COURSE DESCRIPTION
The Department of Biostatistics in the School of Medicine will present a short course in biostatistics that is designed especially for health care researchers in the health sciences. This course will consist of three sessions. Sessions I and II will cover basic principles, design of medical research studies, standard statistical tests and data analyses, and data management. Session III will focus on more advanced topics, including multiple linear and logistic regression, survival analysis, longitudinal data and genetic analysis. Registrants may choose to attend Sessions I and II, II and III or I, II and III.

COURSE OBJECTIVES
At the conclusion of this program, participants should be able to:

- Recognize common study designs and statistical methods used in medical research;
- Discuss complex study design and analysis with a statistician;
- Describe basic concepts of data management;
- Identify appropriate use of statistical procedures when given a common study design; and
- Implement simple statistical analyses under the guidance of a statistician.

ACCREDITATION STATEMENT
The Indiana University School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

DESIGNATION STATEMENT
The Indiana University School of Medicine designates this live activity for a maximum of 10.75 AMA PRA Category 1 Credits™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

NOTE
While it offers CME credits, this activity is not intended to provide extensive training or certification activity.

FACULTY DISCLOSURE STATEMENT
In accordance with the Accreditation Council for Continuing Medical Education (ACCMCE) Standards for Commercial Support, educational programs sponsored by Indiana University School of Medicine (IUSM) must demonstrate balance, independence, objectivity, and scientific rigor. All faculty, authors, editors, and planning committee members participating in an IUSM-sponsored activity are required to disclose any relevant financial interest or other relationship with the manufacturer(s) of any commercial product (s) and/or provider(s) of commercial services that are discussed in an educational activity.

COMMERCIAL SUPPORT
This CME activity does not have any commercial support.

LOCATION
The short course will be held at the Health Information and Translational Science Building (HITS), 410 West 10th Street, HS 1110 on the Indiana University Purdue University Indianapolis campus. It is recommended that you park at an IUPUI parking lot and walk or take the People Mover (exit at the IU Health Canal Station) to get to the building. A campus map with the location of the building can be found at http://www.iupui.edu/maps/campusmap_full.pdf. The closest IUPUI parking lots are next to the ETC Building on 10th street (labeled TK on campus map) and at the Gethsemane Church on Martin Luther King Blvd., just south of 10th Street.

FURTHER INFORMATION
Indiana University School of Medicine
Department of Biostatistics
410 W. Tenth Street, Suite 3000
Indianapolis, IN 46202-3002
Ph:(317) 274-2685 • FAX: (317) 274-2678
http://www.biostat.iupui.edu

For other CME offerings, please visit the CME website at http://cme.medicine.iu.edu.
AGENDA for May 12, 13, 14, 2015

SESSION I
Tuesday, May 12, 2015

1:00 p.m. Welcome and Introduction  Hai Liu, Ph.D.
1:10 p.m. Study Design  Susan M. Perkins, Ph.D.

Types of study designs with emphasis on observational studies

2:00 p.m. Hypothesis Testing & Confidence Interval Estimation  Shanshan Li, Ph.D.

Hypothesis test, type I and type II errors, statistical significance vs. practical significance, confidence interval, sample size estimation

2:50 p.m. Break

3:10 p.m. Comparisons of Means  Hai Liu Ph.D.

Paired T-test, group T-test, Wilcoxon, Mann Whitney, one-way ANOVA, multiple comparisons, non-parametric ANDVA, sample size estimation

4:05 p.m. Analysis of Categorical Data  Hai Liu, Ph.D.

Estimation and testing of single proportions, two proportions, tests of association (2x2 table, RxC table), Fisher’s exact test, sample size estimation

5:00 p.m. Adjournment

SESSION II
Wednesday, May 13, 2015

1:00 p.m. Basics of Data Management  Robert L. Davis, B.S.

Database design, form design, data entry

1:55 p.m. Issues in Clinical Trials  Susan M. Perkins, Ph.D.

Design, analysis, interim reviews, ethics, and reporting of clinical trials

2:50 p.m. Break

3:10 p.m. Correlation and Simple Linear Regression  Joanne K. Daggy, Ph.D.

Correlation (Spearman & Pearson), regression, prediction, model evaluation

4:05 p.m. Evaluation of Diagnostic Tests  Shanshan Li, Ph.D.

Sensitivity, specificity, ROC curves, measures of agreement

5:00 p.m. Adjournment

SESSION III  Thursday, May 14, 2015

1:00 p.m. Multiple Linear & Logistic Regression  Joanne K. Daggy, Ph.D.

Interpretation of coefficients, R², odds ratios, logistic regression

1:55 p.m. Analysis of Longitudinal Studies  Ying Zhang, Ph.D.

Longitudinal vs. cross-section studies, cohort effect vs. age effect, examples, ad hoc vs. formal analysis

2:50 p.m. Break

3:10 p.m. Survival Analysis  Ying Zhang, Ph.D.

Censoring vs. failure, Kaplan-Meier curves, log-rank test, proportional hazards model

4:05 p.m. Design of Genetic Studies  Daniel L. Koller, Ph.D.

Review of basic genetics, study designs for gene searching, linkage and association methods based on modern molecular laboratory techniques

5:00 p.m. Adjournment

FACULTY AND STAFF
Indiana University School of Medicine
Indianapolis, Indiana

DEPARTMENT OF BIOSTATISTICS
Joanne K. Daggy, Ph.D.  Associate Professor of Biostatistics
Susan M. Perkins, Ph.D.  Associate Professor of Biostatistics
Robert L. Davis, B.S.  Director of Clinical Data Management
Hai Liu, Ph.D.  Assistant Professor of Biostatistics
Ying Zhang, Ph.D.  Assistant Professor
Shanshan Li, Ph.D.  Associate Professor of Biostatistics

DEPARTMENT OF MEDICAL & MOLECULAR GENETICS
Daniel L. Koller, Ph.D.  Research Assistant Professor of Medical & Molecular Genetics

Biostatistics for Health Care Researchers: A Short Course
May 12, 13, 14, 2015, HITS HS 1110, Indianapolis, Indiana
Enrollment is limited to 30 attendees
PLEASE TYPE OR PRINT BELOW

Last Name  First Name  Middle Initial

School  Department  Division

City  State  Zip Code

Daytime Phone  Fax Number

E-mail Address (Required for CME certificate)

SEND REGISTRATION AND PAYMENT TO:
Indianapolis, Indiana

DEPARTMENT OF MEDICAL & MOLECULAR GENETICS
Research Assistant Professor of Medical & Molecular Genetics

We want everyone to feel welcome at this and other CME events. If you have a disability and need an accommodation to participate in this program, we will try to provide it. Please contact the Biostatistics office at (317) 274-2685 before you come to the event. At least 72 hours notice may be necessary.

Cost

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Method of Payment

- Check enclosed (made payable to Indiana University)
- Indiana University Account Number

Account  Object Code

Account Manager Signature

Send registration and payment to: Indiana University School of Medicine, Department of Biostatistics, 410 W. Tenth Street, Suite 3000, Indianapolis, IN 46202-3002, or fax to: (317) 274-2678. Please send to the attention of Ann Lyon.

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