they are far more likely to have zero factors.*

Web Search From a Bus

Aruna Balasubramanian (University of Massachusetts, Amherst)

Intermittent connectivity to wireless Internet access points (APs) from vehicles is commonplace today, but it is inadequate for popular interactive applications such as Web search and browsing. Our work is driven by the questions: How can web search be adapted to tolerate disruptions in connectivity from vehicles? We present Thedu, an architecture that enables interactive Web applications from vehicles. The key idea is to use aggressive prefetching to transform an interactive application into a one-shot request/response process.

Wikipedia as an Ontology for Describing Documents

Zareen S Syed (University of Maryland Baltimore County)

We have investigated the use of Wikipedia as a topic ontology for identifying topics and concepts associated with a set of documents. We have proposed different methods to predict the concepts common to a set of documents. Our experiments show that the Wikipedia category graph can be used to predict generalized concepts, whereas the article links graph helps by predicting specific concepts.

Workplace Culture that Hinders and Assists the Career Development of Women in Information Technology

Rose Mary Wentling (University of Illinois)

This study examined the roles that workplace culture plays in the career development of women in IT. The IT culture has been described as largely white, male dominated, anti-social, individualistic, and competitive. Although these workplace culture characteristics were supported by this study, it was the collaborative and teamwork oriented aspect of their workplace environment and building close relationships with colleagues that benefited the study participants the most in their career development.

ZigBee Enabled Device Location through Trilateration

Kelly A Torkelson (Winona State University)

In wireless networks, it's beneficial to be able to determine the position of a node using other nodes' locations. This has been done before, but not yet for ZigBee. We will show how we can estimate the location of a node in a ZigBee network using received signal strengths. The methodology we will use is trilateration, which uses three devices to estimate the position in a two dimensional plane.

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