4th Virginia Tech Symposium on Personal Communications slated for June 1-3, 1994

Preparations are underway for the fourth Virginia Tech Symposium on Wireless Personal Communications. This year’s symposium will feature several new attractions including:

- tutorial/survey papers from MPRG faculty on wireless issues,
- a panel on the impact of defense conversion on the wireless industry, and
- a panel on regulatory issues for PCS.

In addition to these special events, technical papers will be presented in the areas of digital signal processing and spread spectrum, propagation, and technical evaluation of emerging communication systems. A poster session will provide an opportunity for one-on-one discussions of recent research results.

The tutorial/survey papers will cover the areas of spread spectrum communications, propagation, and interference rejection.

The panel “Defense Conversion Impact On Wireless Telecommunications” includes Randy Katz from ARPA, Henry Bachman from Hazeltine, Joe Kennedy from ERA, Jerry Woodard from Signal Science, and Bruce Cole from ESL, all of whom are actively involved in transitioning defense technology to wireless communications products. They will discuss the impact of defense conversion on the wireless communications industry and the opportunities and pitfalls awaiting defense contractors entering the commercial wireless business.

The panel session on regulatory issues in PCS is being coordinated by Virginia Tech’s Pamplin College of Business and will feature Jim Lovette with Apple Computer, Charlie Plott from Caltech, and Byron Marchant of the FCC. Other panelists expected to participate are Bob Kyle, President of the Small Business PCS Association and Rick Calder, MCI Wireless.

Highlights from the technical sessions include: adaptive arrays for mobile communications by Nobuyoshi Kikuma of the Nagoya Institute of See Symposium, page 3

Brian Woerner, MPRG faculty member with research interest in spread spectrum, modulation and coding, and Intelligent Vehicle Highway research, will be assuming the role of MPRG director in June. Dr. Woerner and his students have built MPRG into a multi-dimensional research and teaching program that builds upon the knowledge of wireless channels which MPRG has been recognized for in the past.

As director, Dr. Woerner will be responsible for the internal and external affairs of MPRG. With the acquisition of new research space complete, Ted Rappaport, MPRG’s founder and first director, will return to normal faculty status and will focus on student research and the development of materials for Virginia Tech’s new courses in wireless.
LOCATION AND LODGING

The symposium will be held on the beautiful Virginia Polytechnic Institute and State University (Virginia Tech) campus, in the modern Squires Student Center and the Donaldson Brown Hotel and Conference Center. The Blacksburg Limousine Service offers efficient transportation between the Roanoke Airport and the Donaldson Brown Hotel and Conference Center.

Blacksburg is southeast of Roanoke, Virginia, on U.S. 460. Route 460 is reached by Interstate 81 (exit 118) at Christiansburg, Virginia. The campus borders U.S. 460, which is Blacksburg’s Main Street, and the 460 Bypass. The Center is located in downtown Blacksburg two blocks off Main Street at the corner of College Avenue and Otey Street. Convenient guest parking is available for conference participants and a shuttle bus will provide transportation between the Donaldson Brown Hotel and Conference Center and local hotels.

A block of lodging rooms is being held at the Donaldson Brown Hotel and Conference Center and the Blacksburg Marriott. You may reserve lodging at the Donaldson Brown Center by completing the form on page 11 or by calling (703) 231-8000 or faxing to (703) 231-3746. For reservations at the Marriott, call (703) 522-7001. Lodging reservations should be made by May 2, 1994.

HOW TO REGISTER

The registration fee for the symposium is $375. Employees of the MPRG affiliate companies have a special reduced fee of $325, and full-time students may register at a special rate of $240. The fee includes participation in all activities, bound proceedings, two gourmet receptions, two breakfasts, luncheons, and the Friday evening party and barbecue. All participants, including presenters, are required to register by May 18, 1994. To register, please return the form on page 11 with your check or purchase order. Late registrations (those after May 18) must be made by phone with the Conference Registrar at (703) 231-5182 to confirm space availability. Registrations will be limited.

Refunds of registration fees are honored when notification of your withdrawal is received four full working days prior to the starting date of the symposium. However, substitutions will be accepted at any time.

FOR MORE INFORMATION

For further information about this symposium, please contact Jack Lilly at the Donaldson Brown Hotel and Conference Center at (703) 231-4849.

Program Schedule

Wednesday, June 1, 1994

3:00 - 4:30 p.m. Panel — PCS: Key Competitive Issues in a Global Market
  Speakers: Jim Lovette, Apple Computer; Rick Calder, MCI Wireless; Dr. Charlie Plott, Caltech; FCC Staff

12:00 - 8:00 p.m. Registration
7:00 - 9:30 p.m. Gourmet Reception/MPRG Laboratory Open House

Thursday, June 2, 1994

7:00 - 8:30 a.m. Breakfast Buffet in Commonwealth Dining Room
8:30 a.m. Introduction and Welcome:
  President Paul Torgersen, Virginia Tech

9:00 - 9:45 a.m. SESSION I — TUTORIAL IN WIRELESS COMMUNICATION
  Propagation Considerations for Wireless Communications, Ted Rappaport, MPRG, Virginia Tech

9:45 - 10:30 a.m. Single Channel Interference Rejection Techniques for Wireless Communications, Jeffrey Reed, MPRG, Virginia Tech

10:30 - 11:00 a.m. Coffee Break and Poster Session

11:00 - 11:45 a.m. Spread Spectrum Wireless Systems, Brian Woerner, MPRG, Virginia Tech

11:45 - 1:00 p.m. Lunch in Commonwealth Dining Room; Guest Speaker: Kaigharn Gabriel, ARPA

1:00 - 1:30 p.m. Poster Session

1:30-2:00 p.m. SESSION II — DIGITAL SIGNAL PROCESSING AND SPREAD SPECTRUM FOR WIRELESS COMMUNICATIONS

1:30 - 2:00 p.m. CMA Adaptive Array Antenna Using Transversal Filters for Spatial and Temporal Adaptability in Mobile Communications, Nobuyoshi Kikuma, Kazuyuki Hachtori, Fumio Saito, Naoki Inagaki, Nagoja Institute of Technology, Japan

2:00 - 2:30 p.m. Optimum MMSE Equalization for Staggered Modulation, Jerry Tu, Applied Signal Technology, Inc.

2:30 - 3:00 p.m. The Effects of Power Control and Error Correction on the Performance of a Multiple Cell CDMA Cellular Radio System, A. Sathyendran, K. Sowerby, M. Shafii, U. of Auckland, New Zealand

3:00 - 3:30 p.m. Refreshment Break and Poster Session

3:30 - 4:00 p.m. The Design and Development of a Spread Spectrum Digital Cordless Telephone for the Consumer Market, P. Stuckey McIntosh, Garmate Digital Wireless

4:00 - 4:30 p.m. A Principled Framework for Narrow-band Mobile Digital Communications, Michael Fitz, James P. Seymour, Purdue University

4:30 - 5:00 p.m. BER Performance of Adaptive RAKE Receiver Using Tap Weights Obtained by POCs Deconvolution Technique, Shehzad Hussain and B. Gopinath, Rutgers University

5:00 p.m. Conclusion
7:00 - 8:30 p.m. Gourmet Reception/Poster Session/MPRG Laboratory Open House

8:30 p.m. Panel: Impact of Defense Conversion on Wire-
**THE PROPAGATOR**

**Registration**

**Wireless Personal Communications, June 1-3, 1994**

Mail to: Conference Registrar, Donaldson Brown Hotel and Conference Center, Virginia Tech, Blacksburg, VA 24061-0104, phone (703) 231-5182, FAX (703) 231-3746.

please print or type

*Name ___________________________
Social Security Number ___________________________
Title ________________________________
Organization ___________________________
**Organization’s FID# ___________________________
Address ________________________________
City ________________________________
State __________________ Zip ___________
Daytime phone number ___________________________
Signature ________________________________

Registration Fees: (Payable in U.S. currency only)
☐ $375.00 Regular Fee
☐ $325.00 Affiliates of MPRG Fee
☐ $240.00 Full-Time Student Fee***

Make check payable to: Treasurer, Virginia Tech (CEC)
* For more than one person, please include the above information for each person on a separate sheet. For student discount, you must be a full-time registered undergraduate or graduate student.
** Necessary to process a refund payable to a company or agency.
*** Full-time students, have your department head or advisor sign here:

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**Lodging Reservation**

**Wireless Personal Communications, June 1-3, 1994**

Mail to: Front Office Supervisor, Donaldson Brown Hotel and Conference Center, Virginia Tech, Blacksburg, VA 24061-0104, phone (703) 231-8000, FAX (703) 231-3746.

Single or double occupancy* — $55 per night

Arrival Date ___________________________
Departure Date ___________________________
Name ________________________________
Office Phone ___________________________
Address ________________________________
City ________________________________
State __________________ Zip ___________

*Name of Roommate

☐ Hold room for guaranteed late arrival. Check one:
☐ VISA ☐ MasterCard ☐ American Express

Credit card number ___________________________ Expiration Date ___________________________

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Return by May 2, 1994

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Friday, June 3, 1994

7:00 - 8:30 a.m. Breakfast Buffet in Commonwealth Dining Room
8:30 a.m. SESSION III — PROPAGATION
8:30 - 9:00 a.m. A Macrocell Model Based on the Parabolic Diffusion Differential Equation, Jan-Erik Berg, Ericsson Radio Systems AB, Stockholm, Sweden
9:00 - 9:30 a.m. A Nano-Cellular Local Area Network Using Near-Field RF Coupling, Alan Demers, Scott Elrod, Chris Kantargiev, Edward Richley, Xerox Palo Alto Research Center
9:30 - 10:00 a.m. PCS Spectrum Sharing Propagation Measurements, Scott Y. Seidel, D.M.J. Devasirvatham, R.R. Murray, and H.W. Arnold, Bellcore
10:00 - 10:30 a.m. Estimating Regions of Service in Wireless Indoor Communication Systems, Paul M. Cartwright and Kevin Sowerby, U. of Auckland, New Zealand
10:30 - 11:00 a.m. Coffee Break and Poster Session
11:00 - 11:30 a.m. A Distributed Antenna System for In-Building Wireless Communications, Steve Harbin and Kurt Schaubauch, Southwestern Bell
11:30 - 12:00 a.m. Adaptive Propagation Prediction Using Lee’s Model in a Non-Homogeneous Environment, K. Vlahodimitropoulos, Robert Lopez, RAM Communications Consultants, Inc.
12:00 - 12:30 p.m. An Interactive System for Visualizing Wireless Communication Coverage Within Buildings, Manish Panjwani, A. Lynn Abbott, T.S. Rappaport, Virginia Tech; and Jan Haagh, NCR, The Netherlands
12:30 - 2:00 p.m. Lunch in Commonwealth Dining Room
2:00 p.m. SESSION IV — TECHNICAL EVALUATION OF EMERGING MOBILE WIRELESS SYSTEMS
2:00 - 2:30 p.m. Celsat’s Hybrid Personal Communications Systems, David D. Otten, Albert Mallinckrodt, CELSAT, Inc.
2:30 - 3:00 p.m. Influence of Slow Frequency Hopping and Antenna Diversity Techniques in European GSM System, Fabrice de Seze, Alcatel Radiotelephone, France
3:00 - 3:30 p.m. The Mobitex Network Architecture and the Performance of its Radio Link Protocol, Reza Alavi, M. Mobeen Khan, RAM Mobile Data
3:30 - 4:00 p.m. Refreshment Break and Poster Session
4:00 - 4:30 p.m. Performance Analysis of Digital FM in a Simulcast Environment, Rade Petrovic, U. of Mississippi; Walt Roehr, Telecommunication Networks Consulting; and Dennis Cameron, Kunio Tano, METL Technologies
4:30 - 5:00 p.m. Improving Throughput and Availability of Cellular Digital Packet Data (CPDP), Jay M. Jacobson, Pericle Communications Company; Dean Peterson, Steinbrecher Corporation; Ken Miller, Prism Networks, Inc.
5:00 p.m. Conclusion
6:00 p.m. Party and Barbecue at the German Club