

UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY  
SCHOOL OF PUBLIC HEALTH - DEPARTMENT OF BIostatISTICS  
*in co-sponsorship with the*  
AMERICAN STATISTICAL ASSOCIATION - NEW JERSEY CHAPTER



SCHOOL OF  
PUBLIC HEALTH

University of Medicine & Dentistry of New Jersey



PRESENTS

## Exploiting sparsity and within-array replications in analysis of microarray data

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### ABSTRACT

Normalization of microarray data is essential for coping with experimental variations and revealing meaningful biological results. We have developed a normalization procedure based on Semi-Linear In-slide Model (SLIM), which adjusts objectively experimental variations and are applicable to both cDNA microarrays and Affymetrix oligonucleotide arrays. We then present methods for validating the effectiveness of different methods of normalization, using within-array replications. We exploit the sparsity in differently expressed genes for normalization and analysis of gene expressions. The significant analysis of gene expressions is based on a variation t-statistic. The P-values are estimated based on a sieved permutation, which explores the sparsity of differently expressed genes. The use of the newly developed techniques is illustrated in a comparison of the expression profiles of neuroblastoma cells that were suppressed by a growth factor, macrophage migration inhibitory factor.

**Friday, February 24, 2006**

Refreshments: 3:30; Seminar: 4:00 – 5:00

UMDNJ-School of Public Health

683 Hoes Lane West, Room 3AB (Third Floor) Piscataway, NJ

(Direction and map attached; or see [http://sph.umdj.edu/campus/NB\\_Pisc.htm](http://sph.umdj.edu/campus/NB_Pisc.htm) )

**Registration** before 02-22: There is no charge for this seminar, but pre-registration is required to reserve a seat.

Please e-mail to: Ms. Patricia Saunders at [SaundePa@umdj.edu](mailto:SaundePa@umdj.edu)

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## Directions to UMDNJ Piscataway Campus

### From the South via the New Jersey Turnpike:

Take exit 9-New Brunswick to Route 18 North through New Brunswick and across the Raritan River. As you cross the bridge, stay in the right lane to take the River Rd exit, which then places you on River Rd. Go half a mile to the third light, and turn right on Hoes Lane. Follow directions from Hoes Lane.\*

### From the Garden State Parkway North or South, or From the North via the New Jersey Turnpike:

Take the GSP north to exit 127 or south to exit 129 to I-287 North; or the New Jersey Turnpike to exit 10 to I-287 North. Take I-287 to the Bound Brook/Highland Park Exit; turn left at the end of the exit onto River Rd. At the third traffic light (about 3 miles) turn left onto Hoes Lane. Follow directions below from Hoes Lane.\*

### From Route 287 Northbound:

From exit 9 Boundbrook/Highland Park, turn left at the end of the exit onto River Rd. At the third traffic light (about 3 miles) turn left onto Hoes Lane. Follow directions from Hoes Lane, West.\*

### From Route 287 Southbound:

From exit 9 Boundbrook/Highland Park, turn right at the end of the exit onto River Rd. At the third traffic light (about 3 miles) turn left onto Hoes Lane. Follow directions from Hoes Lane.\*

### \*From Hoes Lane to Visitor Parking:

Proceed about a mile to a sign for UMDNJ; a short distance later is a sign for Robert Wood Johnson Medical School.

**The School of Public Health** is a brick and glass building on Parking Lot C.  
The seminar is on the third floor.

**Parking Lots A,B,C will be free of charge after 3:00 p.m.  
for participants of this seminar event on February 24, 2006.**

