SIBS Pittsburgh 2014 Schedule, Week 1 7/23/14 Final

**Goals for Week 1**: Become familiar with the philosophical and ethical issues involved in research with human subjects; create and evaluate appropriate study designs used to collect data to address specific questions; and perform exploratory data analysis appropriate for given study designs and hypotheses. This includes identifying hypotheses, understanding strengths and weaknesses of clinical trials, cohort studies, case-control studies and cross- sectional studies. It also includes obtaining point estimates, interval estimates, and hypothesis testing involving means and proportions, and comparing them across study groups. Student also will understand the basic structure of a scientific paper and the CONSORT guidelines for reporting clinical trials. **Note: we have A425 from 9-5 on M, T, Th, F. We have A215 from 9-5 on Wednesdays, and Posvar 1201 from 1:30-4 on M, T, Th most weeks (and 2-4 on selected days marked below).**

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| **Week 1**  **June 16-20** | **10-12 am** | **1:30-3:30 pm** | **Notes** |
| Monday June 16  2014 | Crabtree A425  **Introductions \*\*start at 9:30 today\*\***  [Sally Morton] Welcome Talk 10-10:30  [Stone] **Overview of SIBS; SIBS 8 survey**  [Wilson, Bertolet] **Review of Course Syllabi** | Crabtree A425  **[Feingold] Human Subjects**  **Case Study (discussion)** | **Arrival on 6/14; Welcome dinner at Joe Mama’s at 7:30 pm** |
| Tuesday June 17  2014 | Crabtree A425  [Wilson] **Review through Case Studies**:  Sampling distributions, 2-sample t-test,   paired t-test, chi-squared test, McNemar’s test | Posvar 1201 [1:30-4 pm]  [Bertolet] **Lab 1: Getting Started with BARI and Stata;** *Download Stata* |  |
| Wednesday June 18  2014 | Crabtree A215 **Seminar Speakers**  [Lewis Kuller] **Overview of Cardiovascular Research** [10-11 am]  [Marnie Bertolet] **Introduction to BARI** | **Posvar 1201** [1:30-4 pm]  [Bertolet] **Lab 2: Review of Statistical Concepts** |  |
| Thursday June 19  2014 | Crabtree A425  [Wilson] **Simple Linear Regression**:   Straight line models and their parameters;   structural and random components; inference  about regression parameters; ANOVA table; R2 | Posvar 1201 [2-4pm]  [Wilson] **Human Subject Protection Certification Lab**  *Turn in Receipt of Policies form to Student Affairs* | Crabtree A-216 [4-5 pm]    **Informal get-together with TAs and graduate student mentors** |
| Friday  June 20  2014 | Crabtree A425  [Wilson ] **Regression with One Continuous Covariate**  Confidence and prediction intervals; assessment of regression assumptions | Crabtree A2425 (1:30-3)  [Bertolet, Stone] **Journal Club**  Reading abstracts and manuscripts;  BARI and CONSORT statement  \*\*Social committee meeting\*\* | **Sat 6/21: Carnegie Museum**  (meet at GSPH at 10 am) |

SIBS Pittsburgh 2014, Week 2

**Goals for Week 2**: Estimate and interpret a best fitting line. Perform exploratory analysis to evaluate key assumptions and utilize appropriate methods when assumptions are violated. Know how to use and interpret categorical predictors, both as main effects and in interactions. Test hypotheses, obtain confidence intervals, and evaluate the fit of an estimated line. Utilize model building techniques to identify appropriate models. Interpret predictors of interest in the presence of potential moderators.

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| **Week 2**  **June 23-27** | **10-12** | **1:30-3:30** | **Notes** |
| Monday June 23  2014 | Crabtree A425  [Brooks] **Experimental and Observational Study  Designs** | Posvar 1201 [1:30-4 pm]  [Stone, Brooks, Feingold, Wahed, Wilson, Kenkre]  **Project Group Meetings:** Descriptions and sign-ups; initial look at project materials |  |
| Tuesday June 24  2014 | [Wilson ] **Multiple Linear Regression**  Outliers and influence. Indicator variables as predictors. Interactions between indicators and continuous predictors | Posvar 1201 [1:30-4 pm]  [Bertolet] **Lab 3: A First Look at Regression** | 4-5 pm [Crabtree A425]  [Roger Day**] Clinical Trial Design: It’s Either in the Cards or the Computer Did It** |
| Wednesday June 25  2014 | Crabtree A215 Seminar Speakers  [Steve Belle/Abdus Wahed] **Study of Viral Resistance to Antiviral Therapy of Chronic Hepatitis C.**  [Abdus Wahed] **Hepatitis C Viral Kinetics** | Crabtree A215  [Wahed, Brooks] **Journal Club**  VIRAHEP-C and adherence |  |
| Thursday June 26  2014 | Crabtree A425  [Wilson] **Model Building** | Posvar 1201 [1:30-4 pm]  [Bertolet ] **Lab 4: Multivariable Regression** |  |
| Friday  June 27  2014 | Crabtree A425  [Wilson] **Model Checking** | Crabtree A215 [1:30-3:30]  **Allegheny County Health Department**  Reverse Field Trip  [Brooks/Stephen Forest] | *Fri: WYEP party, Schenley Plaza 6:45 pm*  **Sat: Film bus tour;** Leave GSPH at 8:45 am  **Sun: 10:30 am; Bach, Beethoven, and Brunch with the Edgewood Orchestra;**  Mellon Park in Shadyside |

SIBS Pittsburgh 2014, Week 3

**Goals for Week 3:** Apply ML estimation to categorical outcome measures (i.e., logistic regression). Perform exploratory data analysis in terms of risk ratios, risk differences and odds ratios. Extend the concepts of model building, effect modification, categorical and continuous covariates, and model evaluation to logistic regression. Identify and control for possible confounding variables. Interpret predictors of interest in the presence of potential confounders and moderators.

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| **Week 3**  **June 30-July 4** | **10-12** | **1:30-3:30** | **Notes** |
| Monday June 30  2014 | Crabtree A425  [Wahed] **Measures of Risk and Association for Dichotomous Outcomes (RR, OR, Intro to Logistic Regression)** | Posvar 1201 [1:30-4 pm]  [Wahed, Brooks, Feingold, Wilson, Kenkre]  **Project Group Meetings** |  |
| Tuesday July 1  2014 | Crabtree A425  [Wahed] **Logistic Regression** | Posvar 1201 [1:30-4 pm]  [Bertolet] **Lab 5:** **Tried the Rest? Now Try the Best! Model Building** | Crabtree A425 [4-5 pm]  Bedda Rosario-Rivera  **Analysis of Brain Imaging Data** |
| Wednesday July 2  2014 | Crabtree A215 **Seminar Speakers**  [Mary Marazita] **Dental Epidemiology Dental Genetics and the COHRA Study**  [Maria Brooks] **Overview of BARI 2D and WISE** | Crabtree A215 (1:30-3)  [Brooks, Wilson] **Journal Club:** Missing Data and BARI 2D Quality of Life analyses | *Three Rivers Regatta 7/2-7/4/2014* |
| Thursday  July 3  2014 | Crabtree A425  [Wahed] **Confounding and Interaction; Stratification**  [Feingold ] Introduction to Genetics; Harfy-Weinberg Equilibrium  **Mid-program survey** | Posvar 1201 [1:30-4 pm]  [Bertolet] **Lab 6:** **Yin or Yang, Life or Death, Yes or No? Binary Outcomes and Logistic Regression** | *Three Rivers Regatta 7/2-7/4/2014* |
| Friday  July 4  2014 | **Happy 4th of July!!!** [no class] | [Feingold] **4th of July Picnic/ BBQ at Eleanor Feingold’s house, 5831 Darlington Rd, Squirrel Hill, at 2 pm** [#61 bus on Forbes Ave]    **Fireworks downtown at dusk** [view from OC lot parking garage] | *Three Rivers Regatta 7/2-7/4/2014*  **Sat. July 5:** [Wilson] **Pittsburgh Zoo and Aquarium** [either carpool or 71B bus]  **Sun July 6:** [Wilson] **Pittsburgh Symphony Orchestra at Hartwood Acres, 8 pm; carpool** [leave dorm around 7 pm] |

SIBS Pittsburgh 2014, Week 4

**Goals for Week 4**: Extend the regression techniques to survival data. Identify key aspects of survival data and perform exploratory data analysis. Estimate and

Interpret hazard ratios. Extend the concepts of model building, effect modification, categorical and continuous covariates, and model assessment and interpretation

of Cox regression.

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| **Week 4**  **July 7– 11** | **10-12** | **1:30-3:30** | **Notes** |
| Monday  July 7  2014 | Crabtree A425  [Wilson] **Introduction to Survival Analysis**  Features of survival data; Kaplan-Meier estimator | Posvar 1201 [1:30-4 pm]  [Wahed, Brooks, Feingold, Wilson, Kenkre]  **Project Group Meetings** |  |
| Tuesday  July 8  2014 | Crabtree A425  [Wilson**] Introduction to Survival Analysis Cont.**  Logrank test; examples | A425 Crabtree 1:30-3 pm  [Sally Morton] **Job Opportunities and Career Development** |  |
| Wednesday  July 9  2014 | Crabtree A215 **Seminar Speakers**  [Lisa Bodnar] **Racial disparities in birth outcomes** [10-11 am]  [Janet Catov] **Pregnancy as a precursor to maternal CVD: opportunities and challenges** [11-noon]  **Class photo:** *Wear/bring your SIBS*  *t-shirt, at Pitt Panther after Seminar* | Crabtree A215 [1:30-3 pm]  [Stone, Brooks] **Journal Club: Propensity Score Adjustment and the Pneumonia PORT study** | Crabtree A215 (3:30-5 pm)  **Panel: Current Students**  [Kelsey Baker, Shannon Woolley, Lei Ye, Andrew Topp, Brian Lynch] |
| Thursday  July 10  2014 | Crabtree A425  [Brooks] **Hazard functions/ratios; Cox regression** | Posvar 1201 [1:30-4 pm]  [Bertolet] **Lab 7**: **Survival** |  |
| Friday  July 11  2014 | *Crabtree A215*  **Panel: Admission to Graduate School**  [Ada Youk, Tom Songer, Satish Iyengar, Ying Ding,Eleanor Feingold] | **Field trip to UPCI** [1:30-3:30]  [Stone] Meet inParran Sall (Desoto St) Lobby at 1:10 pm; wear business casual clothing | **Sunday:White water rafting, Ohiopyle State Park; all-day trip, car pool from dorm at 10 am** [Feingold, Stone, Wilson] |

SIBS Pittsburgh 2014, Week 5

**Goals for Week 5:** Apply survival analysis methods learned in the previous lectures to a dataset from a cancer clinical trial, focusing in answering research questions. Apply previously-introduced statistical methods to problems in genetic epidemiology. Consider statistical issues arising from “genomic” applications that have very large-scale data .

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| **Week 5**  **July 14–18** | **10-12** | **1:30-3:30** | **Notes** |
| Monday July 14  2014 | Crabtree A425  [Wahed] **Survival Case Study**  [Maria Brooks] **Causal Inference** | Posvar 1201 [2-4 pm]  [Bertolet**] Lab 8:** **To Be or Not To Be? Survival Analysis** |  |
| Tuesday July 15  2014 | Crabtree A425  [Feingold ] **Methods for Genetic Association Studies** | Posvar 1201 [1:30-4 pm]  [Wahed, Brooks, Feingold, Wilson, Kenkre] **Project Group Meetings** |  |
| Wednesday July 16  2014 | Crabtree A215 **Seminar Speakers**  [John Grefenstette] **Agent-based Modeling in Public Health**  [Hasan Guclu] **Network Analysis for Health** | Crabtree A215  **1:30-3:00**  **Applied Statisticians Panel**  [Charity Moore, Manuel Lombardero, Dan Winger, Victoria Plamadeala, Sarah Sullivan] | **6 pm**  **“Dogs at the Dorm”** [Megan Marron and friends]  on the green between PA Hall and the Petersen Center |
| Thursday July 17  2014 | Crabtree A425  [Feingold] **Special Topics in Genetic Epidemiology**  [Feingold] **Journal Club: Race and Ethnicity in Genetic Studies** | Posvar 1201 [2-4 pm]  [Bertolet] **Lab 9:** **Is it All in the Genes? Genetic Applications** |  |
| Friday  July 18  2014 | Crabtree A425  [Bertolet] **What the P-value?!?! Reasons I’m a Bayesian and You Should Be Too!**  **SIBS 8 student survey** | [Brooks] **Field Trip to RAND**  Meet in Parran (Desoto St) Lobby at 1 pm; bring photo id; wear office casual clothing | **Sat. 10 am: Nationality Rooms Tour, Cathedral of Learning** [Stone]  **Sat: 7:15 pm-Pirates baseball game and Zambelli fireworks** [Stone] |

SIBS Pittsburgh 2014, Week 6

**Goals for Week 6:** Complete the independent projects. Present work to your peers and turn in extended abstracts. Monday and Tues. are to be scheduled by project team, working around the specified focus group assignments from 1:30-3 on both days

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| **Week 6**  **July 21–25** | **10-12** | **1:30-3:30** | **Notes** |
| Monday July 21  2014 | Crabtree A425  Project group meetings; **Draft abstracts and presentations due to group leader; practice/revise presentations** | Posvar 1201 [2-4 pm]  **Work on project presentations** | 110 Parran [DeArment]  **Focus Group 1**  **(VIRAHEP-C; COHRA)**  1:30-3 pm |
| Tuesday July 22  2014 | Crabtree A425  **Practice/revise presentations (within teams)** | Posvar 1201 [1:30-4 pm]  **Practice/revise presentations (within teams)** | 110 Parran [DeArment]  **Focus Group 2**  **(BARI 2D; WISE)**  1:30-3 pm |
| Wednesday July 23  2014 | Crabtree A215  **Student Presentations**  10-12 am **VIRAHEP-C** | Crabtree A215  **Student Presentations**  1:30-3:30 **COHRA** |  |
| Thursday July 24  2014 | Crabtree A425  **Student Presentations**  10-12 am **BARI 2D** | Crabtree A425  **Student Presentations**  1:30-3:30 **WISE**  **Short class meeting after the presentations** | **Dinner at Grand Concourse, Station Square [**5:30 pm; Stone]  **Gateway Clipper Sightseeing Cruise** [8-9 pm; Stone] |
| Friday  July 25  2014 | **Kennywood Day** [Stone] | **Final gathering at Marnie Bertolet’s house**  [arrive after 5 pm; dinner at 6 pm; Bertolet] | **Depart** on Saturday, July 26  Move out of dorm by 1 pm  **Return room keys!** |