Workshop Registration

All workshop functions will be held at the Whispering Pines Conference Center. The workshop registration fee includes breakfast, lunch and break refreshments on Thursday and Friday, dinner on Thursday, a copy of the digest of papers, and the social event (harbor cruise in Newport, RI).

	Advance Registration (postmarked by 5/5/1999)	At Door Registration (after 5/5/1999)
IEEE member	$250	$300
Non member	$310	$370
student	$150	$180

Special Meal Requests: (e.g. vegetarian) _____

IEEE No._____

Make check payable to: IEEE, NATW
(Only checks in US Dollars drawn on a US Bank will be accepted)

Name:_____ Company:_____

Address: _____ Telephone:_____

City:_____State:_____ Fax: _____

Zip Code:_____ Country:_____

E-mail: _____

Send full payment with the above information to:

Prof. E. S. Cooley
Thayer School of Engineering
8000 Cummings Hall
Dartmouth College
Hanover, NH 03755-8000

Phone: 603-646-2807
Fax: 603-646-3856
E-mail: edmond.cooley@dartmouth.edu

Workshop Hotel Information

The Whispering Pines Conference Center has 32 guest rooms for the conference attendees. Rooms have been blocked for the NATW'99 on 5/26 and 5/27 nights. Please contact the conference center early to ensure the room availability. Hotel reservations are the responsibility of the attendee. The cut-off date for guaranteed reservations at the following rate is 5/5/98.

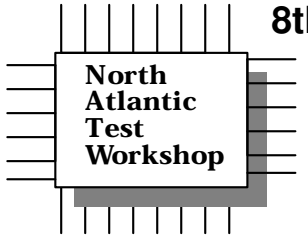
Whispering Pines Conference Center
URI W. Alton Jones Campus
401 Victory Highway
West Greenwich, RI 02817

Phone: 401-397-3361
Fax: 401-397-6540
$107 per night
$33 for Wednesday (5/26) dinner (optional)

Map & Direction to the conference site is available on the back and from our webpage.

Additional Hotel Information

West Greenwich Inn (Best Western) is about 7 miles from the Whispering Pines Conference Center. Their Tel. # is 401-397-5494 and Fax # is 401-397-7185. Their single room rate starts at $105.00 (the off-season rate in May is usually much lower). They are located right at exit 6 off I-95 in West Greenwich. The workshop has no contract with this hotel. This information is provided here as a service to our participants.



8th IEEE North Atlantic Test Workshop

"Reliability and Testing Issues for the 21st Century"
Univ. Rhode Island, W. Alton Jones Campus
West Greenwich, Rhode Island

May 27-28, 1999

General Chair
Jien-Chung Lo -- Univ. R.I.

Program Chair
Xinghao Chen -- IBM

Vice General Chair
Karen Lentz -- Tufts Univ.

Vice Program Chair
S. Athan -- Univ. S. Florida

Finance & Registration
E. S. Cooley -- Dartmouth Coll.

Publications
James C. Daly -- Univ. R. I.

Past Chairs
James Monzel -- IBM
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Program Committee
D. Adams -- IBM
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C. Baron -- INSAT
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M. Bushnell -- Rutgers Univ.
K. Chakrabarty -- Duke Univ.
T. Chakraborty -- Lucent
S. Chakradhar -- NEC
R. Davies -- Compaq (DEC)
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N. K. Jha -- Princeton Univ.
P. K. Lala -- Univ. S. Florida
F. Lombardi -- Northeastern U
Y. Ma -- Advantest America
P. Nigh -- IBM
J. Savir -- NJIT
K. Shepard -- Columbia Univ.
P. Song -- IBM
J. de Sousa -- Lucent
S. Y. Su -- SUNY-Binghampton
J. Tellier -- ORCAD
S. Wu -- Lucent

The IEEE North Atlantic Test Workshop provides a forum for discussions on the latest issues relating to high quality, more economical, and more efficient testing methodologies and designs. The 8th workshop will focus on *"Reliability and Testing Issues for the 21st Century"*.

We are pleased to announce that **Sam Fuller, VP R&D, Analog Devices Inc.**, will deliver a **keynote talk** on the latest issues in testing related research and development efforts for analog VLSI. We are also pleased to announce a panel session focusing on the **analog and mixed-signal testing issues in System on Silicon environment**.

Due to overwhelming responses, this year we expanded to a two-day workshop. A special social event has also been planned which includes a harbor sailboat cruise from Newport, RI.

The workshop will be held at the Whispering Pines Conference Center, located on the W. Alton Jones Campus of the University of Rhode Island. URI's W. Alton Jones Campus is located on 2,300 acres of pristine forest, streams and ponds. It is a 30 minutes drive from Providence, RI, a 1 hour and 30 minutes drive from Boston, MA or Hartford, CT, and a 3 hours drive from New York City, NY.

For general information, please contact:

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To view this advanced program online and see other information regarding this workshop, visit our home page at
http://www.ele.uri.edu/natw99.

The 1999 North Atlantic Test Workshop is sponsored by the **IEEE Computer Society Test Technology Technical Council** and the **University of Rhode Island**.

Thursday, May 27, 1999

[8:00am - 9:10am] Opening Session
Welcome: J. C. Lo, Univ. Rhode Island
Program introduction: X. Chen, IBM
Keynote Speech: *'Testing issues in Research and Development of Analog Devices'*
Samuel Fuller, VP R&D, Analog Devices Inc.

[9:20am - 10:50am] Session 1: Verification and Functional Test
Chair: F. Lombardi, Northeastern Univ.
1.1. *Functional Redesign by Genetic Identification*, L. Ngom, C. Baron* and J.-C. Geffroy, INSA-TLSE, France
1.2. *Application of a TTCN Based Protocol Integrated Testing System on the Transmission Control Protocol*, X. Yin* and J. Wu, Tsinghua Univ., P.R.C.
1.3. *Automated Test Data Generation for Architecture Validation of a Processor's Instruction Set*, A. Manogar, M. M. Babu*, S. Nanda and V. P. Haneefa, Software and Silicon Systems (India)

[11:00am - 12:30am] Session 2: Test Generation
Chair: T. Chakraborty, Bell Labs. Lucent
2.1. *A Successful Effort in Improving the Efficiency of Weighted Random Pattern Test System*, P. Chang*, B. Keller, D. Pruden, IBM
2.2. *Flush Testing of Pipeline Partial Scan Structures - An Industrial Experiment* X. Chen*, T. Snethen, J. Swenton, R. Walther, IBM
2.3. *An Automatic Test Generation Algorithm for Functional Testing at Register Transfer Language Level*, S. Su, SUNY-Binghampton

[12:30am - 1:30pm] Lunch
[1:30pm - 6:30pm] Excursion to Newport, RI
[6:30pm - 7:30pm] Dinner

[7:30pm - 9:00pm] Panel Session
Manufacturing Systems on Silicon (SOC) Containing Mixed Signal Components
Moderator: J. Monzel, IBM
Panelists: E. S. Cooley, Dartmouth College
B. Kaminska, OPMaxx
R. Bulaga, IBM
A. Righter, Analog Devices Inc.

Friday, May 28, 1999

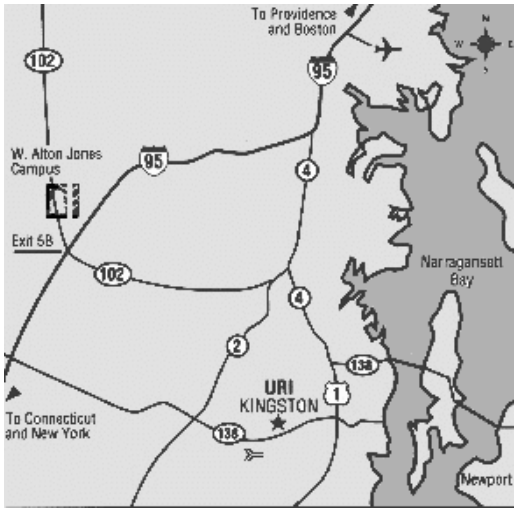
[8:00am - 10:00am] Session 3: Defect and Failure Analysis
Chair: L. Huisman, IBM
3.1. *The Clustering Effect on Defect Level Modeling* J. T. de Sousa, Bell Labs.
3.2. *Diagnosing Interconnects of Random Access Memories* J. Zhao, F. J. Meyer and F. Lombardi*, Northeastern Univ.
3.3. *An Improved Paradigm of Certainty Theory to Solve the Uncertainty Problem in System Diagnosis*, C. Liang*, H. Zhao and W. Shi, Chinese Academy of Sciences
3.4. *High Resolution Diagnostic Techniques for the IBM S/390 Microprocessor* P. Song*, F. Motika, M. Kusko, R. Rizzolo, J. Lee and R. Clairmont, IBM

Friday, May 28, 1999
[10:10am - 12:10am] Session 4: Testing of Cores and System-on-Silicon
Chair: R. Davies, Compaq Computer
4.1. *Test Access Architectures for System-on-a-Chip Designs* K. Chakrabarty, Duke Univ.
4.2. *Standard for Testing Cores, Are We on the Right Boat?* S. Wu, Bell Labs, Lucent
4.3. *Testing Complex System on a Chip ASIC Products Incorporating Video DACs* B. Cowan*, J. Monzel, M. Styduhar, R. Bulaga, L. Brooks, IBM
4.4. *An Observability Register Architecture for Efficient Production Test and Debug* D. Bhavsar and R. Tan*, Compaq Computer Corp.

[12:10am - 1:10pm] Lunch

[1:10pm - 3:10pm] Session 5: BIST and DFT
Chair: K. Chakrabarty, Duke Univ.
5.1. *Reconvergent Fanout Removal Through Partial BIST Insertion* I. G. Harris, U. Mass. at Amherst
5.2. *Built In Self Test of a Quad DCVS ALU: A Case Study* E. S. Cooley* and R. K. Grube, Dartmouth College
5.3. *The Power Bus Stability Problem in Built-In Current Sensor Designs* Y.-Y. Guo* and J.-C. Lo, Univ.. Rhode Island
5.4. *Design and Implementation of a Parallel Weighted Random Pattern and Logic Built In Self Test*, P. Chang, B. Keller and S. Paliwal*, IBM

Whispering Pines Conference Center



The W. Alton Jones Campus in West Greenwich, RI is easy to reach -- just 2.5 miles from Exit 5B off Interstate 95 on Route 102 North. Turn Left onto Brown's Corner Road and follow signs into the campus. The Conference Center is about 0.6miles from the campus entrance.

Newport, RI is located on the lower right-hand corner of the map.

Newport Harbor Cruise

This year's workshop will include an excursion to nearby Newport, RI. We will sail on board a beautiful schooner Madeleine, named after the America's Cup defender of 1876. For more information please visit our website. **The temperature on water is typically 10-degree (F) lower than on land. Be sure to bring warm cloth and/or jacket.**