

January 8, 2012

CURRICULUM VITAE

Part I

CONSTANTINE E. FRANGAKIS

PERSONAL DATA

Department of Biostatistics
Bloomberg School of Public Health
The Johns Hopkins University
615 N. Wolfe St., E3642
Baltimore, MD, 21205-2179
(410)502-1936 FAX(410)955-0958
Email: cfrangak@jhsph.edu
Webpage: <http://www.jhsph.edu/biostats/research/frangakis.html>

1320 Wine Spring Lane
Towson, MD, 21204
(410)625-9401

EDUCATION AND TRAINING

1999 Ph.D., Statistics,
Harvard University, Cambridge, Massachusetts

1996 A.M., Statistics,
Harvard University, Cambridge, Massachusetts

1994 B.Sc., Mathematics with Statistics
Imperial College, University of London, London, UK
(first among one hundred)

PROFESSIONAL EXPERIENCE

2008–present Professor, Department of Biostatistics
Bloomberg School of Public Health, The Johns Hopkins University

2004–2008 Associate Professor, Department of Biostatistics
Bloomberg School of Public Health, The Johns Hopkins University

1999– 2004 Assistant Professor, Department of Biostatistics
Bloomberg School of Public Health, The Johns Hopkins University
Baltimore, Maryland 21205

OTHER PROFESSIONAL ACTIVITIES

2003 – 2005 Consultant for CDC anthrax vaccine project.

09/2003-04/2004 Information analyst (service during military leave)

Press Office of the President of Greece

02/2003-09/2003 Software development (service during military leave)
Submarine Headquarters, Salamina naval base, Greece.

EDITORIAL ACTIVITIES

Peer Review Activities:

8/2006-present Associate Editor of *Statistical Science*

9/2005-9/2007 Associate Editor of *Biometrics*

7/2003-7/2009 Deputy Editor of *Clinical Trials*

Reviewer

1997- present *Annals of Statistics, Biometrika, Biometrics,*
Journal of the American Statistical Association, Biostatistics,
New England Journal of Medicine, American Journal of Epidemiology,
Archives of General Psychiatry,
Injury Prevention, Journal of Clinical Epidemiology,
Medical Decision Making, Sociological Methods
and Research, Statistics in Medicine

HONORS AND AWARDS

1999-present Six articles honored with discussion;
the two discussed articles in *Biometrics* (2001, 2007) are among
the less than 20 discussed articles in the journal's 62 year history.

2003 Invited Fellow, Center for Advanced Studies in the
Behavioral Sciences, Stanford University, CA.

2000 H. C. Yang Memorial Faculty Award in Cancer Prevention;
Frangakis was the first Biostatistics faculty to receive this
award for innovation in research for cancer prevention;
The Johns Hopkins Bloomberg School of Public Health
Baltimore, MD

1998 Student Paper Award
International Biometric Society, Eastern North American
Region, Pittsburgh, Pennsylvania

1998 The Herman Chernoff Travel Fund
Department of Statistics, Harvard University
Cambridge, Massachusetts

1997 The Herman Chernoff Travel Fund

Department of Statistics, Harvard University
Cambridge, Massachusetts

- 1994 Sir John William Lubbock Prize in Mathematics
University of London
London, England
- 1994 The Governor's Prize in Mathematics
Imperial College, University of London
London, England
- 1994 The Hyman Levy Memorial Prize in Statistics
Imperial College, University of London
London, England
- 1993 Book Prize in Mathematics
Imperial College, University of London
London, England

PUBLICATIONS

Journal Articles:

(Published or in press)

1. Shinohara, RT, **Frangakis, CE**, Platz, E, and Tsilidis, K. (2011). Designs Combining Instrumental Variables with Case-Control: Estimating Principal Strata Causal Effects. To appear in the *International Journal of Biostatistics*.
2. Peters, ME. et al. (2011). Sertraline for the Treatment of Depression in Alzheimer Disease: Genetic Influences. *Journal of Geriatric Psychiatry and Neurology*. **24** 222–228.
3. Shinohara, RT, **Frangakis, CE**, and Lyketsos, CE. (2011). A broad symmetry criterion for nonparametric validity of parametrically-based tests in randomized trials. *Biometrics* (epub ahead of print).
4. Azur MJ, Stuart EA, **Frangakis CE**, Leaf PJ. (2011). Multiple Imputation by Chained Equations: What is it and how does it work ? *International Journal of Methods in Psychiatric Research* **20** 40–49.
5. Koliatsos VE et al. (2011). A mouse model of blast injury to brain: initial pathological, neuropathological, and behavioral characterization. *Journal of Neuropathology and Experimental Neurology* **70** 399–416.
6. Go VF, **Frangakis C**, Van Nam L, Sripaipan T, Bergenstrom A, Li F, Latkin C, Celentano DD, Quan VM. (2011). Characteristics of high-risk HIV-positive IDUs in Vietnam: implications for future interventions. *Substance Use and Misuse* **46** 381–389.
7. **Frangakis CE**, Geschwind JF, Kim D, Chen Y, Koteish A, Hong K, Liapi E, Georgiades CS. (2010). Chemoembolization Decreases Drop-Off Risk of Hepatocellular Carcinoma Patients on the Liver Transplant List. *Cardiovasc Intervent Radiol*. (epub ahead of print).
8. Achy-Brou AC, **Frangakis CE**, Griswold M. (2010). Estimating Treatment Effects of Longitudinal Designs using Regression Models on Propensity Scores. *Biometrics* **66** 823–833.
9. Georgiades et al. (2010). Development of a research agenda for percutaneous renal tumor ablation: proceedings from a multidisciplinary research consensus panel. *Journal of Vascular and Interventional Radiology* **21** 1807–1816.
10. Drye L, Martin B, **Frangakis CE**, Meinert C, Mintzer J, Munro C, Porsteinsson A, Rabins P, Rosenberg P, Schneider L, Weintraub D, Lyketsos C, for the DIADS-2 Research Group. (2010). Do treatment effects vary among differing baseline depression criteria in Depression in Alzheimer’s Disease Study - 2 (DIADS-2)? *International Journal of Geriatric Psychiatry* (Epub ahead of print).

11. Rosenberg, PB, Drye, LT, Martin, BK, **Frangakis, CE**, Mintzer, JE, Weintraub, D, Porsteinson A, Schneider, LS, Rabins, PV, Munro, CA, Meinert, CL, Lyketsos CG. (2010). Sertraline for the treatment of depression in Alzheimers Disease. *American Journal of Geriatric Psychiatry* **18** 136–145.
12. Weintraub, D, Drye, LT, Martin, BK, **Frangakis, CE**, Mintzer, JE, Rosenberg, PB, Porsteinson A, Schneider, LS, Rabins, PV, Munro, CA, Meinert, CL, Lyketsos CG. (2010). Sertraline for the treatment of depression in Alzheimers Disease: Week-24 outcomes. *American Journal of Geriatric Psychiatry* **18** 332-340.
13. Wible BC, Rilling WS, Drescher P, Hieb RA, Saeian K, bf Frangakis C, Chen Y, Eastwood D, Kim HS. (2010). Longitudinal quality of life assessment of patients with hepatocellular carcinoma after primary transarterial chemoembolization. *Journal of Vascular and Interventional Radiology* **21** 1024–1030.
14. An, MW, **Frangakis, CE**, Musick, BS, and Yiannoutsos, CT. (2009). The need for double-sampling designs in survival studies: an application to monitor PEPFAR. *Biometrics* **65** 301-306.
15. Tan EJ, Rebok GW, Yu Q, **Frangakis CE**, Carlson MC, Wang T, Ricks M, Tanner EK, McGill S, Fried LP. (2009). The long-term relationship between high-intensity volunteering and physical activity in older African American women. *J Gerontol B Psychol Sci Soc Sci* **64** 304-311.
16. Postolache TT, Mortensen PB, Tonelli LH, Jiao X, **Frangakis C**, Soriano JJ, Qin P. (2009). Seasonal spring peaks of suicide in victims with and without prior history of hospitalization for mood disorders. *J Affect Disord.* (Epub ahead of print).
17. **Frangakis, CE**. (2009). The calibration of treatment effects from clinical trials to target populations. *Clinical Trials* **6**, 136-140.
18. Stuart EA, Azur M, **Frangakis C**, Leaf P. (2009). Multiple imputation with large data sets: a case study of the Children’s Mental Health Initiative. *Am J Epidemiol.* **169**, 1133-1139.
19. Yiannoutsos CT, An MW, Frangakis CE, Musick BS, Braitstein P, Wools-Kaloustian K, Ochieng D, Martin JN, Bacon MC, Ochieng V, Kimaiyo S. (2009). Sampling-based approaches to improve estimation of mortality among patient dropout: experience from a large PEPFAR-funded program in Western Kenya. *Plos One* **3**(12), e3843.
20. Cole, SR, and **Frangakis, CE**. (2009). On the consistency statement in causal inference: a definition or an assumption? *Epidemiology* **20** 3–5.
21. Kostakos, AT, Macheras, GA, **Frangakis, CE**, Stafilas, KS, Baltas, D, and Xenakis TA. (2008). Migration of the trabecular metal monoblock acetabular cup system: a 2-year follow-up using the EBRA method. *Journal of Arthroplasty*.

22. Buijs, M, Vossen, JA, **Frangakis, CE**, Hong, K, Georgiades, C, Chen, Y, Liapi, E, and Geschwind, JF. (2008). Long-term toxicity in patients with unresectable hepatocellular carcinoma treated with Transarterial Chemoembolization: a single center experience. *Radiology* **249**, 346–354.
23. **Frangakis, CE**, Rubin, DB, An, MW, MacKenzie, E. (2007). Principal stratification designs to estimate input data missing due to death. *Biometrics*, (with discussion) **63**, 641–662.
24. Baker, SG, **Frangakis, CE**, and Lindeman KS. (2007). Estimating efficacy in a proposed randomized trial with initial and later noncompliance. *Journal and the Royal Statistical Society, Series C* **56** 2, 211-221.
25. Segal JB, Griswold M, Achy-Brou A, Herbert R, Bass EB, Dy SM, Millman AE, Wu AW, **Frangakis CE**. (2007). Using Propensity Scores Subclassification to Estimate Effects of Longitudinal Treatments: An Example Using a New Diabetes Medication. *Medical Care* **10**, S149–S154.
26. Roland C, Varadhan R, and **Frangakis CE** (2007). Squared polynomial extrapolation methods with cycling: an application to the positron emission tomography problem. *Numerical Algorithms* **44**, 159–172.
27. **Frangakis, CE** and Wu, H. (2007). The geometry of inadmissibility of independent observations for estimating a single parameter in two-parameter ordered symmetric problems. *Metron* **65**.
28. Huang IC, **Frangakis, CE**, Atkinson, MJ, Willke, RJ, Leite, WL, Vogel, WB, and Wu, AW (2008). Addressing Ceiling Effects in Health Status Measures: A Comparison of Techniques Applied to Measures for People with HIV Disease *Health Services Research* **43**, 327–339.
29. Huang IC, Willke, RJ, Atkinson, MJ, Lenderking, WR, **Frangakis, C** and Wu, AW (2007). US and UK versions of the EQ-5D preference weights: Does choice of preference weights make a difference? *Quality of Life Research* **16**, 1065–1072.
30. Terzidis A, Koutroumpa A, Skalkidis I, Matzavakis I, Malliori M, **Frangakis CE**, DiScala C, Petridou ET. (2007). Water safety: age-specific changes in knowledge and attitudes following a school-based intervention. *Injury Prevention* **13**, 120-124.
31. Farmakakis T, Dessypris N, Alexe DM, **Frangakis C**, Petoussis G, Malliori M, Petridou TE. (2007). Magnitude and object-specific hazards of aspiration and ingestion injuries among children in Greece. *Int J Pediatr Otorhinolaryngol.* **71**, 317-24
32. Georgiades, CS, Liapi, E, **Frangakis, CE**, Park, J, Kim, HW, Hong, K, and Geschwind, JFH (2006). Prognostic accuracy of 12 liver staging systems in patients with unresectable hepatocellular carcinoma treated with transarterial chemoembolization. *J Vasc Interv Radiol* **17**, 1619–1624 (with discussion on method in **18**, 455–456).

33. Martin, BK, **Frangakis, CE**, Rosenberg, PB, et al. (2006). Design of Depression in Alzheimer's Disease Study-2. *American Journal of Geriatric Psychiatry* **14**, 920–930.
34. Li, F and **Frangakis, CE** (2006). Polydesigns in causal inference. *Biometrics* **62**, 343–351.
35. **Frangakis, CE** (2006). Discussion of article by A Forcina on “Causal effects in the presence of non-compliance: a latent variables approach”. *Metron* **64**.
36. Dassopoulos, T, **Frangakis, CE**, Cruz-Correa, M, Talor, MV, Burek, CL, Nouvet, F, Bayless, TM, Brant, SR. (2006). Antibodies to *Saccharomyces cerevisiae* in Crohn's disease: Higher titers are associated with a greater frequency of mutant NOD2/CARD15 alleles and with a higher probability of complicated disease. *Inflammatory Bowel Diseases* **13**, 143–151.
37. Vlahos, NF, Lipari, C, Bankowski, B, Lai, TH, King, J, Shi, IM, **Frangakis, K**, and Zhao, Y. (2006). The effect of luteal phase support on endometrial L-Selectin ligand expression following ovarian stimulation with recFSH and Ganirelix Acetate. *J Clin Endocrinol Metab* **91**, 4043–4049.
38. Doan, BQ, **Frangakis, CE**, Shugart, YY, and Bailey-Wilson, JE. (2006). Application of the propensity score in a covariate-based linkage analysis of the collaborative study on the genetics of alcoholism. *BMC Genetics* **6**, S33.
39. Go, V, **Frangakis, CE**, Van Nam, L, Bergenstrom, A, Sripaipan, T, Zenilman, JM, Celenzano, DC, Minh Quan, V. (2006). High HIV sexual risk behaviors and STD prevalence among IDUs in northern Vietnam: implications for a generalized HIV epidemic. *Journal of Acquired Immune Deficiency Syndromes* **42**, 108–115.
40. Doan, BQ, Sorant, AJM, **Frangakis, CE**, Bailey-Wilson, JE, Shugart, YY. (2006) Covariate-based linkage analysis: Application of a propensity score as the single covariate consistently improves power to detect linkage. *European Journal of Human Genetics* **14**, 1018–1026.
41. Huang, IC, **Frangakis, CE**, and Wu, AW. (2006). The relationship of excess body weight and health-related quality of life (HRQOL): evidence from a population study in Taiwan. *International Journal of Obesity* **30**, 1250–1259.
42. Huang, IC, Wu, AW, and **Frangakis, CE**. (2006). Do the SF-36 and WHOQOL-BREF measure the same constructs ? Evidence from the Taiwan population. *Quality of Life Research* **15**, 15–24.
43. Li, F and **Frangakis, CE** (2005). Designs for partially controlled studies: messages from a review. *Statistical Methods in Medical Research* **14**, 417–431.
44. Papadopoulos, FC, **Frangakis, CE**, Skalkidou, A, Petridou, E, Stevens, RG, Trichopoulos, D. (2005). Exploring lag and duration effect of sunshine in triggering suicide. *Journal of Affective Disorders*, **88** 287–297.

45. Mock, V, **Frangakis, CE**, et al. (2005). Exercise manages fatigue during breast cancer treatment: A randomized controlled trial. *Psycho-oncology* **14**, 464–477.
46. Matzavakis, I, **Frangakis, CE**, Charalampopoulo A, Petridou E. (2005). Burn injuries related to motorcycle exhaust pipes: a study in Greece. *Burns*, **31**, 372–374.
47. Huang, IC, **Frangakis, CE**, Dominici, F, Diette, GB, Wu, AW. (2005). Application of a propensity score approach for risk adjustment in profiling multiple physician groups on asthma care. *Health Services Research* **40**, 253–278.
48. Huang , IC, Dominici , F, **Frangakis, CE**, Diette, G, Damberg, CL, and Wu, AW (2005). Is risk-adjustor selection more important than statistical approach for provider profiling? Asthma as an example. *Medical Decision Making*, **25**, 20–34.
49. Huang IC, Diette GB, Dominici F, **Frangakis CE**, Wu AW. (2005). Variations of physician group profiling indicators for asthma care. *American Journal of Managed Care*, **11**, 38–44.
50. **Frangakis, CE**, Brookmeyer, RS, Varadhan, R, Mahboobeh, S, Vlahov, D, and Strathdee, SA. (2004). Methodology for evaluating a partially controlled longitudinal treatment using principal stratification, with application to a Needle Exchange Program. *Journal of the American Statistical Association*, **99** 239–249.
51. **Frangakis, CE** and Varadhan, R. (2004). Systematizing the evaluation of partially controlled studies using principal stratification: from theory to practice. *Statistica Sinica* **14**, 945–947.
52. Varadhan, R, and **Frangakis, CE** (2004). Revealing and addressing length-bias and heterogeneous effects in frequency case-crossover studies. *American Journal of Epidemiology* **159**, 596–602.
53. Petridou E, Dessypris N, **Frangakis, CE**, Belechri M, Mavrou A, Trichopoulos D. (2004). Estimating the population burden of injuries: a comparison of household surveys and Emergency Department surveillance. *Epidemiology*, **15**, 428–432.
54. Papadopoulos CF, Petridou E, **Frangakis CE**, Farmakakis T, Moller H, Rider G (2004). Switching to Euro: still hard to swallow ? *Archives of Diseases in Childhood* (with editorial), **89**, 382–383.
55. Barnard, J, **Frangakis***, **CE**, Hill*, JL, and Rubin, DB (2003). A Principal Stratification approach to broken randomized experiments: a case study of School Choice vouchers in New York City. (*Co-corresponding authors). *Journal of the American Statistical Association* (with discussion), **98**, 299-323.
56. Lyketsos, CG, DelCampo, L, Steinberg, M, Miles, Q, Steele, RN, Munro, C, Baker AS, Sheppard, JME, **Frangakis, CE**, Brandt J, and Rabins, PV. (2003). Treating depression in

Alzheimer's disease: Efficacy and safety of sertraline, and the benefits of depression reduction. *Archives of General Psychiatry*, **60**, 736–746.

57. **Frangakis, CE**, Rubin, DB, and Zhou, XH. (2002). Clustered encouragement design with individual noncompliance: Bayesian inference and application to Advance Directive Forms. *Biostatistics* (**with discussion**), **3**, 147–164.
58. **Frangakis, CE**, and Rubin, DB (2002). Principal stratification in causal inference. *Biometrics*, **58**, 21–29.
59. **Frangakis, CE**, and Varadhan, R (2002). Confidence intervals for seasonal risk, with null values on the boundary. *Epidemiology*, **13**, 734–737.
60. Petridou, E, Papadopoulos, FC, **Frangakis, CE**, Skalkidou, A, and Trichopoulos, D. (2002). A role of sunshine in the triggering of suicide. *Epidemiology*, **13**, 106–109 (**with discussion** 492-494).
61. **Frangakis, CE**, and Baker, SG (2001). Compliance sub-sampling designs for comparative research: estimation and optimal planning. *Biometrics*, **57**, 899–908.
62. **Frangakis, CE**, and Rubin, DB (2001). Addressing the idiosyncrasy in estimating survival curves using double-sampling in the presence of self-selected right censoring. *Biometrics* (**with discussion**), **57**, 333–353.
63. Rubin, DB, and **Frangakis, CE** (1999). Comment on “Estimation of the causal effect of a time-varying exposure on the marginal mean of a repeated binary outcome” by JM Robins, S Greenland, and FC Hu. *Journal of the American Statistical Association*, **94**, 702–704.
64. **Frangakis, CE**, and Rubin, DB (1999). Addressing complications of intention-to-treat analysis in the presence of all-or-none treatment-noncompliance and subsequent missing outcomes. *Biometrika*, **86**, 365–379.
65. Petridou, E, Zavitsanos, X, Dessypris, N, **Frangakis, CE**, Mandyla, M, Doxiadis, S, and Trichopoulos, D (1997). Adolescents in high-risk trajectory: clustering of risky behavior and the origins of socioeconomic health differentials. *Preventive Medicine*, **26**, 215–219.

Book Chapters and Proceedings:

1. **Frangakis, CE** (2004). Principal Stratification. Chapter in “Applied Bayesian Modelling and Causal Inference from Incomplete-Data Perspectives”, Gelman, A and Meng, XL (eds). New York: Wiley.
2. Fan, L, **Frangakis, CE**, and Varadhan, R (2004). Polydesigns in causal inference. In: *American Statistical Association, Proceedings of the Biopharmaceutical Section*.
3. Barnard, J, **Frangakis, CE**, Hill, JL, and Rubin, DB (2002). School Choice in NY City: A Bayesian Analysis of an Imperfect Randomized Experiment. *Case Studies in Bayesian Statistics, V 5 (with discussion)*, Gatsonis et al. (eds). New York: Springer-Verlag, 3–97 (after selection).
4. **Frangakis, CE**, and Rubin, DB. (2000). The defining role of “principal causal effects” in addressing post-treatment variables and surrogate endpoints in causal inference. Invited paper, in: *American Statistical Association, Proceedings of the Epidemiology Section (with discussion)*, 23–32.
5. **Frangakis, CE**, and Rubin, DB (1999). On double-sampling survival data under selective right censoring. In: *American Statistical Association, Proceedings of the Biometrics Section*, 180–185.
6. **Frangakis, CE**, Rubin, DB, and Zhou, XH (1998). Analyzing the clustered encouragement design: the central role of modeling. In: *American Statistical Association, Proceedings of the Biometrics Section*, 71–79.
7. **Frangakis, CE**, and Rubin, DB (1997). A new approach to the idiosyncratic problem of drug-noncompliance with subsequent loss to follow-up. In: *American Statistical Association, Proceedings of the Biopharmaceutical Section*, 206–211.

CURRICULUM VITAE

Part II

CONSTANTINE E. FRANGAKIS

TEACHING

Doctoral advisees:

Ming-Wen An (PhD, 2008) Assistant Professor (tenure-track) at Vassar College (9/08)
Aristide Achy-Brou (PhD, 2008) Assistant manager, JP Morgan (9/08)
Fan Li (PhD, 2006) Assistant Professor, Dept of Statistics, Duke University (tenure
-track, 9/08)
Ravi Varadhan (PhD, 2005) Assistant Professor (tenure-track), Johns Hopkins Medicine (9/05)
Elizabeth Johnson (PhD, 2008, Assistant Professor, Johns Hopkins School of Medicine
co-adviser)

PhD thesis Committee:

Alison Gernard, International Health, 2008
Aristide Achy-Brou, Biostatistics, 2007-2008
Ming-Wen An, Biostatistics, 2005-2008
Elizabeth Johnson, Biostatistics 2007-2008
Steffen Reinhold, Economics, 2007
Weiwei Wang, Biostatistics, 2007
Yi Huang, Biostatistics, 2006
Valerie Harder, Mental Health, 2006-2007
Fan Li, Biostatistics, 2002-2006
David Cohen, Biostatistics, 2006
Ekaterini Malliou, International Health, 2006-present
Konstantinos Tsilidis, Epidemiology, 2006-present
Hui Jin, Statistics, Harvard University, 2005
Christine Szekely, Epidemiology, 2005
Ravi Varadhan, Biostatistics, 1999-2005
Xianghua Luo, Biostatistics, 2005
Betty Doan, Epidemiology, 2004
Amy Windham, Mental Health, 2002

Steven Holden, Economics, 2000

Preliminary Oral Participation:

Chanelle Howe, Epidemiology, 2007

Aristide Achy-Brou, Biostatistics, 2007

Valerie Harder, Mental Health, 2006

Konstantinos Tsilidis, Epidemiology, 2006

Ekaterini Malliou, International Health, 2006

Betty Doan, Epidemiology, 2004

Fan Li, Biostatistics, 2003

Eugene Millar, International Health, 2002

Erika Avila Tang, Epidemiology, 2001

Leena Choi, Biostatistics, 2001

Laura Podewils, Epidemiology, 2001

Judy H. Ng, Health Policy and Management, 2002

Ravi Varadhan, Biostatistics, 2001

*Advising, Mentoring and Teaching
Recognition Award*

Johns Hopkins Bloomberg School of
Public Health, 2005.

Classroom Instruction:

| | |
|--|---|
| 2005-present | Advanced Statistical Theory (140.771-2), Johns Hopkins Bloomberg School of Public Health |
| 2005-present (and 2000-2002) | Experimental and non-experimental designs for estimating causal effects (140.665; formerly "Causal inference"), Johns Hopkins Bloomberg School of Public Health |
| 2002 (primary) 2007-present (co-instructor) | Introduction to Statistical Theory (140.673-4), Johns Hopkins Bloomberg School of Public Health |
| 1998,1999 | Causal Inference in the Social and Biomedical Sciences (Statistics 214), invited lecturer, (primary instructor: Rubin, DB.), Harvard University |

Workshops and Short Courses:

co-Organizer, speaker , Symposium on Economics and Biostatistics, Johns Hopkins University, 2007.

co-Organizer, speaker , Symposium on Economics and Biostatistics, Johns Hopkins University, 2006.

co-Organizer , Symposium on causal inference, Johns Hopkins Bloomberg School of Public Health, January 9, 10 2006.

“Causal inference for longitudinal outcomes in randomized studies with high mortality rates”, (with Dan Scharfstein and Ming Wen An), Johnson and Johnson, September 20, 2006.

“Causal inference using potential outcomes: an introduction and new challenges”, Perugia, Italy, 2005.

“The synergy of ‘principal stratification’ controls and historical controls to evaluate longitudinal partially controlled factors: principles, and application in evaluating the Baltimore Needle Exchange program”, **invited**, FDA/Industry Workshop September 22-23, 2004.

“Evaluating the impact of the Baltimore Needle Exchange Program (NEP) on HIV incidence: using distance of NEP sites from the drug-users as the controlled factor, and the method of principal stratification.” at the National Cancer Institute, **invited**, NIH, Bethesda, MD, 2001.

“Causal Inference.” Full day course given by Dr. Frangakis, **invited**, the U.S. Food and Drug Administration, 2001.

“Case-crossover as case-only designs: using, revealing, and addressing length-bias under null, and heterogeneous effect periods.” Department of Epidemiology, Johns Hopkins University, Baltimore, MD, 2001.

“The method of principal effects for comparing treatments using post-treatment variables.”, Society of Clinical Trials Pre-Conference Workshop, Denver, Colorado, 2001.

RESEARCH GRANT PARTICIPATION (selected)

| Title | PI | Type;Sponsor | Dates | Effort |
|---|---------------------|----------------------------------|-----------------|---------------------------|
| Statistical Designs and Methods for Partially Controlled HIV/AIDS Studies | CE Frangakis | R01;NIDA (NIH) | 07/2007-06/2011 | 35% (total : \$1,245,000) |
| Statistical Methods for Partially Controlled Studies | CE Frangakis | R01;NEI (NIH) | 05/2002-04/2008 | 40% (total : \$975,000) |
| Center for Prevention and Early Intervention | N Ialongo | R01;NIMH (NIH) | 06/2004-05/2009 | 15% |
| Depression in Alzheimer's Disease | CG Lyketsos | R01;NIMH (NIH) | 06/2003-02/2008 | 10% |
| Experience Corps Trial | L Fried | P01;NIA (NIH) | 07/2006-06/2011 | 15% |
| Disparities Among Children Served by the CMHS Children Services' Program | P Leaf | R01;NIMH (NIH) | 08/2006-07/2007 | 10% |
| Prevention Intervention Trial in Northern Vietnam | V Go | R01;NIH | 09/2002-06/2007 | 10% |
| Transportation Safety Data | S Teret | BTS | 05/2001-01/2002 | 47% |
| Oncology | V Mock | Onc. Nursing Foundation | 07/2001-12/2001 | 8% |
| Designs and analyses to address deviations from protocol in studies in cancer | CE Frangakis | Innovation Fund (Johns Hopkins) | 05/2000-6/2001 | 15% |
| Statistical Methods in AIDS Research | R Brookmeyer | NICHD (NIH) | 8/1999-7/2002 | 25% |
| Analytical Methods for Observational Drug User Cohorts | MC Wang | NIDA (NIH) | 7/1999-5/2001 | 20% |
| Hopkins Population Center | K Hill | NICHD (NIH) | 7/1999-6/2002 | 10% |

ACADEMIC SERVICE

Committee on Honors and Awards, Johns Hopkins Bloomberg School of Public Health, since 9/2005

Chair, Committee for Intellectual Environment, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, since 7/ 2004.

Admissions Committee, Department of Biostatistics, Johns Hopkins Bloomberg School of Public Health, 2000-2002.

PRESENTATIONS/ORGANIZATION

Scientific Meetings:

Co-Chair, International Conference on Health Policy Statistics, 2009.

“Using an intervention-based framework to address input data missing due to death”, **invited**, International Biometrics Society (ENAR), Arlington, VA, 2008.

“Evaluating training programs in the presence of protocol deviations and substitution effects using principal stratification”, **invited**, Conference: Causal Inference in Economics; organizers: the Department of Economics, Uppsala University, and the Nordic Center of Excellence in Empirical Labor Economics, Uppsala, Sweden June 2007.

“The framework of principal stratification for partially controlled studies”, **invited**, Conference: Statistical and Applied Mathematical Sciences Institute; organizers: J Berger, N Wermuth, H Massam, and DR Cox; Raleigh, NC, November 2006.

“Addressing Statistical Challenges with Adherence in Intervention Research”, **invited**, Conference: Measuring and Managing Intervention Adherence, the School of Nursing, Johns Hopkins University, October 2006.

“Principal stratification designs to estimate outcomes missing due to death”, American Statistical Association, Annual Meeting (JSM), Seattle, August 2006.

Discussant and organizer of **invited** session; “The role of new designs for evaluating vaccines and other prevention programmes”, International Biometrics Society (ENAR), Tampa, FL, 2006.

Discussion Panelist (**invited**), “ Considering usual Medical care in clinical trial design ”, NIH Program on Clinical Research Policy Analysis and Coordination, October, 2005.

“Designs and polydesigns for partially controlled studies”, **invited**, American Statistical Association, Annual Meeting (JSM), Minneapolis, August 2005.

“Partially Controlled Studies: the role of designs” **invited**, Western North American Region of the International Biometric Society, and Institute of Mathematical Statistics, Fairbanks, AL, June 2005.

“Designs and polydesigns for partially controlled studies”, **invited**, International Chinese Statistical Association, Washington DC, June 2005.

Gerontological Society of America 57th Annual Scientific Meeting, **invited** discussion, Washington DC, November 19-23, 2004.

“Principal Stratification for Partially Controlled Studies”, **invited**, International Society for Clinical Biostatistics, London, England, 2003.

“Evaluating the impact of the Baltimore Needle Exchange Program on HIV incidence using proximity to exchange sites among injection drug users”, (with Varadhan R, Brookmeyer, R, Strathdee, S, Vlahov, D, and Safaeian, M), American Public Health Association, Annual Meeting, San Francisco (2003).

“Polydesigns in studies of causal effects: motivation definition and implementation”, (with Li F and Varadhan R), American Statistical Association, Annual Meeting, San Francisco, CA, 2003.

“Principal Stratification for Partially Controlled Studies, and Application to Evaluating the Impact of the Baltimore Needle Exchange Program”, **invited**, International Biometrics Society (ENAR), Tampa, 2003, FL, 2003.

“Evaluating the Impact of the Baltimore Needle Exchange Program”, **invited**, American Mathematic Society, Joint Summer Research Conference, Mount Holyoke College, MA, 2002.

“The method of ‘principal causal effects’ for assessing surrogate endpoints: definition, estimation, and sensitivity analysis”, **invited**, International Biometrics Society (ENAR), Charlotte, NC, 2001.

“The role of potential confounders in causal inference with application to surrogate endpoints”, **invited**, American Statistical Association, Annual Meeting, Indianapolis, IN, 2000.

“Compliance-adjusted double-sampling designs for comparative research”, (with Baker, SG), **invited**, International Biometrics Society (ENAR), Annual Meeting, Chicago, IL, 2000.

“Bayesian analysis of the New York School Choice Scholarships program a randomized experiment with noncompliance and missing data”, based on peer reviewed paper, (with Barnard, J, Hill, J, and Rubin, DB), Case Studies in Bayesian Statistics 5, Carnegie Mellon University, Pittsburgh, PA, 1999.

“On the idiosyncrasy of estimating survival curves using double sampling in the presence of self-selected right censoring”, American Statistical Association, Annual Meeting, Baltimore, MD, 1999.

“Causal inference through potential outcomes”, (with Rubin, DB), **invited**, Nordic Network for Biostatistics Research, Karolinska Institute, Stockholm, Sweden, 1998.

“Causal inference through potential outcomes”, (with Rubin, DB), **invited**, European Meeting of Statisticians, Vilnius, Lithuania, 1998.

“The clustered encouragement design”, **invited**, American Statistical Association, Annual Meeting, Dallas, TX, 1998.

“Detecting indirect effects within the clustered encouragement design”, International Meeting on Bayesian Statistics, Valencia, Spain, 1998.

“Why intention-to-treat tests are generally anticonservative in the presence of both treatment noncompliance and outcome-nonresponse: revealing and handling this phenomenon”, **awarded**, The International Biometric Society (ENAR), Annual Meeting, Pittsburgh, PA, 1998.

“A new approach to the idiosyncratic problem of drug noncompliance with subsequent loss to follow-up”, American Statistical Association, Annual Meeting, Anaheim, CA, 1997.

Invited Seminars:

“Role of designs in partially controlled studies”, Department of Biostatistics, University of Wisconsin Madison, WI, October, 2006.

“Role of designs in partially controlled studies”, Wharton School, Department of Statistics, University of Pennsylvania, Philadelphia, PA, October, 2005.

“Deviations from protocol: complication or window to more flexible designs ?” , NIH, March 22 2005.

“Biostatistical perspectives in translation of research: the links among 'goal-design-analysis'”. Symposium on Issues in Successful Translation of Research: Applications to Research on Aging, Johns Hopkins University, Baltimore, MD, 2004.

“Evaluating the impact of the Baltimore Needle Exchange Program (NEP) on HIV incidence” Wharton School of Business, University of Pennsylvania, Philadelphia, PA, 2002.

Discussant on presentation by Marc Buyse, Biostatistics Grand Rounds, Johns Hopkins University, Baltimore, MD, 2000.

“The method of principal stratification in causal inference: addressing post-treatment variables. Examples on School Choice and surrogate endpoints.”, Seminar sponsored by NIMH and NIDA institutes, Department of Biostatistics, Johns Hopkins University, Baltimore, MD, 2000.

“Similarities between experiments with protocol deviations and observational studies: the use of potential confounders”, Merck Second Annual Seminar, West Point, PA, 2000.

“Clustered-encouragement-design and the central role of modeling”, Colloquium, Center for Statistical Sciences, Brown University, Providence, RI, 1999.

“On the idiosyncrasy of estimating survival curves using double sampling in the presence of self-selected right censoring”, Longitudinal Data Seminar, Department of Biostatistics, The Johns Hopkins University, Baltimore, MD, 1999.

“On the idiosyncrasy of estimating survival curves using double sampling in the presence of self-selected right censoring”, Applied Statistics Colloquium, Department of Mathematics, Boston University, Boston, MA, 1999.

“On the idiosyncrasy of estimating survival curves using double sampling in the presence of self-selected right censoring”, Colloquium, Department of Biostatistics, Harvard School of Public Health, Boston, MA, 1999.

“Addressing complications of intention-to-treat analysis in the presence of all-or-none treatment noncompliance and subsequent missing outcomes”, Colloquium, Department of Epidemiology and Biostatistics, University of Pennsylvania, Philadelphia, PA, 1999.

“Addressing complications of intention-to-treat analysis in the presence of all-or-none treatment noncompliance and subsequent missing outcomes”, Colloquium, Department of Health Care Policy, Harvard Medical School, Boston, MA, 1999.

“Addressing complications of intention-to-treat analysis in the presence of all-or-none treatment noncompliance and subsequent missing outcomes”, Colloquium, Department of Biostatistics, Johns Hopkins University, Baltimore, MD, 1998.

“Addressing complications of intention-to-treat analysis in the presence of all-or-none treatment noncompliance and subsequent missing outcomes”, Colloquium, Department of Biostatistics, University of California at Los Angeles, Los Angeles, CA, 1998.

“Issues in intention-to-treat under nonresponse: an update”, Statistical Methods in Epidemiology, Harvard School of Public Health, Boston, MA, 1997.

“A new approach to the idiosyncratic problem of drug noncompliance with subsequent loss to follow-up”, Working Group on Methods on AIDS, Harvard School of Public Health, Boston, MA, 1997.

ADDITIONAL INFORMATION

Research objectives:

I am interested in developing new ways in which we can obtain knowledge of etiological and generalizable mechanisms. By etiology here I mean a deeper connected pathway of explanations for, and bridge to, the technical workability of the particular method, on one hand, with the most essential elements of the applied problem that the method addresses, on the other hand. I emphasize etiological reasoning in research because appropriate etiologies of methods and hypotheses are more generalizable in science than are the particular methods and hypotheses themselves. For this reason, this approach often brings deep and broad changes in the way we conduct research and ultimately in improving people’s lives.

In my main research, I develop designs and methods of analyses to evaluate treatments in medicine, public health and policy (causal inference). Causal inference is important in public health and medicine because it allows us to understand complex and not directly controllable mechanisms in terms of simpler and possibly controllable ones. This knowledge leads to new technologies and policies to change people’s lives for the better. For example, even in the most reliable medical studies – the “randomized studies” – patients often do not comply with the assigned treatments and drop out. We have shown that the “intention-to-treat method”, which has been widely used for those situations, is not suitable to generally estimate even the “intention-to-treat effects”, and we have provided appropriate methodology.

We have integrated this work with Don Rubin in a unifying statistical framework, “principal stratification”. Principal stratification allows researchers to design studies and address a challeng-

ing statistical problem with partial control: to find the degree to which the effect of a controlled treatment or factor on a main outcome is explained by the effect of the controlled treatment on the activation of intermediate causal pathways that are not directly controlled.

Principal stratification has now been applied in a broad range of areas, including HIV; cancer; ophthalmology; orthopedics; mental health; nephrology; surrogate endpoints; noncompliance with missing outcomes; and effects of vaccines on viral load for those infected. Principal stratification has been used and cited by over 100 journal papers by other researchers; has been used in government documents (e.g., for school vouchers); has formed part of more than 10 PhD theses (Harvard University, University of Washington in Seattle, UCLA, University of Pennsylvania, Brown University, University of Michigan, and the Karolinska Institute in Sweden); and forms part of courses at Hopkins, Harvard, Princeton, Emory, Beijing U, University of Washington, and the Karolinska Institute in Sweden.

Keywords: causal inference, design, deviations from protocol, health policy, missing data, noncompliance, partial control, potential outcomes, principal stratification, public health, survival analysis, treatment.

Hobbies:

Playing and composing for piano, classical music, drawing, tennis

Link to additional information, including citations and software
<http://biosun01.biostat.jhsph.edu/~cfrangak>