ICPSR Summer Program Workshop
Longitudinal Analysis of Historical Demographic Data
July 18 – August 12, 2011

We meet Monday through Friday from 9:00 am to 5:00 pm in G150B, Perry Building, 330 Packard Street, Ann Arbor. The room will be available for lab use in the evenings.

All readings are required unless marked “Recommended.” The texts for the course will be handed out on the first day of the workshop. Required readings not in the texts will be handed out in course packets. Many required and recommended readings can also be found on the CTools website, LAHDD 2011, at https://ctools.umich.edu/portal. Exercises and instructions about projects will be posted to the website. Participants will work on projects and share their results on the final day of the workshop.

(This syllabus may be revised during the course of the workshop.)

**Week 1**

**Monday (7/18):**

*ORIENTATION*

Deane: Describing (and Visualizing) the Distribution of Failure Times; The Survivor and Hazard Functions; Censoring and Truncation


Gutmann: Family Reconstitution: Person Years & Rates


Leonard: Introduction to the Lab and Stata

*OPENING RECEPTION 5:00 PM-7:00 PM*

*Perry Atrium*
Tuesday (7/19):

Gutmann: The Life Table and Its Analogs

Cleves et al. 2010, Chapter 6, Chapter 8.

*Lunchtime Talk: Kees Mandemakers*
*Michigan Union Kuenzel Room *
*Lunch Provided*

Leonard: Compute Person-Years and Rates: Creating life tables using brute force
Exercise: Mortality Life Tables

Wednesday (7/20):

Gutmann: From Family Reconstitution to Population Registers: Various Kinds of Longitudinal Data

Deane: The Life-Table Method and Life Tables from Grouped Data; Testing Group Differences in Survivor Functions
Cleves et al. 2010, Chapter 8.

Leonard: Build a Mortality Life Table
Exercise: Mortality Life Tables using Stata

Thursday (7/21):

Gutmann: Introduction to the Data Used in the Course: German Villages, French Parishes, Sart (a Belgian Commune), and the Utah Historical Database
Deane: The Cox Proportional Hazards Model; The Genius of Partial Likelihood; Ties
☐ Cleves et al. 2010, Chapter 9.

Leonard: ST functions & Kaplan-Meier curves
ΦExercise: Birth Interval Life Tables

Friday (7/22):

Gutmann: Censoring and Informative Censoring

Deane: Model Building Using stcox: Categorical variables; interactions; centering
☐ Cleves et al. 2010, Chapter 10.

Leonard: Experiments with Informative Censoring
ΦExercise: Simulating the effect of migration on family reconstitution data

*Saturday Afternoon*
*SUMMER PROGRAM PICNIC AT BURNS PARK*

Week 2

Monday (7/25):

Lynch: Understanding Malthus

Deane: Model Building (cont.): Time-varying variables; Testing linear hypotheses
☐ Cleves et al. 2010, Chapter 10.
Alter: A Strategy for Building Episode Files; Basics of Microsoft Access

Exercise: Define tables, enter data, simple queries


Tuesday (7/26):

Lynch: Thinking about “Preventive Checks” in Social Context


Deane: Cox Models: Stratified analysis; shared frailty; Complex survey designs

Cleves et al. 2010, Chapters 9 and 10.

Alter: Simple Queries

Exercise: Occupation code dictionary


Wednesday (7/27):

Lynch: Re-thinking Checks on Population: Fertility and Mortality Patterns within Marriage


Deane: Introduction to Diagnostics: Testing the Proportional-Hazards Assumption

*Cleves et al. 2010, Chapter 11.*

*Lunchtime Talk: George Alter*
*ISR Thompson Room 6050*
*Lunch Provided*

Alter: The Relational Model
ız Exercise: Reconstructing kinship

Thursday (7/28):

Lynch: Household Forms and Family Formation Systems

Deane: Introduction to Diagnostics (cont.): Residuals and Influence Statistics
ız Cleves et al. 2010, Chapter 11.

Alter: Working with Data in MS-Access: Text, Dates
ız Exercise: Matching people on partial names and approximate dates
ız Alexander 2007, pp. 121-147, 159-170, also see Appendix A.

Friday (7/29):

Lynch: Families and Households as Systems of Social Support
Deane: Estimating Power, Sample Size, and Effect Size in Cox Regression Models

Cleves et al. 2010, Chapter 16.

Alter: Working with the Intermediate Data Structure


Week 3

Monday (8/1):

Hacker: Classic Demographic Transition Theory and Recent Critiques


Smith: Introduction to the Utah Population Database – Description, opportunities, and historical and contemporary research capabilities; Historical demographic application and recap essentials of Cox models; Competing risks and Cox models; Multiple potential exits per subject; Identification problem; Independence assumption; Use of covariates


Alter: Understanding SQL: Working with Nulls

Exercise: Finding children without mothers

Tuesday (8/2):

**Hacker: The Mortality and Epidemiological Transitions**


**Smith: Competing risks and Cox Models; Multiple potential exits per subject; Identification problem; Independence assumption; Use of covariates**

- Cleves et al. 2010, Chapter 17

**Alter: Moving from Events to Episodes**

Exercise: Marital Status over Time

Wednesday (8/3):

**Hacker: Fertility Measurement and Natural Fertility**


**Smith: Multiple Events and Cox Models: Sequential events; Multiple events in a group; Marginal models; What is the right clock?**


*Lunchtime Talk: Bertrand Desjardins *

*Perry II Room 2300*

*Lunch Provided*
Longitudinal Analysis of Historical Demographic Data

Alter: Aggregation
Exercise: Count older siblings by sex

Thursday (8/4):

Hacker: The Fertility Transition

Smith: Alternatives to the Cox Model; Common Models; A controversy in Aging and Historical Demography
 Cleves et al. 2010, Chapters 12 and 13.

Alter: Coordinating Episodes Within Households
Exercise: Household composition over time

Friday (8/5):

Hacker: Intergenerational Transmission of Fertility and the Second Demographic Transition
Smith: Parametric Models (Continued): Alternatives to the Cox model; Common models; Plotting fully-adjusted survival curves; Variance adjustments for clustered data; Regression diagnostics including collinearity; A comment on correlated vs. shared frailty

- Cleves et al. 2010, Chapters 9 and 12-14.
- Cleves et al. 2010, Chapters 12 and 13.

Alter: “Time since x” Variables

Exercise: Survival of the preceding child

*Saturday Afternoon *
*SUMMER PROGRAM PICNIC AT BURNS PARK*

Week 4

Monday (8/8):

Kurosu: Issues, Debates, and Sources in East Asian Historical Demography


Deane: Parametric Models: Stratified analysis; Individual (unshared) and shared (group) frailty

- Cleves et al. 2010, Chapter 15.


**Tuesday (8/9):**

**Kurosu: Reproduction and Family Strategies in East Asian Societies**


**Deane: Analysis of Discrete Time Data: The logit model for discrete time; The complementary log-log model for continuous-time processes**


**Wednesday (8/10):**

**Kurosu: Marriage, Household, and Kin Networks in East Asian Societies**


**Deane: Discrete-time Event-history Analysis (Cont.): Data with time-dependent covariates**
*Lunchtime Talk: Samuel Clark*
  * Perry II Room 2300*
  *Lunch Provided*

Alter: Lab

**Thursday (8/11):**

Deane: Preparation for Poster Session  
Alter: Lab – Student Projects

**Friday (8/12):**

Student Reports  
Poster Session – Perry Atrium