

Course Instructor

Julia Chifman, PhD, is a Postdoctoral Fellow in the Department of Cancer Biology at the Wake Forest University School of Medicine and a Visiting Scholar at the Virginia Bioinformatics Institute at Virginia Tech. Since completing her doctorate in mathematics at the University of Kentucky in 2009, her research has focused on systems and evolutionary biology, bioinformatics, genomics, and cancer research. Her research interests include gene expression analysis, systems biology and its application to molecular networks, and the estimation of species-level phylogenies using novel mathematical techniques. She has taught at both the undergraduate and graduate levels, including a course on microarray data analysis at the Wake Forest University School of Medicine.

Course Topics

Topics covered in the one-day short course include:

- Brief introduction to R/Bioconductor software;
- Quality assessment and visualization;
- Preprocessing microarray data including background adjustment, normalization and summarization;
- Differential gene expression analysis;
- Clustering analysis; and
- Gene set enrichment analysis.

Software

This experiential course will use a combination of lectures and computer exercise sessions to show participants how to use bioinformatics and computational tools to analyze gene expression microarray data. Both R and Bioconductor software will be used.

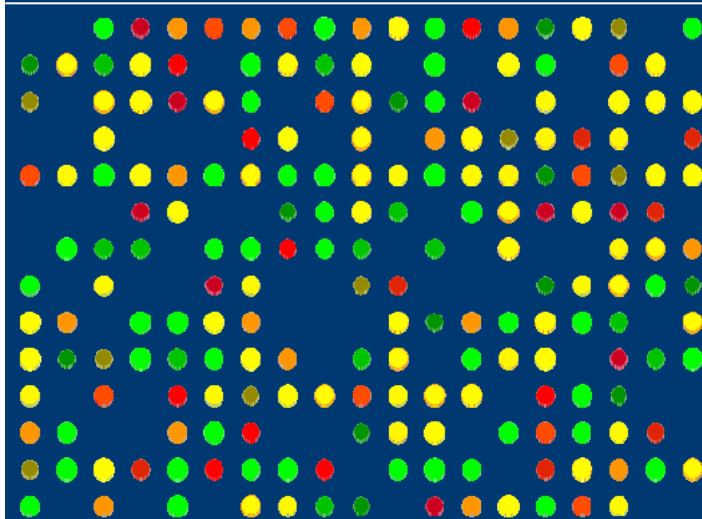
R is an integrated suite of software facilities for data manipulation, calculation and graphical display that can be used for statistical analysis and graphical display. It is available as free software under the terms of the Free Software Foundation's GNU General Public License in source code form. R can be compiled and run on a wide variety of Unix platforms and similar systems, Windows and the Macintosh operating systems.

Bioconductor is an open source, open development software tool for the analysis and comprehension of high-throughput genomic data. It is based primarily on the R programming language. The functional scope of Bioconductor packages includes the analysis of DNA microarray, sequence, flow, SNP, and other data.



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Bioinformatics Short Course

INTRODUCTION TO EXPRESSION MICROARRAY ANALYSIS USING R/BIOCONDUCTOR



Friday, May 2, 2014
9:00 AM — 5:00 PM

Course Location:
Computer Education Center
Lyman Maynard Stowe Library
University of Connecticut Health Center
263 Farmington Ave, Farmington, Conn.

Course Description

This bioinformatics and computational short course offered through the Center for Quantitative Medicine at the UConn Health Center is aimed at University, Hospital and Industry based biomedical and translational researchers, educators, and clinician-scientists who are interested in bioinformatics tools and data analysis methodologies specific to gene expression microarrays, e.g. Affymetrix® or Illumina® platforms. The workshop will include a combination of lectures and hands-on computer activities.

Participants will gain an understanding of the R/Bioconductor environment and expression microarray analysis. At the end of the course, participants will be able to continue their own explorations using the software. The techniques acquired in this short introductory course are applicable to a wide range of microarray data sets.

Bioconductor includes extensive support for analysis of expression arrays and uses the R statistical programming language. Both R and Bioconductor are free open source software.

The bioinformatics techniques, methods and tools needed for data analysis will be explained in detail, making this short course ideal for researchers with no prior bioinformatics experience.

Emphasis will be given to microarrays from the Affymetrix® platform, but if interest and time permits, other microarray platforms will be introduced.

Intended Audience

This educational activity is designed for academic and industry clinicians, researchers and scientists including principal investigators, post-doctoral fellows, research assistants and graduate students who are interested in computational and statistical informatics methods for the analysis of biological and genomic data.

Course Location and Computer Usage

This course will be held in the Computer Education Center (CEC) within the Lyman Maynard Stowe Library at the UConn Health Center using Microsoft Windows-based PCs. A personal computer is NOT needed for the course. Basic computer skills are required. No prior knowledge of the R/Bioconductor is required or assumed.

Registration

Space is limited to 19 registrants on a first-come, first served basis. Save money and register early to guarantee your seat. If you wish to pay by Visa, Mastercard or Discover, you may register by calling UConn Link at 1-800-535-6232 or 860-679-7692, otherwise mail your completed registration with check made payable to the "UConn Health Center" to the address listed on the registration form. Advanced registration only. No onsite walk-in registrations will be permitted.

Confirmations

All registrations are confirmed in writing prior to the event. If you don't receive a confirmation, call 860-679-3075.

Conference Attire

Business casual attire is suggested. Since meeting room temperatures and personal comfort levels vary, it is recommended that you dress in layers and bring a sweater or jacket.

Directions to UConn Health Center

From I-84 East or West, take Exit 39 (if coming from I-84 West, Exit 39 is after 39A). Turn right at the first traffic light onto Route 4 East (Farmington Avenue). At the third traffic light, turn right to enter the UConn Health Center campus. At the first blinking light/stop sign, continue straight. Bear left at the fork and continue up the hill. The main entrance is straight past the second stop sign. Visitor parking is available on the other side of the gate. Once you enter the building, check in with the Hospital information desk for directions to the academic entrance and Lyman Maynard Stowe Library.

Parking

Visitor parking is available near the main hospital entrance. Free valet parking is available to patients and visitors from 6 AM until 6 PM weekdays for those visiting the main building.

Cancelations

Registration includes a \$50.00 nonrefundable registration fee. Should you cancel your registration before April 25 2014, you will be refunded the entire short course fee less \$50. Sorry there are no refunds after 4/25/2014.

For Further Information

Matthew J Cook, MPH, Director, Education & Outreach
Center for Quantitative Medicine
University of Connecticut Health Center
263 Farmington Ave, MC 6029, Farmington, CT 06030-6029
phone: 860-679-3075; fax: 860-679-7522
email: cook@uchc.edu; web: <http://cqcm.uchc.edu>

Registration Form

Intro to Expression Microarray Analysis — May 2, 2014

Sign up for:	Price
<input type="radio"/> Student Registration (copy of valid student ID required with your registration)	\$150.00
<input type="radio"/> Early Bird (call or postmarked by 4/1/2014)	\$300.00
<input type="radio"/> Advance Registration (by 4/25/2014)	\$375.00

Space is limited to 19 participants! Registration includes tuition, course certificate, materials, lunch voucher, afternoon refreshment breaks, and a non-refundable registration fee of \$50.00. Advance registration is required. There is no onsite registration available. Sorry no refunds after April 25, 2014.

Total: _____

Please complete below using BLOCK letters.

First Name	MI	Last Name
Highest professional degree(s) (for course certificate and name tag)		
Organization		
Mailing Address		
City	State	Zip
Daytime Phone Number		
Email address (required to confirm your registration)		

Method of Payment

- Check made payable to the UConn Health Center
 Transfer Voucher (UConn departments only)
 Credit Card: Visa Mastercard Discover

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Credit Card Number

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Expiration Date (MM/YY) CV2/CVV Security Code

Cardholder name as it appears on the credit card		
Cardholder Billing Address		
APT / UNIT / PO Box		
City	State	Zip

I authorize you to charge the total amount listed above to my credit card provided herein. I agree that I will pay for this purchase in accordance with the issuing bank cardholder agreement.

Cardholder Signature	Date
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Please return this registration form with your payment to:
Center for Quantitative Medicine, UConn Health Center
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Fax: 860-679-7522