

## **Division of Biostatistics and Data Coordination (2006/2007)**

### **1. Highlights**

Dr. Naihua Duan joined the faculty at the New York State Psychiatric Institute (PI) and Columbia University on May 1, 2007 to serve as the Director for the Division of Biostatistics.

The Division of Biostatistics and the Data Coordination Center were integrated on October 9, 2007, and renamed as the Division of Biostatistics and Data Coordination, to integrate the research and support in biostatistics and data management. The integrated Division is organized into two research centers: the Biostatistics Research Center (BRC) and the Data Coordination Center (DCC). Dr. Duan serves as the Division Director and Acting Head of the Biostatistics Research Center, assisted by Dr. Howard Andrews as the Deputy Director and the Head of the Data Coordination Center.

During the 2006/2007 Fiscal Year, the Division participated in collaborative research with more than fifty PI investigators, including collaboration on funded grants and centers, grant submissions (n=40), and consultations. The faculty members in the Division published 65 journal articles, books, and book chapters, with another 21 in press, in leading psychiatry, medical, and public health journals, such as *American Journal of Public Health*, *American Journal of Psychiatry*, *Annals of Internal Medicine*, *Archives of General Psychiatry*, and *Medical Care*.

In addition to collaborative research, the Division also conducts high quality methodological research. Among the Division's 86 publications this year, 13 are methodological in nature, published in leading methodological journals, such as *Biometrics*, *Biometrika*, *Health Services Research*, *Journal of American Statistical Association*, and *Statistics in Medicine*.

During this FY, the Division expanded its weekly biostatistics seminar series to serve as a forum of shared learning experience for biostatisticians and PI investigators and research staff who are not biostatisticians but are interested in biostatistics. The seminar series is attended regularly by an audience of thirty to forty, sometimes more, including a group of analysts from the New York State Office of Mental Health in Albany via remote access with webcasting and teleconferencing provided by PI's Technology Information Systems.

### **2. Staff**

Naihua Duan, Ph.D., Division Director and Acting Head for Biostatistics Research Center, Research Scientist VII

Howard Andrews, Ph.D., Deputy Division Director and Head for Data Coordination Center, Research Scientist V

Henian Chen, MD, Ph.D., Research Scientist III

Peter Cross, MSW, Research Scientist III

Steve Ellis, Ph.D., Research Scientist V

Hanga Galfalvy, Ph.D., Assistant Professor of Clinical Neurobiology (in Psychiatry)

Robin Garfinkel, Ph.D., Associate Research Scientist (in Psychiatry)

Lori Hoepner, MPH, Senior Staff Associate

Huiping Jiang, Ph.D., Technical Specialist Level III

R. Todd Ogden, Ph.D., Research Scientist IV

Martina Pavlicova, Ph.D., Assistant Professor of Biostatistics (in Psychiatry)

Yuanjia Wang, Ph.D., Assistant Professor of Biostatistics (in Psychiatry)

### **3. Overview**

The Division of Biostatistics and Data Coordination serves both as a research unit, and as a support unit, in the New York State Psychiatric Institute (PI). As a research unit, the Division conducts primary research in biostatistical and data management methodologies relevant to psychiatric research, and disseminates the findings to PI investigators and the psychiatric research community at large. As a support unit, the Division provides biostatistical and data management support to PI investigators on a wide range of empirical research tasks, including study design, development of research questions and hypotheses, power and sample size analyses, data analysis plan, data monitoring, reliabilities of measures and quality assessment, interim analysis, statistical modeling, data analyses, interpretation of findings, manuscript preparation, and revision. The Division encourages investigators to engage biostatisticians and data managers from the Division as early as possible in their research production process to maximize the potential contributions from the Division to their grant applications in terms of the conceptualization, design, and implementation of the study. The Division also provides training and education in biostatistical and data management methodologies to PI investigators, fellows, residents, and students. In addition, the Division provides training and education to junior members in the Division, to advance their career development and long-term contributions to the New York State Psychiatric Institute and its overall mission.

### **4. Current Research**

During FY 2006/2007, the Biostatistics Research Center (BRC) collaborated on funded grants with the following investigators: Carlos Blanco, Alan Brown, Patricia Cohen, Brian Fallon, Mark George, Roberto Lewis-Fernandez, John Mann, Stefan Mayer, Ned

Nunes, Ramin Parsey, Blair Simpson, Joanna Steinglass, Jonathan Stewart, and Susan Tross.

The BRC supported grant submission for the following investigators for a total of forty grants: Efrat Aharonovich, Evelyn Attia, Beatrice Beebe, Carlos Blanco (4 grants), Allegra Broft, Hyunmi Choi, Susan Essock, Peter Freed, David Hardesty, Christina Hoven (3 grants), Denise Kandel, Diane Klein, Richard Krueger, Elizabeth LeQuesne, Roberto Lewis-Fernandez (2 grants), Jeffrey Lieberman, John Mann, John Mariani, John Markowitz, Laurel Mayer, Ned Nunes, Maria Oquendo, Ramin Parsey, Sapana Patel, Bradley Peterson, Wilfird Raby, Bret Rutherford, Franklin Schneier, Kathy Shear, Joanna Steinglass, Jonathan Stewart, Elizabeth Sublette, Stanislav Vorel, and Tim Walsh.

In addition, the BRC provided consultations to the following investigators: Evaristo Akerele, Paul Amrhein, Adam Bisaga, Aimee Campbel, Davangere Devanand, Abby Fyer, Deborah Hasin, Kimberley Hoagwood, Suresh Krishna, Frances Levin, Gloria Miele, Daniel Pine, Joel Sneed, and Lisa Strug.

The Data Coordinating Center (DCC) provides comprehensive data management and project management services for the following funded projects and research centers.

- HIV Center for Clinical and Behavior Research (P.I. Anke Erhardt): Substance Treatment and Research Services (STARS)
- Washington Heights-Inwood Columbia Aging Project (with the Gertrude Sergievsky Center, P.I. Richard Mayeux):
- Alzheimer's Disease Research Center (with the Taub Institute, P.I. Michael Shelanski):
- Prevention of Alzheimer's Disease with Estrogens (with Mount Sinai School of Medicine, P.I.: Mary Sano).
- Multicenter Vitamin E Trial in Persons with Down Syndrome (with Institute for Basic Research, P.I. Arthur Dalton).
- Traumatic Brain Injury Data Coordinating Center (with Columbia MSPH Biostatistics Department, P.I.: William T. Friedewald)

## **5. Education and Training**

The Division hosted a weekly biostatistics seminar series. During this FY, the Division expanded this seminar series to serve as a forum of shared learning experience for biostatisticians and PI investigators and research staff who are not biostatisticians but are interested in biostatistics. The seminar series is attended regularly by an audience of thirty to forty, sometimes more, including a group of analysts from the New York State Office of Mental Health in Albany attending via remote access webcasting plus teleconferencing provided by PI's Technology Information Systems.

The Division provided mentoring to the following fellows: Deidre Anglin, Allegra Broft, Peter Freed, Elizabeth LeQuesne, Jeff Miller, Rajan Murthy, Sapana Patel, Bret Rutherford, Elizabeth Sublette, and Stanislav Vorel.

## **6. Clinical Services**

N/A

## **7. Awards and Honors**

Dr. Duan received the John M. Eisenberg Article-of-the-Year in *Health Services Research* Award in June 2007, the second time he received this award since its inauguration in 2004.

Dr. Galfalvy received a five-year career development award, “Statistical Methods For Predicting Suicide Attempt,” from NIMH (K25-MH074068) starting July 1, 2006.

Dr. Ogden was appointed to the Committee on Meetings in the American Statistical Association with a three-year term 2007-2010. He also gave an invited 3-day short course on wavelets at the Summer Institute of Applied Statistics at Brigham Young University, June 20–23, 2007.

Dr. Pavlicova gave an invited lecture, “Stats Basic: From Hypothesis to the General Linear Model,” as part of an educational course “Basic fMRI” in the conference Human Brain Mapping held in Chicago, IL, June 10-14, 2007, organized by The Organization for Human Brain Mapping.

Dr. Wang won the 2006 Calderone Prize for Junior Faculty in the Mailman School of Public Health at Columbia University.

## **8. Publications**

Alegria M, Canino G, Shrout PE, Woo M, Duan N, Vila D, Torres M, Chen C, Meng X-L. Dispelling the Myth of the Immigrant Paradox. *American Journal of Psychiatry*. In press.

Bao Y, Duan N, Fox SA. Is some provider advice on smoking cessation better than no advice? An instrumental variable analysis of the 2001 National Health Interview Survey. *Health Serv Res*. 2006 Dec;41(6):2114-35.

Bazargan-Hejazi S, Gaines T, Duan N, Cherpitel CJ. Correlates of injury among ED visits: effects of alcohol, risk perception, impulsivity, and sensation seeking behaviors. *Am J Drug Alcohol Abuse*. 2007;33(1):101-8.

Beebe B, Jaffe J, Buck, K, Chen H, Cohen P, et al. Six-week postpartum maternal self-criticism and dependency and 4-month mother-infant self-and interactive contingencies. *Developmental Psychology*. In press.

- Beebe B, Jaffe J, Chen H, Cohen P. Mother-infant self- and interactive regulation in maternal depression. *Infant Mental Health Journal*. In press.
- Beebe B, Jaffe J, Markese S, Buck, K, Chen H, Cohen P, et al. Microanalysis of mother-infant interaction at 4 months predicts 12-month attachment. *Attachment and human Development*. In press.
- Berkman A, Pilowsky D, Zybert P, Herman D, Conover S, Lemelle S, Cournos F, Hoepner L, Susser E (2007). HIV Prevention with severely mentally ill men: A randomized controlled trial. *AIDS Care* 19:5, 579-588.
- Bing EG, Ortiz DJ, Ovalle-Bahamon RE, Cheng KG, Huang FH, Ernesto F, Duan N. HIV/AIDS Behavioral Surveillance among Angolan Military Men. *AIDS Behav*. 2007 Jul 20; [Epub ahead of print]
- Blanco C, Patel S, Liu L, Jiang H, Lewis-Fernández R, Schmidt A, Liebowitz MR, Olfson M. National Trends in Ethnic Disparities in Mental Health Care. *Archives of General Psychiatry* (in press).
- Brooks RA, Newman PA, Duan N, Ortiz DJ. HIV vaccine trial preparedness among Spanish-speaking Latinos in the US. *AIDS Care*. 2007 Jan;19(1):52-8.
- Chaudhury SR, Grunebaum MF, Galfalvy HC, Burke AK, Sher L, Parsey RV, Everett B, Mann JJ, Oquendo MA. Does first episode polarity predict risk for suicide attempt in bipolar disorder? *J Affect Disord*. 2007 Apr 13. [Epub ahead of print]
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- Chen H, Cohen P, Chen S. Biased odds ratios from dichotomization of age. *Statistics in Medicine*, 2007; 26:3487-3497.
- Chen H, Cohen P, Crawford TN, Johnson JG, Kasen S, Berenson B. Relative impact of young adult personality disorders on subsequent quality of life: Findings of a community-based longitudinal study. *Journal of Personality Disorders*. 2006;20(5):510-523.
- Chen H, Cohen P, Gordon K. Using an econometric model of change points to locate turning points in individual time series. In P. Cohen (Ed.), *Applied Data Analytic Techniques for "Turning Points Research"*. Mahwah, NJ: Lawrence Erlbaum Associates, in press.
- Chen H, Cohen P, Kasen S. Cohort differences in self-rated health: Evidence from a three decade community-based longitudinal study of women. *American Journal of Epidemiology*, 2007;166:439-446.

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- Chen H, Cohen P, Kasen S, Johnson JG, Ehrensaft M, Gordon K. Predicting conflict within romantic relationships during the transition to adulthood. *Personal Relationships*. 2006;13:411-427.
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- Committee on Assessing the Medical Risks of Human Oocyte Donation for Stem Cell Research, Institute of Medicine (Giudice LC, Chair; Davidson EC Jr., Duan N, Harlow BL, Klock SC, LaRosa JH, Racowsky C, Rosenwaks Z, Simpson JL.). *Assessing the Medical Risks of Human Oocyte Donation for Stem Cell Research: Workshop Report*. Washington, D.C.: National Academy Press; 2007.

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