

## CURRICULUM VITAE

### *Christopher Rhoads*

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### EDUCATION

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**Northwestern University**, Evanston, IL

Ph.D. in Statistics, March 2008 .

**State University of New York at Stony Brook**, Stony Brook, NY

M.S. in Applied Mathematics and Statistics, 2003.

**Haverford College**, Haverford, PA

B.A. in Philosophy, 1996.

### PROFESSIONAL EXPERIENCE

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**Northwestern University**, Evanston, IL

*Institute of Education Sciences Post-Doctoral Fellow*, with Larry Hedges, April 2008-Present.

### DISSERTATION

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**Title:** Utilizing Prior Information about Covariance Structure in Experiments with Clustering.

I have developed a method that integrates prior information about the covariance structure with data from the experiment in question to create a more powerful test of the effect of the experimental intervention. The test is applicable to any data following a linear model with multivariate normal errors. Hence, among other virtues, the test provides for exact level alpha tests for any unbalanced design with random effects. This test could be utilized in place of other ad-hoc methods that have been proposed in the literature without firm statistical justification. I compare the small sample properties of this test to a number of other tests commonly used by researchers.

### RESEARCH INTERESTS

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Experimental evaluations in education research; Cluster randomized experiments; Experimental design and statistical power; Survey research methods; Missing data; Causal Inference.

### PUBLICATIONS (Peer reviewed)

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Mosnaim, G.H., Rhoads, C., Cohen, M. & Rittner, S. Use of MP3 Players to Increase Asthma Knowledge in Inner-City African-American Adolescents. Forthcoming in *International Journal of Behavioral Medicine*.

Hedges, L. V. & Rhoads, C. (in press). Statistical power analysis. In McGaw, B., Baker, E. & Petereson, P. (Eds.) , *International Encyclopedia of Education*. Oxford: Elsevier.

Hedges, L.V. and Rhoads, C. (under review) Statistical Power Analysis in Special Education Research.

Hedges, L.V. and Rhoads, C. (under review) Statistical Inference in Clustered Designs.

## **WORKING PAPERS**

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Rhoads, C. A Reconsideration of the Implications of “Contamination” for Experimental Design in Education. Northwestern University, 2008.

Rhoads, C. Misunderstandings about “tests” of Missing at Random Assumptions. Northwestern University, 2006.

Rhoads, S., and Rhoads, C. Gender Roles and Infant/Toddler Care: The Special Case of Tenure Track Faculty. University of Virginia, 2005.

## **ABSTRACTS**

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Mosnaim G.S., Rhoads C., Cohen M. “Adolescents' Disease Empowerment and Persistency Technology (ADEPT) increases asthma knowledge among inner city African American teenagers using MP3 Players” in *The Journal of Allergy and Clinical Immunology*, 2007; Vol 119, No. 1, S285; Poster presented at: Annual Meeting of the American Academy of Allergy, Asthma, and Immunology; 2007 Feb 27, San Diego, CA.

## **PRESENTATIONS**

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*Why Gender Neutral Leave Policies May Hurt Women: The Case of Post Birth Leave in Academia.* Midwest Political Science Association Annual Conference, Spring 2004.

*Gender Roles and Gender Neutral Post-Birth Leave.* American Association for Higher Education, Annual Conference, Spring 2003 (co-presenter).

## **STATISTICAL CONSULTING EXPERIENCE (selected)**

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### **Intern Bridge, Inc.** Acton, MA

*Statistical Consultant*, 2008-Present.

Advised company president regarding the analysis of a nationwide online survey of the internship experiences of students at over 400 U.S. colleges and universities.

### **Hu-Friedy**, Chicago, IL

*Statistical Consultant*, 2008.

Provided statistical analysis of an internet survey of dentists for a dental products supply company.

### **Family, Gender and Tenure Project, University of Virginia**, Charlottesville, VA.

*Data Analyst*, 2002-Present.

The Family, Gender and Tenure project was undertaken to examine the nature and utilization of family leave policies in academic institutions nationwide. My responsibilities include maintaining the data set, directing and advising undergraduate research assistants, deciding on new directions for research and performing and interpreting statistical analyses.

### **Sixty-Seven KiloHertz/Lirix**, Evanston, IL.

*Statistical Consultant*, 2004-Present.

Helped to prepare the data analysis section of grant proposals and reports to the Institutional Review Board regarding the progress of grants for studies in adolescent asthma management and adolescent nutrition habits. Analyzed longitudinal data from an experiment designed to improve compliance with medication regimen among inner-city adolescents with asthma. Prepared the statistical methodology section of a paper forthcoming in the *International Journal of Behavioral Medicine*.

**Dr. Elizabeth Margulis, Department of Music, Northwestern University, Evanston, IL.**

*Statistical Consultant, 2005.*

Served as advisor to Dr. Margulis regarding the statistical aspects of her research into how listeners experience silence in music.

## TEACHING EXPERIENCE

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**IES Research Training Institute: Cluster Randomized Trials, Evanston, IL, July 2008.**

*Teaching Assistant.* Advised attendees about statistical design issues relevant to preparing grants proposing to study the efficacy of educational interventions and the evaluation of programs implemented at scale.

**IES Research Training Institute: Cluster Randomized Trials, Nashville, TN, June 2007.**

*Teaching Assistant.* Assisted in training advanced researchers in the education field in methods for the appropriate design and analysis of cluster randomized experiments. Prepared worksheets with instructions about using various common software packages for fitting hierarchical models.

**Northwestern University, Evanston, IL, 2004-2006.**

*Teaching Assistant.* Various statistics classes. Graded assignments and conducted discussion sections.

**Tutoring, Philadelphia, New York, Chicago, 1998-Present.**

I have extensive experience tutoring students ranging from middle school to college age in statistics, mathematics, philosophy, writing and SAT prep.

**Probability and Statistics in the Life Sciences, Stony Brook, NY, 2002-2003**

I taught two semesters of this course to classes ranging in size from 60 to 80 undergraduates. My responsibilities included preparing class lectures, preparing homework and exam questions, advising undergraduate students, and grading exams.

## COMPUTER SKILLS

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- SPSS, SAS, HLM, R, Microsoft Office Products.

## FELLOWSHIPS

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- State University of New York at Stony Brook, VIGRE Fellow, 2001-2003.
- Northwestern University, University Fellow, 2003-2004.

## REFERENCES

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### **Bruce Spencer**

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Northwestern University  
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### **Larry V. Hedges**

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### **Giselle Mosnaim**

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Rush University Medical Center  
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