

Epidemiological Computing and Graphics in Public Health with



Friday, October 30, 8:30am-4pm
UMDNJ School of Public Health
683 Hoes Lane West, Room 2A
Piscataway, NJ 08854

A 1-day course, providing hands-on experience with:

- R basics, and more, for data professionals**
- Real NJ Public Health applications**
- Quality color graphics**

Who Should Attend

Practitioners of epidemiology and statistical computing, with intermediate to advanced skills, who wish to do analysis and graphics in the R language on IBM compatible PCs, MacIntosh, or other computers running Windows NT, 2000, XP, Mac OS, Linux or Unix operating systems.

Background

R is a public domain software package in active development by members of universities, government employees and company staff around the world. Books on R in many application areas are available. With R, the data professional can produce publication-quality graphics with great flexibility, as well as fit epidemiological and statistical models of cutting edge interest. Concepts originated as the S language

at Bell Laboratories. A commercial version exists as the language Splus. An international user conference will be held at the National Institute of Standards and Technology in 2010.

This course will focus on developing programs and applications in R with relevance to public health. [This course appears on the NJLMN List of Courses with Approved 5.75 CE hours.](#) Participants are encouraged to [bring datasets](#) for discussion and graphing. This is an also opportunity to network with other data professionals.

Course Content

Hour 1: Introductions of attendees. Epidemiology and laboratory calculations. Sources of R documentation and software, installation and system considerations. Basics of the R language. Reading data into R, from various file formats including interactively, EPI-INFO, Excel, DBASE, MDB, Oracle, free and fixed format text files. Discussion of three epidemiology packages. ***NEW***

Hour 2: Public health applications and biometric packages. A growth model fitting function for BMI, other body measurements. Wilkinson-Rogers Model notation. Experimental design analyses. Survey analysis. Epidemiological computations. Public Use datasets. LQAS, binary cusum, better Pareto charts. Cholera in Zimbabwe data (personal communication). ***NEW***

Hour 3: Graphical facilities of R. Effective plotting. Importing and exporting of data and graphs. Programming, functions, libraries, including user dialogs, recoding of data, and construction of customized menus. Application development exercises. Base, lattice (trellis) and grammar of graphics packages.

LUNCH BREAK

Hour 4-5: Algorithmic statistics ***NEW*** including recursive partitioning, randomForests, randomSurvivalForests. Regression and Survey analysis examples. Empirical Bayes rate smoothing. Problems and datasets of attendee projects. Future uses and developments of R, including participation in user group, the UseR Conferences. Discussion of student datasets and problems. Intro. to Sweave. ***NEW***

Preparatory Reading/Browsing

R for Beginners by Emmanuel Paradis

R Reference Card by Tom Short

Data Analysis and Graphics Using R: An example-based approach. by John Maindonald and John Braun.

Creating More Effective Graphs by Naomi B. Robbins

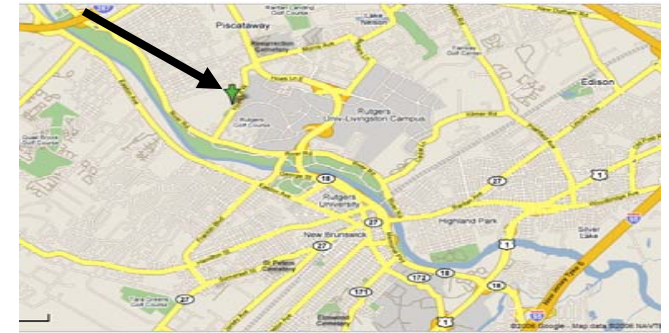
These and other documentation in PDF form are available at the web page <http://cran.r-project.org/other-docs.html>

Faculty

Giles L. Crane, MPH, Research Scientist and Statistician, has extensive experience in statistical computing on a wide variety of computers in the public and private sectors.

Luke Hilgendorff, Course Assistant, is an experienced, public health professional and information technology manager who is retired from the NJ Department of Health and Senior Services.

Location 683 Hoes Lane, Piscataway, Room 2A, 9AM



Tuition

Course tuition is \$35 for NJ Public Health Association (NJPHA) Members and \$45 for non-members of NJPHA. Tuition includes all instructional materials, USB flash drive, continental breakfast, lunch, continuing education credits, and completion certificate. Please make check payable to NJPHA.

Application Please complete the application and mail application and check to:

Mitchel A. Rosen, Director
Office of Public Health Practice
UMDNJ-School of Public Health
683 Hoes Lane West, Room 115
Piscataway, NJ 08854

All applications with check for fee must be received by **Oct. 21, 2009.** Early enrollment is recommended as the class is limited to 20. Prior registration is required for the UMDNJ School of Public Health Site. Acceptances will be sent by email. Participants must pick up Parking Tags on the day at the UMDNJ School of Public Health Office (ground floor). (8 students are required for the class to be held)

APPLICATION FORM
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and Graphics in Public Health with R
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Piscataway, NJ 08854

1. NAME AND ADDRESS OF APPLICANT (Please type or print)

(Dr., Mr., Mrs., Ms., or Miss) (Last) (First) (Middle Initial)

Home (or Office) Address

Applicant's Phone Number

City

State

Zip Code or Country and Postal Code

2. EMPLOYER

Organization

Applicant's Office Phone

Division/Unit

Applicant's FAX Number

Local Address

()

Email (Important)

City

State

Zip Code or Country and Postal Code

3. PROFESSIONAL STATUS

Occupation

Position Title

Length of Time in Position

Brief Description of Your Present (or Expected) Position

4. EDUCATIONAL BACKGROUND (List Degrees)

5. MICROCOMPUTER EXPERIENCE (Software you have used and programming experience if any)

6. EPIDEMIOLOGIC/STATISTICAL COMPUTING TRAINING AND EXPERIENCE

7. PUBLIC HEALTH OR OTHER COMPUTING APPLICATIONS IN PROGRESS OR OF INTEREST

8. YOUR GOALS FOR THIS COURSE (What you hope to gain from the experience)

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Signature of Applicant

Date