COURSE DESCRIPTION
The Department of Biostatistics in the School of Medicine and Richard M. Fairbanks School of Public Health 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 (ACCMEE) 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
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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 November 14, 15, 16, 2017

SESSION I

Tuesday, November 14, 2017

1:00 p.m. Welcome and Introduction
Susan M. Perkins, 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
Spencer Lourens, 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
Spencer Lourens, Ph.D.

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

4:05 p.m. Analysis of Categorical Data
Giorgos Bakoyannis, 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, November 15, 2017

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
Giorgos Bakoyannis, Ph.D.

Sensitivity, specificity, ROC curves, measures of agreement

5:00 p.m. Adjournment

SESSION III

Thursday, November 16, 2017

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

Interpretation of coefficients, $R^2$, 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. failute, Kaplan-Meier curves, log-rank test, proportional hazards model

4:05 p.m. Design of Genetic Studies
Leah Wetherill, M.S.

Review of basic genetics, study designs for association and sequence analysis

5:00 p.m. Adjournment

FEE

Attendance at Sessions I and II
$125

Attendance at Sessions II and III
$125

Attendance at Sessions I, II, and III
$150

Enrollment is limited to 30 attendees.

The fee includes handout materials and break refreshments each day. Lunch is not provided, nor is the instructional book.

SUGGESTED INSTRUCTIONAL BOOK

Participants who would like to have additional supplementary information are encouraged to purchase a copy of the book:

Basic and Clinical Biostatistics, 4th edition,

© 2004, by Dawson-Saunders and Trapp, ISBN# 0071410171. The book will be available at the IUPUI Campus Center, Barnes and Noble Bookstore, 420 University Boulevard, Indianapolis, Indiana, 46202. When searching for this optional textbook online or in person at the bookstore, note the class name is BIOSTATS and section number FOR HEALTHCARE.

The bookstore phone number is (317) 278-2665.

FACULTY AND STAFF

Indiana University School of Medicine
Indianapolis, Indiana

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Visiting Faculty

Ying Zhang, Ph.D.
Professor of Biostatistics

DEPARTMENT OF MEDICAL & MOLECULAR GENETICS

Leah Wetherill, M.S.
Applied Statistician II

Biostatistics for Health Care Researchers: A Short Course
November 14, 15, 16, 2017, HITS HS 1110, Indianapolis, Indiana

Enrollment is limited to 30 attendees

PLEASE TYPE OR PRINT BELOW

□ M.D.  □ D.O.  □ Other (please specify)

Last Name First Name Middle Initial

School Department Division

Business Address

City State Zip Code

Daytime Phone Fax Number

E-mail Address (Required for CME certificate)

Hospital/Practice Affiliation/Specialty Status (e.g. faculty, fellow, student)

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) 274-2665 before you come to the event. At least 72 hours notice may be necessary.

Cost

□ Sessions I and II $125

□ Sessions II and III $125

□ Sessions I, II, and III $150

Method of Payment

□ Check enclosed (made payable to Indiana University)

OR

□ Indiana University Account Number

Account

Object Code

Account Manager Signature