

MOBIHOC 2005

**The Sixth ACM International Symposium on
Mobile Ad Hoc Networking and Computing**



**THOMAS M. SIEBEL CENTER
201 N. Goodwin, Urbana, IL 61801**

**COORDINATED SCIENCE LABORATORY
1308 West Main Street, Urbana, IL 61801**

**UNIVERSITY OF ILLINOIS
URBANA-CHAMPAIGN, ILLINOIS**

Wednesday, May 25, 2005 - Saturday, May 28, 2005

PROGRAM

**General Chair
P.R. Kumar
UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN**



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Wednesday, May 25, 2005 (Morning Session)

Registration 7:15am (Lobby of Siebel Center)

Keynote Talk

8:30am — 10am (1404 Siebel Center)

Toward the Sensor Network Macroscope

David E. Culler (*University of California, Berkeley, USA*)

Break: 10:00am-10:30am (Lobby of Siebel Center)

Session 1A: Clustering 1

Session Chair: Marwan Krunz (*University of Arizona, USA*)

10:30am-12:00pm (2405 Siebel Center)

Distributed Low-Cost Backbone Formation for Wireless Ad Hoc Networks

Yu Wang (*University of North Carolina at Charlotte, USA*) and

Xiang-Yang Li (*Illinois Institute of Technology, USA*)

On the Node-Scheduling Approach of Topology Control in Ad Hoc Networks

Budhaditya Deb and Badri Nath

(*Rutgers University, USA*)

On Maximizing the Lifetime of Distributed Information in Ad Hoc Networks with Individual Constraints

Cedric Westphal (*Nokia Research Center, USA*)

Session 1B: Security

Session Chair: Li Li (*Bell Labs, USA*)

10:30am-12:00pm (1404 Siebel Center)

Toward Resilient Security in Wireless Sensor Networks

Hao Yang (*University of California, Los Angeles, USA*),

Fan Ye (*IBM T.J. Watson, USA*),

Yuan Yuan (*University of Maryland, College Park, USA*),

Songwu Lu (*University of California at Los Angeles, USA*), and

William Arbaugh (*University of Maryland, USA*)

The Feasibility of Launching and Detecting Jamming Attacks in Wireless Networks

Wenyuan Xu (*Rutgers University, USA*),

Wade Trappe (*WINLAB, Rutgers University, USA*),

Yanyong Zhang, and Timothy Wood (*Rutgers University, USA*)

An Efficient Scheme for Authenticating Public Keys in Sensor Networks

Wenliang Du, Ronghua Wang (*Syracuse University, USA*), and

Peng Ning (*North Carolina State University, USA*)

Lunch: 12:00pm-2:00pm

Wednesday, May 25, 2005 (Afternoon Session)

Session 2A: Topology Control & Mobility

Session Chair: Xiang-Yang Li (Illinois Institute of Technology, USA)

2:00pm-3:30pm (1404 Siebel Center)

Interference-Aware Topology Control and QoS Routing in Multi-Channel Wireless Mesh Networks

Jian Tang, Guoliang Xue, and Weiyi Zhang
(Arizona State University, USA)

Modelling and Performance Analysis of the Distributed Scheduler in IEEE 802.15 Mesh Mode

Min Cao (University of Illinois, Urbana-Champaign, USA),
Wenchao Ma, Qian Zhang (Microsoft Research Asia, China),
Xiaodong Wang (Columbia University, USA), and
Wenwu Zhu (Intel China, China)

Stationary Distributions of Random Walk Mobility Models for Wireless Ad Hoc Networks

Michael McGuire (University of Victoria, Canada)

Session 2B: Clustering 2

Session Chair: Chiara Petrioli (University of Rome "La Sapienza," Italy)

2:00pm-3:30 (2405 Siebel Center)

A Distributed Coordination Framework for Wireless Sensor and Actor Networks

Tommaso Melodia, Dario Pompili, Vehbi C. Gungor, and Ian F. Akyildiz
(Georgia Institute of Technology, USA)

Power Balanced Coverage-Time Optimization for Clustered Wireless Sensor Networks

Tao Shu, Marwan Krunz, and Sarma Vrudhula
(University of Arizona, USA)

Inducing Spatial Clustering in MAC Contention for Spread Spectrum Ad Hoc Networks

Xiangying Yang and Gustavo de Veciana
(University of Texas at Austin, USA)

Break 3:30pm-4:00pm (Basement of Coordinated Science Laboratory)

Demo Session

Session Chair: Scott R. Graham (*Air Force Institute of Technology, USA*)

3:30pm-5:30pm (B13 and B14 Coordinated Science Laboratory)

Secure Incentive-based Charging Protocol (SICP)

Joao Girao, Bernd Lamparter and Dirk Westhoff
(*NEC-Europe Ltd. Network Laboratories, Germany*)

MobiREAL Simulator- Achieving Realistic Performance Evaluation of MANET Applications

Akira Uchiyama, Hirozumi Yamaguchi, Teruo Higashino (*Osaka University, Japan*), and
Keiichi Yasumoto(*Nara Institute of Science and Technology, Japan*)

Architecture and Protocols for Multi-Channel Wireless Networks

Chandrakanth Chereddi, Pradeep Kyasanur, Jungmin So, and Nitin H. Vaidya
(*University of Illinois at Urbana-Champaign, USA*)

Ad Hoc Network Testing Tools

A. Karygiannis and E. Antonakakis
(*National Institute of Standards and Technolog, USA*)

The Convergence of Control with Communication and Computation: Sensing and Actuation over Wireless Networks

Craig Robinson, Girish Baliga, Hans-Jörg Schütz, and P.R. Kumar
(*University of Illinois at Urbana-Champaign, USA*)

RI-EDF (Robust Implicit-EDF)

Marco Caccamo, Spencer Hoke, Tanya Crenshaw, Ajay Tirumala,
Tao Luo, and Jaehoon Ha
(*University of Illinois at Urbana-Champaign, USA*)

Zero-Configuration Robust Indoor Localization

Hyuk Lim, Luke Kung, Jennifer Hou, and Haiyun Luo
(*University of Illinois at Urbana-Champaign, USA*)

Wine, Hors D'Oeuvres, and Dinner: 5:45pm — 9:00pm

Krannert Center for the Performing Arts, 500 S. Goodwin, Urbana, IL 61801

Thursday, May 26, 2005 (Morning Session)

Registration 7:15am (Lobby of Siebel Center)

Session 3A: Transport 1

Session Chair: Serge Fdida (*University Pierre & Marie Curie, France*)

8:00am-10:00am (2405 Siebel Center)

Characterizing Achievable Multicast Rates in Multi-Hop Wireless Networks

Randeep Bhatia and Li Li
(*Bell Labs, Lucent Technologies, USA*)

Distributed Dynamic Scheduling for End-to-End Rate Guarantees in Wireless Ad Hoc Networks

Theodoros Salonidis (*Rice University, USA*) and
Leandros Tassiulas (*University of Thessaly, Greece*)

Cross-Layer Rate Control for End-to-End Proportional Fairness in Wireless Networks with Random Access

Xin Wang and Koushik Kar (*Rensselaer Polytechnic Institute, USA*)

On the End-to-end Call Acceptance and the Possibility of Deterministic QoS Guarantees in Ad Hoc Wireless Networks

S. Sriram (*University of California, Berkeley, USA*),
T. Bheemarjuna Reddy (*Indian Institute of Technology, India*),
B. S. Manoj (*University of California, Berkeley, USA*), and
C. Siva Ram Murthy (*Indian Institute of Technology, India*)

Session 3B: Location Services

Session Chair: Costas Busch (*Rensselaer Polytechnic Institute, USA*)

8:00am-10:00am (1404 Siebel Center)

Localization and Routing in Sensor Networks by Local Angle Information

Jehoshua Bruck, Jie Gao, and Anxiao Andrew Jiang
(*California Institute of Technology, USA*)

Easily-Managed and Topological-Independent Location Service for Self-Organizing Networks

Aline C. Viana, Marcelo D. de Amorim, Serge Fdida (*University of Paris VI, France*),
Yannis Viniotis (*North Carolina State University, USA*), and
José F. de Rezende (*Federal University of Rio de Janeiro, Brazil*)

Sextant: A Unified Node and Event Localization Framework Using Non-Convex Constraints

Saikat Guha, Rohan Narayan Murty, and E. Gün Sirer
(*Cornell University, USA*)

Scalable Location Services for Hierarchically Organized Mobile Ad Hoc Networks

Siva Sivavaikesar and George Pavlou (*University of Surrey, UK*)

Break 10:00-10:30am (Lobby of Siebel Center)

Plenary Panel

Organizer: Sascha D. Meinrath (*CUWiN, Urbana-Champaign, USA*)

10:30am-12:30pm (1404 Siebel Center)

'Openness' and the Public Airwaves

Moderator: Kenneth R. Carter (*FCC*)

Panelists: V. Bahl (*Microsoft*), Mark Cooper (*CFA*), Ben Scott (*Free Press*), and
Matt Westervelt (*Metrix*)

Lunch 12:30pm-2:00pm

Thursday, May 26, 2005 (Afternoon Session)

Session 4A: Routing 1

Session Chair: David Johnson (Rice University, USA)

2:00pm-3:30pm (1404 Siebel Center)

Efficient Geographic Routing in Multihop Wireless Networks

Seungjoon Lee, Samrat Bhattacharjee (*University of Maryland at College Park, USA*), and
Suman Banerjee (*University of Wisconsin, USA*)

Link-Layer Salvaging for Making Routing Progress in Mobile Ad Hoc Networks

Chansu Yu (*Cleveland State University, USA*),
Kang G. Shin (*University of Michigan, USA*), and
Lubo Song (*Cleveland State University, USA*)

A Secure Ad-hoc Routing Approach Using Localized Self-healing Communities

Jiejun Kong (*University of California at Los Angeles, USA*),
Xiaoyan Hong (*University of Alabama, USA*),
Yunjung Yi, Joon-Sang Park, (*University of California at Los Angeles, USA*),
Jun Liu (*University of Alabama, USA*), and
Mario Gerla (*University of California at Los Angeles, USA*)

Session 4B: Transport 2

Session Chair: Sergio Servetto (Cornell University, USA)

2:00pm-3:30pm (2405 Siebel Center)

Reliable Bursty Convergecast in Wireless Sensor Networks

Hongwei Zhang, Anish Arora (*The Ohio State University, USA*),
Young-ri Choi, and Mohamed G. Gouda (*University of Texas at Austin, USA*)

TCP over Multihop 802.11 Networks: Issues and Performance Enhancement

Kitae Nahm, Ahmed Helmy, and C.-C. Jay Kuo (*University of Southern California, USA*)

TCP with Adaptive Pacing for Multihop Wireless Networks

Sherif M. ElRakabawy, Alexander Klemm, and Christoph Lindemann
(*University of Dortmund, Germany*)

Break 3:30pm-4:00pm (Lobby of Siebel Center)

- 1) **Exploiting Smart Antennas in Wireless Ad Hoc Networks Using Synchronous Collision Resolution Medium Access Control Schemes**
John A. Stine (*The Mitre Corporation, USA*)
- 2) **On the Average-Throughput Performance of Code-based Scheduling Protocols for Wireless Ad Hoc Networks**
Carlos H. Rentel and Thomas Kunz (*Carleton University, Canada*)
- 3) **Queuing Network Models for Delay Analysis of Multihop Wireless Ad Hoc Networks**
Nabhendra Bisnik and Alhussein Abouzeid (*Rensselaer Polytechnic Institute, USA*)
- 4) **MagnetOS: A Single System Image Operating System for Wireless Ad Hoc Networks**
Hongzhou Liu, Tom Roeder, Kevin Walsh, Rimon Barr, and Emin Gun Sirer
(*Cornell University, USA*)
- 5) **On the Coverage Property of Dominating Sets**
Rong Zheng (*University of Houston, USA*) and
Guanghui He (*University of Illinois at Urbana Champaign, USA*)
- 6) **Cost Efficient On-line Hop Count Routing Strategies for Wireless Sensor Networks**
Michele Rossi (*University of Ferrara, Italy*),
Ramesh R. Rao (*University of California at San Diego, USA*), and
Michele Zorzi (*University of Padova, Italy*)
- 7) **Design, Analysis and Evaluation of Multi-Channel Multi-Hop Wireless Networks**
Jungmin So, Pradeep Kyasanur, and Nitin H. Vaidya
(*University of Illinois at Urbana Champaign, USA*)
- 8) **Secure Service Lookup in Service Centric Sensor Networks**
Hans-Joachim Hof, Ingmar Baumgart, and Martina Zitterbart
(*University of Karlsruhe, Germany*)
- 9) **On Integrating Energy Conservation Approaches for Ad Hoc Networks**
Cigdem Sengul and Robin Kravets
(*University of Illinois at Urbana Champaign, USA*)
- 10) **BeamNet: An Ad Hoc Network Testbed Using Beamforming Antennas**
Romit Roy Choudhury (*University of Illinois at Urbana Champaign, USA*),
Tetsuro Ueda, and Jacir Bordim (*ATR, Adaptive Communications Research Lab, Japan*)
- 11) **Improving Stability and Performance of Multihop 802.11 Networks**
Kitae Nahm, Ahmed Helmy, and C. C. Jay Kua
(*University of South California, USA*)
- 12) **Speculative Sensing with Partial Information**
Yi Jiang and Kuang-Ching Wang (*Clemson University, USA*)
- 13) **Towards Scalable 802.11 Wireless Mesh**
Matthew Belcher, Steven Ko, and Haiyun Luo
(*University of Illinois at Urbana Champaign, USA*)
- 14) **Individual User WLAN Traffic Analysis**
Guanghui He, Nathanael Thompson, and Haiyun Luo
(*University of Illinois at Urbana Champaign, USA*)
- 15) **Network Layer Position Verification**
Xiaoxin Wu and Cristina Nita-Rotaru (*Purdue University, USA*)
- 16) **Selecting Transmit Powers and Carrier Sense Thresholds in CSMA Protocols for Wireless Ad Hoc Networks**
Jason A. Fuemmeler, Nitin H. Vaidya, and Venugopal V. Veeravalli
(*University of Illinois at Urbana Champaign, USA*)
- 17) **Authenticated Flooding in Large-scale Sensor Networks**
Ju-Hyung Son, Haiyun Luo, and Seung-Woo Seo
(*University of Illinois at Urbana Champaign, USA*)
- 18) **Exposing Two Critical Myths about Correlation Aware Data Aggregation**
Yujie Zhu and Raghupathy Sivakumar (*Georgia University of Technology, USA*)

- 19) Opportunistic Region-based Admission Control for Wireless Mesh Networks**
 Yuan Yuan (*University of Maryland, College Park, USA*),
 L. Lily Yang (*Intel Research, USA*), and
 William Arbaugh (*University of Maryland, College Park, USA*)
- 20) Rate vs. Range vs. Reliability: How to Best Exploit MIMO in Ad-Hoc Networks**
 Karthikeyan Sundaresan and Raghupathy Sivakumar
 (*Georgia Institute of Technology, USA*)
- 21) SOLAR: Sociological orbit aware location approximation and routing in MANET**
 Joy Ghosh, Sumesh J. Philip, and Chunming Qiao
 (*University of Buffalo, The State University of New York, USA*)
- 22) MIRROR: An integrated framework for capturing real world behaviour for models of ad hoc networks**
 Wenjun Hu and Jon Crowcroft (*Cambridge University, USA*)
- 23) Towards Providing Security for RFID Tags with Depleting Internal Energy**
 Viswanathan Natarajan (*University at Buffalo, (SUNY), USA*),
 Aruna Balasubramanian, Sumit Mishra
 (*CompSys Technologies Inc., Amherst, NY, USA*), and
 Ramalingam Sridhar (*University at Buffalo, (SUNY) USA*)
- 24) A Cross-Layer Approach to Detecting DoS attacks in Wireless Ad-Hoc Networks**
 Geethapriya Thamilarasu (*University at Buffalo (SUNY), USA*),
 Aruna Balasubramanian (*CompSys Technologies Inc., Amherst, NY, USA*),
 Sumita Mishra (*CompSys Technologies Inc., Amherst, NY, USA*), and
 Ramalingam Sridhar (*University at Buffalo (SUNY), USA*)
- 25) Encounter-based message broadcasting in ad hoc networks with intermittent connectivity**
 Wei-jen Hsu and Ahmed Helmy (*University of Southern California, USA*)
- 26) A Multichannel MAC protocol for transparent wireless cellular - Ad-hoc interworking**
 S. Sankaranarayanan, Panagiotis Papadimitratos, and A. Mishra
 (*Virginia Technology, USA*)
- 27) A Generic Probability-Based Forwarding Rule for High Throughput Routing in Wireless Sensor Networks**
 Men Long and Chwan Hwa Wu (*Auburn University, USA*)

<p>Wine, Hors D'Oeuvres, and Dinner: 5:45pm-9:00pm Kennedy's at Stone Creek, 2560 S. Stone Creek, Urbana, IL 61801</p>

Friday May 27, 2005 (Morning Session)

Session 5A: Theory

Session Chair: Christian Schindelhauer (*University of Paderborn, Germany*)

8:00am-9:30am (2405 Siebel Center)

Mobility Improves Coverage of Sensor Networks

Benyuan Liu (*University of Massachusetts-Lowell, USA*),

Peter Brass (*City College of New York, USA*),

Olivier Dousse (*EPFL, Switzerland*),

Philippe Nain (*INRIA, Sophia Antipolis, France*), and

Don Towsley (*University of Massachusetts at Amherst, USA*)

Deploying Sensor Networks with Guaranteed Capacity and Fault Tolerance

Jonathan L. Bredin (*Colorado College, USA*),

Erik D. Demaine, MohammadTaghi Hajiaghayi, and Daniela Rus

(*Massachusetts Institute of Technology, USA*)

Analysis of Hop-Distance Relationship in Spatially Random Sensor Networks

Serdar Vural and Eylem Ekici (*Ohio State University, USA*)

Session 5B: Applications

Session Chair: Radha Poovendran (*University of Washington, USA*)

8:00am-9:30am (1404 Siebel Center)

Low-Coordination Topologies for Redundancy in Sensor Networks

Rajagopal Iyengar, Koushik Kar (*Rensselaer Polytechnic Institute, USA*), and

Suman Banerjee (*University of Wisconsin-Madison, USA*)

A Cross Layer Optimization of Gnutella for Mobile Ad Hoc Networks

Marco Conti, Enrico Gregori, and Giovanni Turi (*Istituto di Informatica e Telematica-CNR, Italy*)

Towards Commercial Mobile Ad Hoc Network Applications: A Radio Dispatch System

Elgan Huang, Wenjun Hu, Jon Crowcroft, and Ian Wassell (*University of Cambridge, UK*)

Break 9:30am-10:00am (Lobby of Siebel Center)

Session 6A: Sensor Networks

Session Chair: Eylem Ekici (*Ohio State, USA*)

10:00am-12:00pm (1404 Siebel Center)

Hybrid Sensor Networks: A Small World

Gaurav Sharma and Ravi Mazumdar (*Purdue University, USA*)

Least Privilege and Privilege Deprivation: Towards Tolerating Mobile Sink Compromises in Wireless Sensor Networks

Wensheng Zhang, Hui Song, Sencun Zhu, and Guohong Cao

(*Pennsylvania State University, USA*)

Minimum Power Configuration in Wireless Sensor Networks

Guoliang Xing, Chenyang Lu (*Washington University in St. Louis, USA*),

Ying Zhang, Qingfeng Huang (*Palo Alto Research Center, USA*), and

Robert Pless (*Washington University in St. Louis, USA*)

Efficient Gathering of Correlated Data in Sensor Networks

Himanshu Gupta, Vishnu Navda, Samir R. Das, and Vishal Chowdhary

(*State University of New York, USA*)

Session 6B: Routing 2

Session Chair: Charles Perkins (*Nokia Research Center, USA*)

10:00am-12:00pm (2405 Siebel Center)

Temporal Properties of Low Power Wireless Links: Modeling and Implications on Multi-Hop Routing

Alberto Cerpa, Jennifer L. Wong, Miodrag Potkonjak, and Deborah Estrin

(*University of California, Los Angeles, USA*)

Maximum-Lifetime Routing Algorithms for Networks with Omnidirectional and Directional Antennas

Ariel Orda (*Technion-Israel Institute of Technology, Israel*) and

Ben-Ami Yassour (*IBM Research Laboratory in Haifa*)

Timed Grid Routing (TIGR) Bites off Energy

Roy Friedman and Guy Korland

(*Technion-Israel Institute of Technology, Israel*)

Minimum Energy Reliable Paths Using Unreliable Wireless Links

Qunfeng Dong, Micah Adler (*University of Massachusetts at Amherst, USA*),

Suman Banerjee (*University of Wisconsin, USA*), and

Archan Misra (*IBM T J Watson Research Center, USA*)

Tutorial 1

Friday, May 27, 2005

Tutorial 1 (2405 Siebel Center)

Session Chairs: Bhaskar Krishnamachari (*University of Southern California, USA*) and
Richard J. La (*University of Maryland, College Park, USA*)

1:00pm-5:00pm at Siebel Center

Cross-Layer Design for Wireless Networks
Ness Shroff (*Purdue University, USA*)

Break 3:00pm-3:30pm (Lobby of Siebel Center)

Tutorial 2

Saturday, May 28, 2005

Tutorial 2 (2405 Siebel Center)

Session Chairs: Bhaskar Krishnamachari (*University of Southern California, USA*) and
Richard J. La (*University of Maryland, College Park, USA*)

8:00am-12:00pm at Siebel Center

Algorithm and Graph Issues in Wireless Networks
Xiang-Yang Li (*Illinois Institute of Technology, USA*)

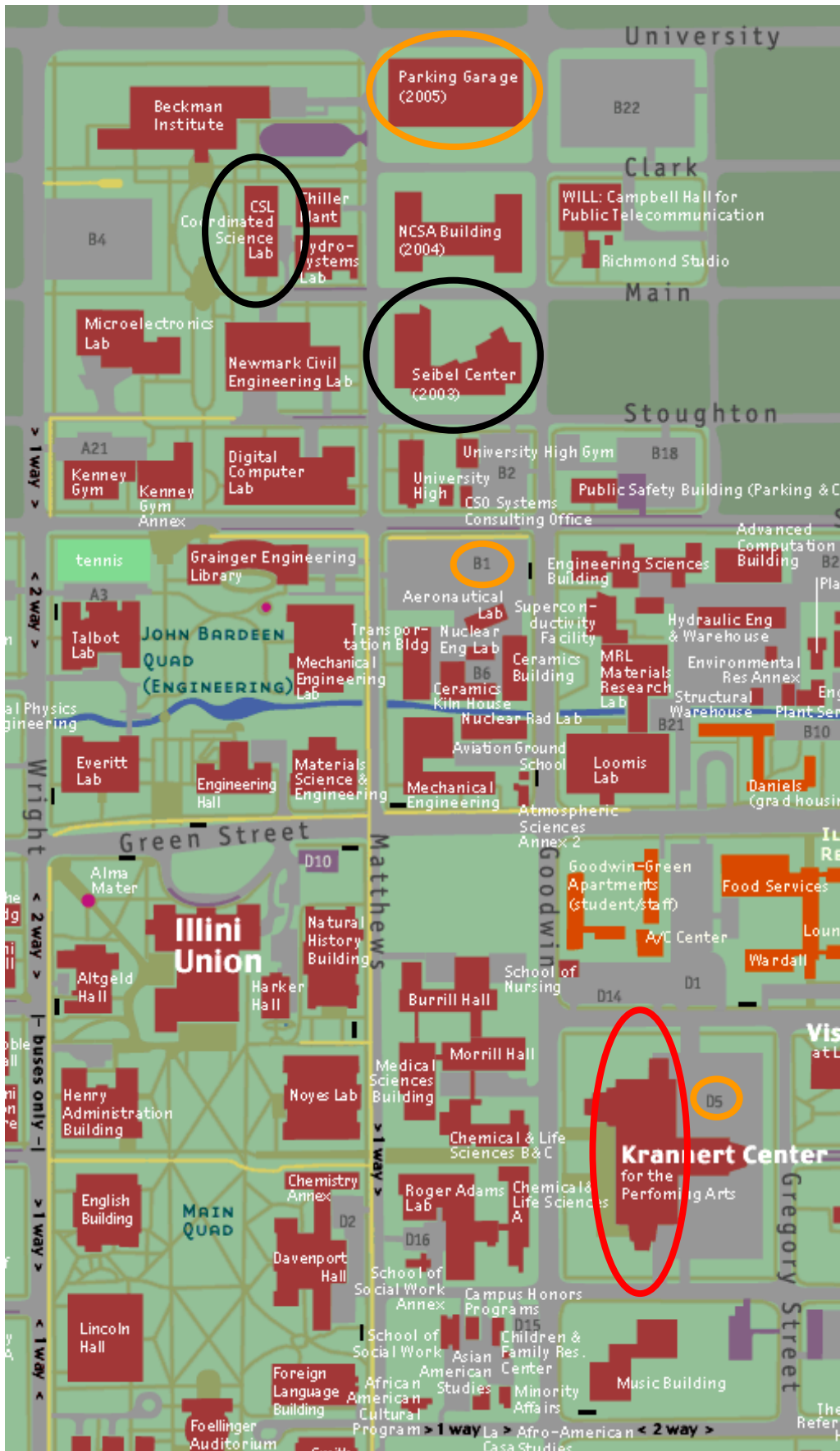
Break 10:00am-10:30pm (Lobby of Siebel Center)

Transportation

- Distance from Champaign's Willard Airport (airport code CMI): 7 mi. Driving directions to conference site: From Airport exit, turn left onto Neil St. (Rte 45 North). Go 6 miles to Springfield Avenue and turn right. Go 1 mile, make a left onto Matthew, and Siebel Center is on your right. Go one more block and Parking Garage (lots of quarters are needed) is on your right.
- Both Hampton Inn and Holiday Inn provide free shuttle to and from the airport. CUMTD Air Bus also covers Willard Airport but with limited daytime services. Please see schedule on page 16 for buses to/from the airport. Please check route online.
- A conference bus will be provided for guests staying at the Holiday Inn. The bus leaves Holiday Inn for the conference site (Siebel Center) 7:30a.m., May 25-27. On May 25 and 26 the bus returns at 9:00pm from Krannert Center and Kennedy's, respectively. On May 27 the bus leaves Siebel Center for Holiday Inn at noon.
You can also take Champaign-Urbana MTD bus 13 Silver to commute between Holiday Inn and Siebel Center. The route, schedule, and fare are all on-line. However, 13 Silver bus does not operate after 6:16pm. Instead, it is recommended to use CUMTD 130 Silver at night. The route and schedule are also online.
- Conference bus is provided for all banquet attendees on May 26. The bus leaves Siebel Center at 5:30pm for Kennedy's at Stone Creek, and returns from Kennedy's at 9:00pm. On its return trip it will make extra stops at Illini Union, Hampton Inn, Holiday Inn, and Illinois Street Residence Hall.
- If you prefer driving, please see driving directions and parking information below in Events and Parking.
- Local Taxi
 - Corky's Cab 1-217-352-3121 8:00am-7:00pm
 - Illini Limo 1-217-384-5892 24 hours
 - Yellow Checker Cab 1-217-355-3553 24 hours

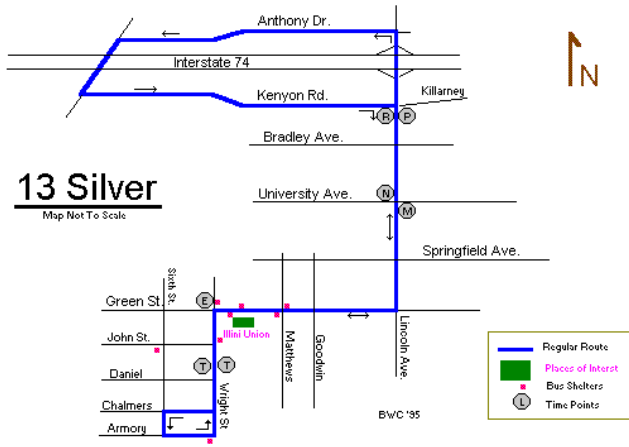
Events and Parking

- Technical tracks and Tutorials: Siebel Center. Located between Goodwin Avenue and Matthews Avenue, north of Stoughton. Address: 201 N. Goodwin Ave., Urbana, IL 61801.
- Parking: Lot at southeast corner of University and Matthews (meters on the first two floors of parking structure B4, keep lots of quarters), or meters on Matthews Street. Also meters on Goodwin Avenue, meters in parking lot B1 (located on northeast corner of Goodwin and Springfield), or meters on Springfield Avenue. All meters charge a quarter for 20 minutes (or a dollar coin for 80 minutes), with a limit of 10 hours (please double check).
- Banquet dinners:
 - May 25: Krannert Center for the Performing Arts: three blocks south of Siebel Center. Parking: meters on streets, or meters in parking lot D5 (enter from Illinois Street).
 - May 26: Kennedy's at Stone Creek. Address: 2560 Stone Creek Blvd Urbana, IL 61802. Telephone: 1-217-384-8111. Five miles southeast of Siebel Center. Board bus 5:30pm at Siebel Center.
Driving from Siebel Center (201 N. Goodwin) to Kennedy's at Stone Creek (2560 S. Stone Creek Blvd) (5.9 miles or 16 minutes). Start out going North on N. Goodwin Ave for 0.2 miles and turn right onto University Ave. Drive east on University Ave. for 0.2 miles and turn right onto Lincoln Ave. Drive south on Lincoln Ave. for 2 miles and turn left onto Windsor Rd. Drive east on Windsor Rd for 3 miles and turn left into Stone Creek.
- No conference lunches will be provided. You are encouraged to explore with your friends the campus town, two blocks west and one block South of Siebel Center. A large variety of restaurants are located there along Green Street between Wright and Third.



13 Silver Weekday Schedule

You can take Champaign-Urbana MTD bus 13 Silver to commute between Holiday Inn and Siebel Center. The route, schedule, and fare are all on-line. However, 13 Silver bus does not operate after 6:16pm. Instead, you are recommended to use CUMTD 130 Silver at night. The route and schedule are also online.



13 Silver, Weekday Schedule



CUMTD 13 Silver Schedule

PDF

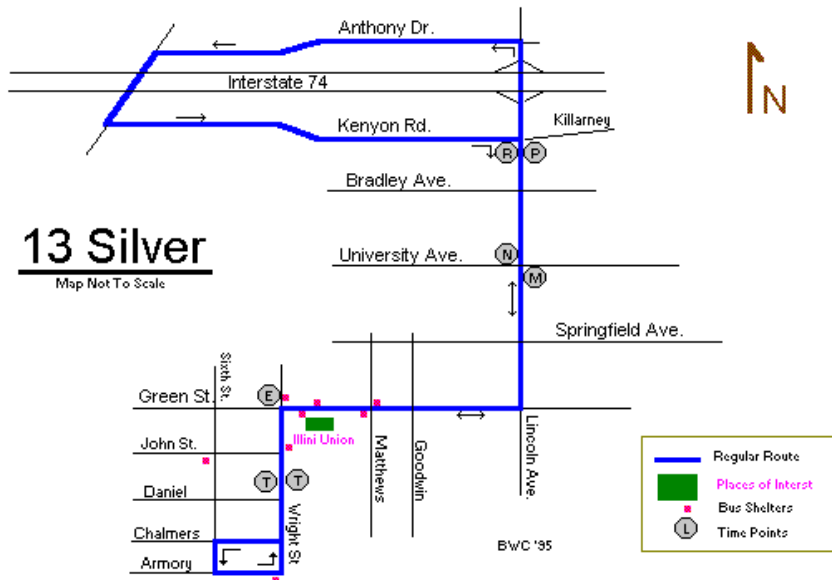
MAP

Northbound A.M.				Southbound A.M.		
Transit Plaza East Side (T)	Illini Union (E)	Lincoln & University (M)	Lincoln & Killarney (P)	Killarney & Lincoln (R)	Lincoln & University (N)	Transit Plaza West Side (T)
6:45	6:47	6:51	6:55	7:01	7:05	7:11
7:13	7:15	7:19	7:23	7:29	7:39	7:47
7:50	7:52	7:56	8:00	8:06	8:10	8:17
8:18	8:20	8:24	8:28	8:34	8:39	8:47
8:50	8:52	8:56	9:00	9:06	9:10	9:17
9:19	9:21	9:25	9:29	9:35	9:39	9:47
9:50	9:52	9:56	10:00	10:06	10:10	10:17
10:19	10:21	10:25	10:29	10:36	10:40	10:47
10:49	10:51	10:55	10:59	11:06	11:10	11:17
11:19	11:21	11:25	11:29	11:36	11:40	11:47
11:49	11:51	11:55	11:59	12:06	12:10	12:17
Northbound P.M.				Southbound P.M.		
Transit Plaza East Side (T)	Illini Union (E)	Lincoln & University (M)	Lincoln & Killarney (P)	Killarney & Lincoln (R)	Lincoln & University (N)	Transit Plaza West Side (T)
12:19	12:21	12:25	12:29	12:36	12:40	12:47
12:49	12:51	12:55	12:59	1:06	1:10	1:17
1:19	1:21	1:25	1:29	1:36	1:40	1:47
1:49	1:51	1:55	1:59	2:06	2:10	2:17
2:19	2:21	2:25	2:29	2:36	2:40	2:47
2:49	2:51	2:55	2:59	3:06	3:10	3:17
3:19	3:21	3:25	2:29	3:36	3:40	E3:47
L4:06	4:08	4:12	4:16	4:23	4:27	4:35 U4:33
4:38	4:40	4:45	4:49	4:57	5:01	5:09
U4:55	U4:57	U5:01	U5:05	5:31	5:35	U5:26
5:12	5:14	5:19	5:23			5:42
U5:28	U5:30	U5:34	U5:38			
5:44	5:46	5:50	5:54	6:00	6:07	6:14
6:16	6:18	6:22	6:26	6:03 6:32 6:35	6:07 6:39	S6:45

- E - This trip continues as a 23 Shuttle East Route. Please refer to the Shuttle East Schedule for exact times.
- L - This trip begins at Armory and Wright at 4:05P.
- U - This trip operates University of Illinois Fall and Spring Semester Days Only.
- S - This trip continues as a 130 Silver Evening Route. Please refer to the silver Evening Schedule for exact times.

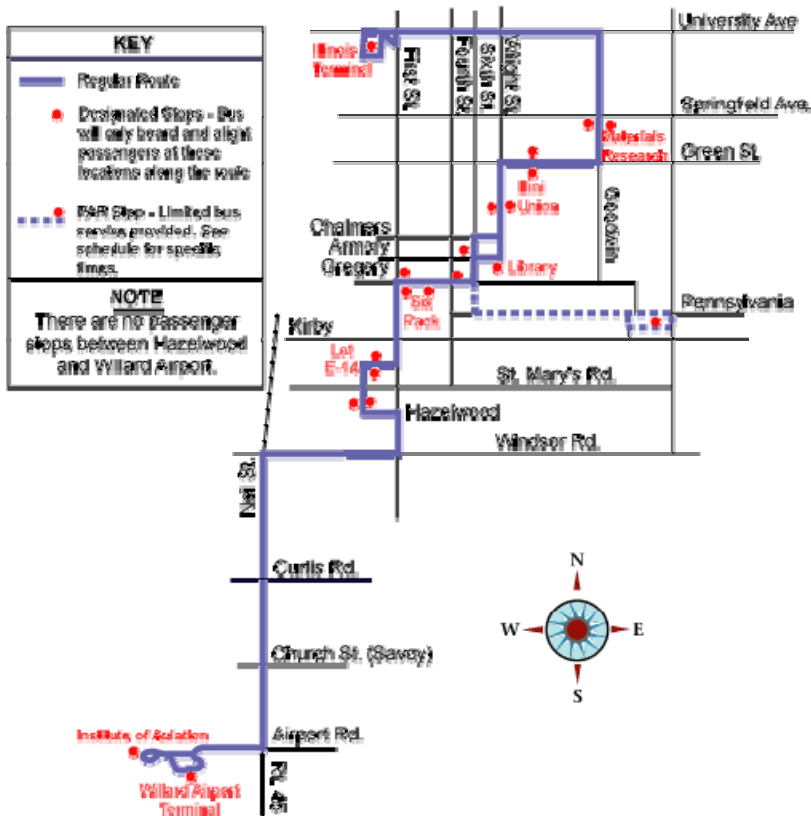
130 Silver Weekday Evening Schedule

You can take Champaign-Urbana MTD bus 13 Silver to commute between Holiday Inn and Siebel Center. The route, schedule, and fare are all on-line. However, 13 Silver bus does not operate after 6:16pm. Instead, you are recommended to use CUMTD 130 Silver at night. The route and schedule are also online.



CUMTD 130 Silver Schedule

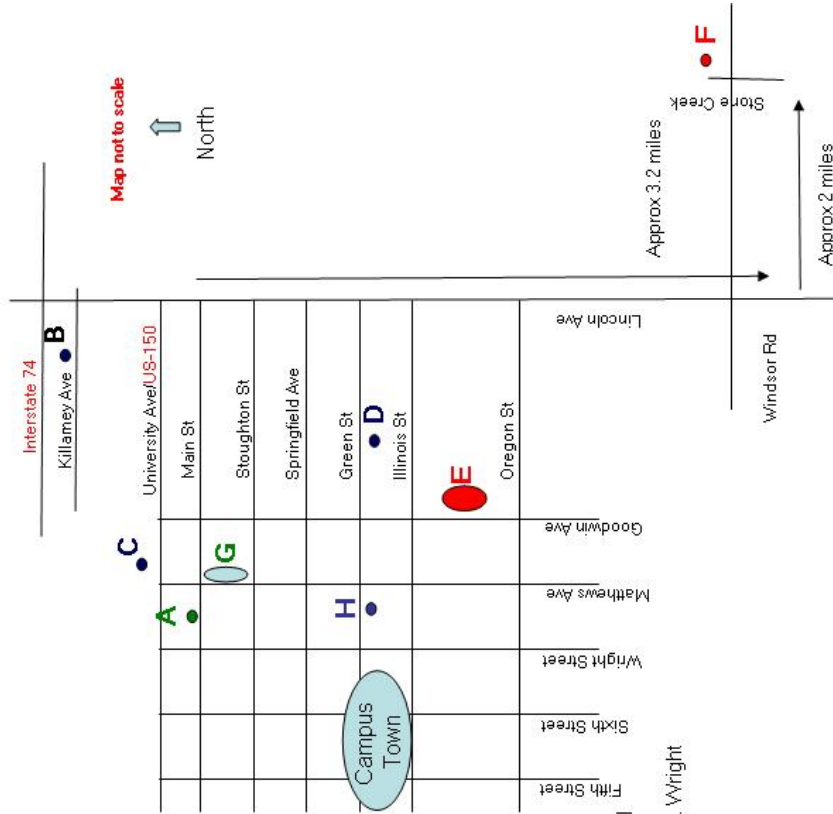
CAMPUS TO LINCOLN SQUARE VIA LINCOLN AVE. & CUNNINGHAM				LINCOLN SQUARE TO CAMPUS VIA CUNNINGHAM & LINCOLN AVE.		
Transit Plaza East Side (T)	Green & Wright (E)	Lincoln & University (N)	Lincoln & Killarney (R)	Lincoln & Killarney (R)	Lincoln & University (N)	Transit Plaza West Side (T)
6:47 7:17	6:49 7:19	6:53 7:23	6:58 7:28	7:03 7:33 8:03	7:08 7:38 8:0	6:45 7:15 7:45 8:15
7:47 8:17 8:47 9:17	7:49 8:19 8:49 9:19	7:53 8:23 8:53 9:23	7:58 8:28 8:58 9:28	8:33 9:03 9:33 10:03	8:38 9:08 9:38 10:08	8:45 9:15 9:45 10:15
9:47 10:17 10:47 11:17 11:47	9:49 10:19 10:49 11:19 11:49	9:53 10:23 10:53 11:23 11:53	9:58 10:28 10:58 11:28 11:58	10:33 11:03 11:33	10:38 11:08 11:38	10:45 11:15 11:45



**CUMTD Air Bus
Monday - Saturday Schedule**

A.M.							
To Airport				To Illinois Terminal			
Illinois Terminal	Transit Plaza West Side	Lot E-14	Institute of Aviation	Willard Terminal	Lot E-14	Transit Plaza West Side	Illinois Terminal
5:20	P5:28	P5:42	5:52	5:55	6:05	6:13	6:20
6:25	6:33	6:42	X6:52	X6:55	-----	-----	X7:15
7:15	P7:23	P7:37	7:50 / 8:00	8:03	8:13	8:21	8:29
8:30	8:38	8:47	X9:00	X9:03	-----	-----	X9:20
9:20	9:28	9:37	9:50 / 10:00	10:03	10:13	10:21	10:29
10:30	10:38	10:47	X11:00	X11:03	-----	-----	X11:20
11:20	11:28	11:37	11:50 / 12:00	12:03	12:13	A12:21*	
P.M.							
To Airport				To Illinois Terminal			
Illinois Terminal	Transit Plaza West Side	Lot E-14	Institute of Aviation	Willard Terminal	Lot E-14	Transit Plaza West Side	Illinois Terminal
1:30	A12:28	12:37	12:50 / 1:00	1:03	1:13	1:21	1:29
2:20	1:38	1:47	X2:00	X2:03	-----	-----	X2:20
	2:28	2:37	2:50 / 3:00	3:03	3:13	3:21	3:29
3:30	3:38	3:47	X4:00	X4:03	-----	-----	X4:20
4:20	4:28	4:37	4:50 / 5:00	5:03	5:13	5:21	5:29
5:30	5:38	5:47	6:00	6:03	6:13	6:21	6:29
6:30	6:38	6:47	7:00	7:03	7:13	7:21	7:29*

- A. Coordinated Science Laboratory**
- B. Holiday Inn**
- C. Hampton Inn**
- D. Illinois Street Residence Halls**
- E. Krannert Center for the Performing Arts**
- F. Kennedy's at Stone Creek**
- G. Siebel Center**
- H. Illini Union**



Campus Town Restaurant

- Asiana** (*Korean*) 408 E. Green
- Bagelman's** (*Coffee*) 504 W. University
- Basil Thai Café** (*Thai*) 410 E. Green
- Baskin-Robbins Ice Cream** (*Desserts*) 404 W. University
- Bombay Indian Grill** (*Indian*) 408 E. Green
- Dairy Queen** (*Desserts*) 811 W. University
- Delights Ice Cream** (*Desserts*) 508 E. Green
- Dorca's Restaurant** (*Korean*) 403 E. Green
- Espresso Royale** (*Coffee*) 1117 W. Oregon & 802 E. Daniel
- Intermezzo at Krannert** (*Desserts*) 500 S. Goodwin
- Jerusalem Middle Eastern Cuisine** (*Middle Eastern*) 601 S. Wright
- Mandarin Wok** (*Chinese*) 403 E. Green
- Margarita's Mexican Taqueria** (*Mexican*) 401 E. Green
- Murphys Pub** (*American*) 604 E. Green
- Papa Dels Pizza** (*Pizza*) 206 E. Green
- Papa John's Pizza** (*American*) 106 E. Green
- Qdoba Mexican Grill** (*Mexican*) 617 E. Green
- Red Herring Vegetarian Rest.** (*American*) 1209 W. Oregon
- The Bread Company** (*American*) 706 S. Goodwin
- The Cookie Jar** (*Desserts*) 712 S. 8th Street
- Timpones** (*Italian*) 710 S. Goodwin
- Zorbas** (*Greek*) 627 E. Green