12-26-19

**MICHAEL J. HABER**

Current Position: Professor, Department of Biostatistics and Bioinformatics,

Rollins School of Public Health, Emory University

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E-mail: mhaber@emory.edu

Personal: Born in Ramat‑Gan, Israel

Married + 2 daughters.

Citizenship: U.S.A. and Israel

### EDUCATION

Ph.D.: 1976, Hebrew University of Jerusalem, Israel

Major: Statistics

Dissertation: The singular value decomposition of random matrices

Supervisor: Dr. K. R. Gabriel

M.Sc. (w/distinction): 1968, Hebrew University of Jerusalem

Major: Statistics

Thesis: Selected problems in the analysis of paired comparisons experiments

Supervisor: Dr. E. Peritz

B.Sc.: 1965, Hebrew University of Jerusalem

Major: Mathematics, Physics and Statistics

### PROFESSIONAL EMPLOYMENT

1992-present: Professor, Department of Biostatistics and Bioinformatics, Rollins School of Public Health, Emory University, Atlanta, Georgia.

1990‑1992: Associate Professor, Division of Biostatistics, School of Public Health, Emory University, Atlanta, Georgia.

1988‑1990: Associate Professor, Division of Biostatistics, Department of Epidemiology and Biostatistics, Emory University, Atlanta, Georgia.

1983‑1988: Associate Professor, Department of Statistics and Biometry, Emory University, Atlanta, Georgia.

1980‑1983: Associate Professor and Assistant Professor, Department of Mathematical Sciences, Memphis State University, Memphis, Tennessee.

1976‑1979: Lecturer, Department of Statistics, University of Haifa, Israel.

1970‑1976: Research Assistant, Departments of Medical Ecology and Public Health Nutrition, Hadassah‑Hebrew University Medical School.

1970‑1975: Teaching Assistant, Department of Statistics, Hebrew University of Jerusalem.

1968‑1969: Chief Statistician, Division of Epidemiology, Ministry of Health, Jerusalem.

### VISITING POSITIONS

5/95-7/95: Fulbright Scholar, London School of Hygiene and Tropical Medicine.

9/79-8/80: Visiting Assistant Professor, Department of Statistics, University of Waterloo, Waterloo, Ontario, Canada.

### HONORS AND AWARDS

Fulbright Award to conduct research on statistical methods for infectious diseases (1995)

Co-author of theoretical paper finalist, CDC/ASTDR Statistical Science Awards (1993 and 1995)

Co-author of best theoretical paper, CDC Statistical Science Awards Ceremony, 2013.

### FUNDED RESEARCH PROJECTS

Memphis State University ‑ Faculty Research Grant: A comparative study of tests for 2x2x2 contingency tables. March 1983‑August 1983.

Emory University ‑ Biomedical Research Support Grant: Racial differences in the incidence of oral and pharyngeal cancer in the metropolitan Atlanta area. Principal Investigator, October 1985‑September 1987.

National Institutes of Health: The association of risk factors and virus transmissions. Principal Investigator @ 30% effort, January 1986‑June 1989.

Centers for Disease Control: Analysis of dengue fever data from Mexico. Co‑Director @10% effort, July 1986‑June 1987.

Smokeless Tobacco Research Council: Evaluation of risk factors for oral and pharyngeal cancer. Principal Investigator @ 20% effort, July 1988‑June 1990.

Centers for Disease Control: Estimation of vaccine efficacy from data on a measles outbreak in Burundi. October 1989‑June 1990.

National Institutes of Health: Assessment of HIV transmission risks and patterns. Investigator @18% effort, March 1990‑February 1993.

National Institutes of Health: Statistical methods for the evaluation of vaccine efficacy. Principal Investigator @ 40% effort, January 1992‑December 1994.

National Institutes of Health: MRA/US carotid stenosis screening study. Biostatistician @10% effort, July 1993-June 1996.

SAMSHA/Center for Drug Abuse and Treatment: State demand and needs assessment study - alcohol and other drugs. Investigator @15% effort, December 1993-January 1995.

National Institutes of Health: Pallidotomy in Parkinson's disease. Statistician @ 20% effort, May 1994-April 1999.

National Institutes of Health: Statistical methods for the evaluation of vaccine efficacy. Investigator @ 36% effort, April 1995-March 1999.

Centers for Disease Control and Prevention: Influenza and other illness in day care surveys.

Principal Investigator @ 40% effort, July 1997-December 1999.

National Institutes of Health: Intense Tai-Chi exercise training in older adults. Statistician @ 10% effort, October 1997–February 2000.

National Institutes of Health: Deep-brain stimulation for Parkinson’s disease. Statistician @ 20% effort, May 1999-December 2004.

National Institutes of Health: Center for Alternative and Complementary Medicine. Statistician @ 20% effort, September 2000-June 2006.

Centers for Disease Control and Prevention: Assessing the risk of pneumonia in HIV positive women. Principal Investigator @ 50% effort, September 2000-February 2001.

National Institutes of Health: Monoamine and related regulatory systems in Tourette’s. Statistician @ 5% effort, December 2000-November 2004.

Centers for Disease Control and Prevention: Intensive care antimicrobial resistance epidemiology. Statistician @ 10% effort, March 2001-September 2001.

Emory University Research Committee: Assessing agreement between continuous measurements. Co-PI @ 5.4% effort, May 2001-April 2002.

National Institutes of Health: Functional analysis of Anti 4-1BB mediated tumor immunity. Statistician @ 5% effort, March 2002-February 2007.

Emory University, Quadrangle Research Fund: Assessment and validation of measurement scales. Investigator June 2002-May 2003.

Centers for Disease Control and Prevention: Statistical models for the spread of influenza. Principal Investigator @ 38% effort, October 2002-November 2004, October 2006 -.

National Institutes of Health: Emory’s Alcohol Center. Statistician @ 25% effort, January 2003-December 2007.

National Institutes of Health: Pox virus immunology and vaccine development. Statistician @ 5% effort, April 2004-March 2009.

Novartis: A placebo-controlled cross-over study comparing the acute cognitive effects of Stalevo to equivalent doses of dopamine agonists. Statistician @ 5% effort. May 2004-December 2005.

National Institutes of Health: New methods for evaluating observer agreement. PI @ 30% effort, July 2004-June 2007.

Pfizer Inc.: Models for treatment of antibiotic resistance in hospitals. Jan 2005-Dec 2006.

Sanofi-Aventis and CDC: Association between antimicrobial resistance in blood isolates of *streptococcus pneumoniae* and patterns of use of antibiotics in the U.S.A. Investigator at 10% effort. October 2006-September 2008.

Wyeth Inc.: Association of PCV7 coverage and hospitalizations resulting from pneumococcal infections. April 2009-October 2010.

Centers for Disease Control and Prevention: Statistical analysis of non-pharmaceutical influenza

pandemic interventions studies. Principal Investigator, October 2007-September 2010.

Columbia University: Impact of non-pharmaceutical interventions on URI’s and influenza in crowded, urban households. Statistician, April-September 2009.

Pfizer Inc: Design of timely hospital inpatient surveillance systems to study trends associated with PCV13 vaccination. October - December 2010.

Robert Wood Johnson Foundation: Prevalence and correlates of Human papillomavirus (HPV) vaccination in rural areas. October 2010 – September 2011.

Head and Spore Inc. Pretreatment staging of oral cavity squamous cell carcinoma: Role of dual phase contrast – enhancing computed tomography vs. magnetic resonance imaging. April-June 2011.

Centcor: An evaluation of the efficacy of the tumor necrosis factor alpha antagonist infliximab in the treatment of resistant depression. June 2011 - March 2012.

CDC: Association of hormone levels and Chronic Fatigue Syndrome. July-September 2011.

NIH-ACTSI: Biostatistics, Epidemiology and Research Design (BERD). July 2011 - .

CDC: Emory Center for Injury Control (ECIC). July 2011 – June 2014.

NIH: Summer Institute for Biostatistics (SIBS). September 2011 - .

CDC: Models for transmission of influenza. September 2011 – September 2015.

Pfizer Inc: Effects of PCV13 vaccination on hospitalizations. September 2012 – March 2014.

NIH: Immune enhancement for immunological non-responders to ART. September 2012 –

June 2015

Glaxo-Smith-Kline: Assessing the burden of hospitalization and death attributable to influenza in the United States. June - December 2013

NIH/NIAID: Study designs for estimating the effectiveness of vaccination against influenza.

March 2014 – February 2018

Emory University Research Committee: Estimation of the number of influenza cases prevented by vaccination. June 2014 – November 2015.

NIH: HIV-induced redox stress and the alveolar macrophage as a resistant reservoir.

August 2014 -

FDA: Phase 2 RCT of arginine therapy for pediatric SCD pain. August 2015 – March 2018.

CDC: Estimation of global influenza mortality. October 2015 – September 2016.

CDC: Estimating effectiveness of rotavirus vaccines. August 2017 - .

### FIELDS OF INTEREST

Biostatistics, categorical data analysis, statistical models and methods for infectious diseases and vaccine effects, observer agreement.

### SUMMARY OF TEACHING ACTIVITIES

Courses in probability and statistical inference, linear models, experimental design, regression analysis, survival analysis, generalized linear models statistical methods for infectious disease data, categorical data analysis, statistical methods, sampling, statistical decision theory, introduction to probability and statistics, calculus and college algebra.

### GRADUATE STUDENTS

**Ph.D.**

G. David Williamson, “Models for Multidimensional Contingency Tables with Incomplete Data”, Ph.D. 1987.

Catherine C. Chen, “Statistical Methods for Two‑Way Contingency Tables with Incompletely Classified Data”, Ph.D. 1988.

Margarette S. Kolczak, “Assumptions and Variance Estimates in Evaluating Vaccine Efficacy Using the Household Secondary Attack Rate”, Ph.D. 1995.

Andrew Baughman, “A Latent Trait Model to Estimate Observer Agreement Using Replicated Binary Measures for Each Observer”, Ph.D. 2000.

Xiaohong Mao Davis, “Estimation of Vaccine Efficacy from Household Data”, Ph.D. 2003.

Jeffrey B. Wiener, “Evaluating Agreement Among Observers or Methods of Measurement for Quantitative Data”, Ph.D. 2009.

Jingjing Gao, “Assessment of Observer Agreement from Categorical Observations”, Ph.D. 2010.

Yi Pan, “Assessing Observer Agreement from Data with Replicated Measurements”, Ph.D. 2011.

Qian An, “Models for Statistical Analyses of Infectious Disease Data”, Ph.D. 2014.

Kylie Ainslie, “Estimation of Influenza Vaccine Effectiveness from Observational Studies”, Ph.D. 2018.

Meng Shi, “Comparing Study Designs for Estimation of the Effectiveness of Influenza Vaccines”,

in progress.

**Master’s**

Yonghwan Um, “An Empirical Evaluation of Statistical Properties of Estimated HIV Transmission Parameters from Partner Studies”, M.S. 1990.

Jaideep Purkayastha, “An Analysis of Risk Factors and Evaluation of Risks of HIV Infection in Homosexual Men from the Chicago Coping and Change Study”, M.S. 1994.

Guiming Miao, “Comparison of Discrete and Continuous-Time Methods in Vaccine Efficacy Estimation”, M.S. 1997.

Mark R. Stevens, “An Exploratory Analysis of Revictimization and its Effect on Psychological and Social Outcomes in African-American Women”, M.S.P.H. 1999.

Tara W. Strine, “Predictors of Under and Over Immunization of Children Ages 19-35 Months Using the National Immunization Survey”, M.P.H. 2001.

Antoni Carangi, “Interobserver Variability in Assessing Carotid Stenosis”, M.S.P.H. 2001.

Katherine Jackson, “A One-Factor Model of Influenza Vaccine Related Adverse Events,” M.S.P.H. 2002.

Jun Zhang, “Use of Movement-Time/Reaction Time Data to Estimate Severity of Parkinson’s Disease”, M.S.P.H. 2004.

Shiyi Yang, “The Effects of Exercise on the Frequency of Falls in Parkinson’s Disease Patients”. M.P.H. 2005.

Po-Yung Cheng, “The Effects of Exercise on Motor Functions in Parkinson’s Disease Patients”. M.P.H. 2006.

Amber Burt, “Association between cause of injury and hospitalization for children aged 0-4 years treated in U.S. emergency departments”. M.P.H. 2006.

Hong Zhou, “Temporal Relationships between Influenza and Invasive Pneumococcal Diseases in Metro Atlanta, 1994-2005.” M.P.H. 2006.

Songli Xu, “Direct, Indirect, Total and Population Vaccination Effectiveness in Pandemic Influenza Vaccination”, M.P.H. 2012.

Ji In Ahn, “ The Association of Hormone Levels and the Risk of Chronic Fatigue Syndrome.” M.S.P.H. 2012.

Jie Chen. “Association between Trivalent Inactivated Vaccination and Risk of Febrile Seizures among Children Aged 6-80 Months Old in the Influenza Season 2010-2011”. M.P.H. 2013.

Chang Liu: “Impact of Pneumococcal Conjugate Vaccination of Children on Hospitalizations Resulting from Invasive Pneumococcal Diseases in the United States”. M.S.P.H. 2014.

Shawnee Anderson, “Modeling the Preventive Effectiveness of Influenza Vaccination”, M.S. 2015.

Polina Elkind, “Effects of Subject-level Characteristics on Influenza Illness and Vaccination”, M.S.P.H 2016.

### PROFESSIONAL ACTIVITIES

Translation (English to Hebrew) of “Basic Concepts of Probability and Statistics” by J. L. Hodges, Jr. and E.L. Lehmann.

Reviewed grant proposals for the National Institutes of Health (multiple), National Science Foundation, National Science and Engineering Research Council of Canada, Research Grants Council of Hong Kong (2), Canadian Institute of Health Research.

Invited discussant. International Statistical Institute, 1995.

Organized and chaired an invited session on statistical methods for vaccine effects, Joint Statistical Meetings, 1998.

Organized a session on evaluation of observer agreement for continuous measurements, Joint Statistical Meetings, 2003.

Member of data safety and monitoring board for influenza vaccine under INDs, 2005.

Co-organized an invited session on ‘Recent Advances in Assessment of Agreement for Clinical and Lab Data’, ENAR 2013.

Reviewed manuscripts for:

American Journal of Epidemiology (5)

American Statistician (10)

Annals of Applied Statistics

Annals of Epidemiology

Annals of Statistics

Archives of Internal Medicine

Biometrics (13)

Biometrical Journal (3)

Biometrika

BMC Infectious Diseases (3)

BMC Medical Research Methodology

BMC Pediatrics

Canadian Journal of Statistics

Child Development (2)

Clinical Trials

Communications in Statistics (5)

Computational Statistics and Data Analysis (6)

Emerging Infectious Diseases (3)

Epidemiology

European Journal of Pediatrics

Eurosurveillance

Expert Review of Vaccines (3)

Genetic Epidemiology

Genetics (2)

Hacettepe Journal of Mathematics and Statistics

Health and Place

Human Vaccines

Human Vaccines and Immunotherapeutics (3)

International Journal of Epidemiology (5)

Journal of AIDS

Journal of the American Medical Association (2)

Journal of the American Statistical Association (7)

Journal of Biopharmaceutical Statistics (8)

Journal of Infectious and Noninfectious Diseases

Journal of Molecular and Genetic Medicine

Journal of Pediatrics (3)

Journal of Statistical Computation and Simulation (3)

Mathematical Biosciences

Mathematical and Computer Modelling

Metrika

Pediatric Infectious Diseases Journal (2)

Pediatrics (2)

PLOS One (2)

PLOS Pathogens

Psychological Bulletin (13)

Psychological Methods

Psychological Reports (3)

Psychometrika (2)

Science (4)

Statistical Communications in Infections Diseases

Statistical Modelling

Statistics and Computing

Statistics and Probability Letters (2)

Statistics in Medicine (14)

Vaccine (16)

Vaccines

World Journal of Pediatrics

### PROFESSIONAL ASSOCIATIONS

American Statistical Association. Member since 1978:

Served as treasurer (1987‑88), vice president (1988‑90) and president (1990‑91) of the Atlanta Chapter.

Member of the Local Arrangements Committee, Joint Statistical Meetings (1991, 2001).

Member of Outstanding Statistical Applications Committee (2004-2006).

Biometric Society (ENAR). Member since 1982.

Member of the Local Arrangements Committee (1986).

International Society for Clinical Biostatisticians. Member 2000-2003.

International Society for Influenza and other Respiratory Viruses. Member since 2013.

**ACADEMIC ADMINISTRATION (Emory University)**

1984-88 Member, Research Committee, Atlanta V.A. Hospital.

1984-88 Member, Library Policies Committee.

1986-87 Member, committee to develop a curriculum for a graduate program in biostatistics and epidemiology.

1987-94 Chair, Examinations Committee, Department of Biostatistics.

1990- Chair and member of various search committees, Department of Biostatistics.

1992-2004 Chair and member, Admissions Committee, Department of Biostatistics.

1992-95, Chair and member, Curriculum Committee, Department of Biostatistics.

2004-

1992-97 Member, Curriculum Committee, Rollins School of Public Health.

1993-99 Member, Admissions Committee, Rollins School of Public Health.

5/93-8/93, Acting/Interim Chair, Department of Biostatistics.

5/94-12/94

1994-2003 Director of Graduate Studies, Department of Biostatistics.

1994-97 Member, Research Committee, Center for Clinical Evaluations Sciences.

1995-99, Chair and Member, Recruitment Committee, Department of Biostatistics.

2002-04,

2011-13,

2018-19

1996 Chair, Self-study Governance Committee, Rollins School of Public Health

* 1. Member, University Research Committee.

1998 Member, Biostatistical Consulting Center Committee.

2000- Chair and Member, Examinations Committee, Department of Biostatistics.

2001 Member, Parking and Transportation Committee.

2003-06 Member, Faculty Senate, Rollins School of Public Health.

2009-18 Chair, Space Committee, Department of Biostatistics and Bioinformatics.

2010-13 Member, Appointment, Tenure and Promotion Committee, Rollins School of Public

Health.

2013 - Chair and Member, Department’s Website Committee, Department of Biostatistics

and Bioinformatics.

2014 Member, Shepard Award Committee, Rollins School of Public Health

2016 Member, Admissions Committee, Department of Biostatistics and Bioinformatics.

### RESEARCH

# Summary of Methodologic Research Activities

## (1). Categorical Data Analysis

a. Models for contingency tables: Developed methods for deriving maximum likelihood estimators in linear and log‑linear models for multidimensional contingency tables under special conditions, such as constraints on the cell frequencies or their marginal totals.

b. Incomplete contingency tables: Developed models and methods for analyzing contingency tables with partially cross‑classified data. Published an algorithm for fitting a log linear model to a table of this type, and applied these methods to problems in genetics and other areas. Also conducted research on analyzing repeated categorical data with missing values.

c. Sample size and power: Studied the power function of the test for no three‑factor interaction in a 2x2x2 table for small and large samples. Developed methods for determining the sample size required for this test. Investigated the small and large‑sample power and relative efficiency of the chi‑square test for categorical data in alternative models.

d. Two‑by‑two tables: Developed new exact unconditional tests for 2x2 tables with fixed or random marginal totals. Studied and compared large‑sample approximation for these tables. Was the first to investigate the properties of the mid p‑value test for 2x2 tables. Invited to write an article on 2x2 tables for the Encyclopedia of Biostatistics.

#### (2). Models and Methods for Infectious Disease Data

a. Household transmission models: Dr. Haber and colleagues developed new models for the transmission of an infectious disease in households. The parameters in these models are the transmission probabilities within and between households. These parameters may depend on individual and household‑related covariates.

b. Transmission of HIV/AIDS: Derived maximum likelihood estimates of the per‑contact anal and oral transmission probabilities from data on sexual contacts of study subjects with different types of partners.

c. Evaluation of vaccine effects: Dr. Haber and colleagues redefined the concept of vaccine efficacy in terms of the ratio of transmission probabilities to a vaccinated and unvaccinated person. They developed methods for estimating vaccine efficacy from different types of data. Dr. Haber introduced a new concept of *preventive* (population) vaccination effectiveness, which compares the attack rate in a partially vaccinated population to that expected in the same population if no vaccination has been performed. This concept depends on both the direct and indirect effects of vaccination. Also developed methods for estimation of this quantity from various types of data in situations where a comparable unvaccinated population is not available.

d. Evaluation of behavioral interventions to reduce the impact of an influenza pandemic: Used stochastic simulations to investigate the effects of school closing, confinement to home and reducing contacts in long-term facilities on rates of morbidity and mortality during an influenza pandemic.

e. Models for antibiotic resistance: Developed stochastic simulation programs to (1) examine treatment options to reduce rates of antibiotic resistance, and (2) study the association between use of antibiotics and resistance.

f. Estimation of the herd immunity effects of the PCV7 vaccine. Developed methods for evaluating the association between PCV7 coverage in young children and the incidence of pneumococcal diseases in older children and adults.

g. Comparing study designs for estimation of influenza vaccine effectiveness. Probability-based and stochastic agent-based simulation models to assess bias and precision of estimates of influenza vaccine effectiveness resulting from various observational study designs.

(3). Methods for Evaluation of Agreement Between Observers or Methods of Measurement

a. The concordance correlation coefficient: Extended definition and inference methods to multiple observers and to studies with replicated observations.

b. The coefficients of individual agreement and individual equivalence: New methods for assessing agreement from categorical and quantitative data with replicated and repeated observations.

### PUBLICATIONS

### Book Chapters

Harlap, S., Davies, A.M., **Haber, M.**, Prywes, R., Rossman, H., and Samueloff, N. (1972). Patterns of medication in early pregnancy: A preliminary report from the Jerusalem Perinatal Study. In Klingberg, M.A. Abramovici, A. & Chemke, J. (eds.). *Drugs and Fetal Development,* 489‑504. New York: Plenum Press.

Longini, I.M., Clark, W.S., **Haber, M.**, and Horsburgh, R. (1990). The stages of HIV infection: waiting times and infection transmission probabilities. In *Mathematical and Statistical Approaches to AIDS Epidemiology* (Lecture Notes in Biomathematics 83, edited by C. Castillo‑Chavez), 111‑137. Springer‑Verlag, N.Y.

Longini, I.M., Halloran, M.E., and **Haber, M.** (1995). Some current trends in estimating infectious diseases vaccine efficacy. *Epidemic Models: Their Structure and Relation to Data* (ed. D. Mollison) 394-403. Cambridge University Press.

Halloran, M.E., Longini, I.M., Struchiner, C.J., and **Haber, M.** (1995). Feasibility of prophylactic HIV vaccine trials. Some statistical issues. *Models for Infectious Human Diseases* (ed. V.S. Isham and G. Medley) 76-82. Cambridge University Press.

**Haber, M.** (1998) Two by two tables. *Encyclopedia of Biostatistics* (edited by P. Armitage and T. Colton) 4630-4635.

Thompson, W.W. **Haber, M.,** Jin, X., Patel, R., and Shay, D.K. (2008). A simulation model for testing the effects of multiple interventions during an influenza pandemic. *Options for the control of influenza VI* (ed. J.M. Katz), 173-176. International Medical Press.

### Articles in Refereed Journals

Cohen, J., Bruderman, I., Rosenberg, M., Silberstein, J., Ever‑Hadani, S., and **Haber, M.** (1970). Chronic bronchitis and emphysema. *Pathology of Microbiol*ogy 35, 171‑175.

Harlap, S., Davies, A.M., **Haber, M.**, Rossman, H., Prywes, R., and Samueloff, N. (1971). Congenital malformations in the Jerusalem Perinatal Study. An overview with special reference to material origin. *Israel Journal of Medical Science* 7, 1520‑1528.

Yron, I., Weiss, D.W. Robinson, E., Cohen, D., Adelberg, M.G., Mekory, T., and **Haber, M.** (1973). Immunotherapeutic studies in mice with the methanol‑extraction residue (MER) fraction of BCG: Solid tumors. *National Cancer Institute Monographs* 39, 33‑54.

Yron, I., Cohen, D., Robinson, E., **Haber, M.**, and Weiss, D.W. (1975). Effects of methanol extraction residue and therapeutic irradiation against established isografts and simulated local recurrence of mammary carcinomas. *Cancer Research* 35, 1779‑1790.

Cohen, D., Yron, I., **Haber, M.**, Robinson, E., and Weiss, D.W. (1975). Effects of treatment with the MER tubercle bacilli fraction on the survival of mice carrying mammary tumour isographts: Injection of MER at the tumour site or at a distal location. *British Journal of Cancer* 32, 483‑490.

Nevo, E., Zohary, D., Brown, A.H.D., and **Haber, M.** (1979). Genetic diversity and environmental associations of wild barley “Hordeum Spontaneum” in Israel. *Evolution* 33, 815‑833.

Nevo, E., Guttman, R., **Haber, M.**, and Erez, E. (1979). Habitat selection in evolving mole rats. *Oecologia (Berlin)* 43, 125‑138.

**Haber, M.** (1980). A comparative simulation study of the small sample powers of several goodness‑of‑fit tests. *Journal of Statistical Computation and Simulations* 11, 241‑250.

**Haber, M.** (1980). Detection of inbreeding effects by the chi‑square test on genotypic and phenotypic frequencies. *American Journal of Human Genetics* 32, 754‑760.

**Haber, M.** (1980). A comparison of some continuity corrections for the chi‑square test on 2 x 2 contingency tables. *Journal of the American Statistical Association* 75, 510‑515.

**Haber, M.** (1981). Exact significance levels of goodness‑of‑fit tests for the Hardy‑Weinberg equilibrium. *Human Heredity* 31, 161‑166.

**Haber, M.** (1981). On the asymptotic power and relative efficiency of the frequency chi‑square test. *Journal of Statistical Planning and Inference* 5, 299‑308.

**Haber, M.** (1982). Testing for independence in intraclass contingency tables. *Biometrics* 38, 93‑103.

**Haber, M.** (1982). The continuity correction and statistical testing. *International Statistical Review* 50, 135‑144.

Nevo, E., Guttman, R., **Haber, M.**, and Erez, E. (1982). Activity patterns of evolving mole rats. *Journal of Mammalogy* 63, 453‑463.

**Haber, M.** (1983). An exact statistical test for the ABO system. *Human Heredity* 33, 1‑4.

**Haber, M.** (1983). Multidimensional intraclass contingency tables. *Communications in Statistics: Theory and Methods*, 12, 765‑776.

**Haber, M.** (1983). Sample sizes for the exact test of ‘no interaction’ in 2x2x2 tables. *Biometrics* 39, 493‑498.

Tan, W.Y., and **Haber, M.** (1983). The maximum likelihood estimation of genetic parameters for quantitative traits from autotetraploid self‑fertilized populations. *Biometrical Journal* 25, 791‑800.

**Haber, M.** (1984). Log‑linear models for linked loci. *Biometrics* 40, 189‑198.

**Haber, M.** (1984). The large sample power of the chi‑square test for multidimensional contingency tables. *Metrika* 31, 195‑202.

**Haber, M.** (1984). A comparison of tests for the hypothesis of no three‑factor interaction in 2x2x2 contingency tables. *Journal of Statistical Computations and Simulations* 20, 205‑215.

**Haber, M.** (1984). Fitting a general log‑linear model. *Applied Statistics* 33, 358‑362.

**Haber, M.** (1985). The power function of the test for 'no three factor interaction' in 2x2x2 contingency tables. *Biometrical Journal* 27, 231‑235.

**Haber, M.** (1985). Maximum likelihood methods for linear and log‑linear models in categorical data. *Computational Statistics & Data Analysis* 3, 1‑10.

**Haber, M.** (1985). Log‑linear models for the correlated marginal totals of a contingency table. *Communications in Statistics: Theory and Methods* 14, 2845‑2856.

**Haber, M.** (1986). An exact unconditional test for the 2x2 comparative trial. *Psychological Bulletin* 99, 129‑132.

**Haber, M.**, and Brown, M.B. (1986). Maximum likelihood methods for log‑linear models when expected frequencies are subject to linear constraints. *Journal of the American Statistical Association* 81, 477‑482.

**Haber, M.** (1986). Testing for pairwise independence. *Biometrics* 42, 429‑435.

**Haber, M.** (1986). A modified exact test for 2x2 contingency tables. *Biometrical Journal* 28, 455‑463.

**Haber, M.** (1987). On the asymptotic relative efficiency of the Mantel-Haenszel test. *Biometrical Journal* 29, 115‑120.

**Haber, M.** (1987). A comparison of some conditional and unconditional exact tests for 2x2 contingency tables. *Communications in Statistics: Simultations & Computations* 16, 999‑1013.

**Haber, M.**, Longini, I.M., and Cotsonis, G.A. (1988). Models for the statistical analysis of infectious disease data. *Biometrics* 44, 163‑173.

Longini, I.M., Koopman, J.S., **Haber, M.**, and Cotsonis, G.A. (1988). Statistical inference for infectious diseases: Risk‑specific household and community transmission parameters. *American Journal of Epidemiology* 128, 845‑859.

**Haber, M.** (1988). Log‑linear models for linked loci: variances of estimated parameters. *Biometrical Journal* 30, 589‑593.

**Haber, M.** (1989). Do the marginal totals of a 2x2 contingency table contain information regarding the table proportions? *Communications in Statistics: Theory and Methods* 18, 147‑156.

**Haber, M.** (1990). Comments on “The test of homogeneity for 2x2 contingency tables: A review of and some personal opinions on the controversy” by G. Camilli. *Psychological Bulletin* 108, 146‑149.

Longini, I.M., **Haber, M.**, and Halloran, M.E. (1990). A note on the calculation of vaccine efficacy from outbreaks of acute infectious agents (in Spanish). *Boletin Medico Del Hospital Infantil de Mexico* 47, 516‑519.

**Haber, M.**, Longini, I.M., and Halloran, M.E. (1991). Measures of the effects of vaccination in a randomly mixing population. *International Journal of Epidemiology* 20, 300‑310.

Halloran, M.E., **Haber, M.**, Longini, I.M., and Struchiner, C.J. (1991). Direct and indirect effects in vaccine efficacy and effectiveness. *American Journal of Epidemiology* 133, 323‑331.

Addy, C.L., Longini, I.M., and **Haber, M.** (1991). A generalized stochastic model for the analysis of infectious disease final size data. *Biometrics* 47, 961‑974.

**Haber, M.**, and Chen, C.C. (1991). Estimation of odds ratios for matched case‑control studies with incomplete data. *Biometrical Journal* 33, 673‑682.

**Haber, M.**, Longini, I.M., and Halloran, M.E. (1991). Estimation of vaccine efficacy in outbreaks of acute infectious diseases. *Statistics in Medicine* 10, 1573‑1584.

**Haber, M.**, Chen, C.C., and Williamson, G.D. (1991). Analysis of repeated categorical responses from fully and partially cross‑classified data. *Communications in Statistics: Theory and Methods* 20, 3293‑3313.

Greenberg, R.S., **Haber, M.**, Clark, W.S., Brockman, J.E., Liff, J.M., Schoenberg, J.B., Austin, D.F., Preston‑Martin, S., Stemhagen, A., Winn, D.M., McLaughlin, J.K., and Blot, W.J. (1991). The relation of socioeconomic status to oral and pharyngeal cancer. *Epidemiology* 2, 194‑200.

Rampey, A.H., Longini, I.M., **Haber, M.**, and Monto, A.S. (1992). A discrete time model for the statistical analysis of infectious disease data. *Biometrics* 48, 117‑128.

Halloran, M.E., **Haber, M.**, and Longini, I.M. (1992). Interpretation and estimation of vaccine efficacy under heterogeneity. *American Journal of Epidemiology* 136, 328-343.

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**Other Publications**

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**Haber, M.**, and Gabriel, K.R. (1976). Weighted least squares approximation of matrices and its application to canonical correlations and biplot display. University of Rochester, Department of Statistics.

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### SELECTED Presentations IN SCIENTIFIC CONFERENCES

Gabriel, K.R., and **Haber, M.** (1973). The Moore‑Penrose inverse of a data matrix: A statistical tool with some meteorological applications. Invited paper at Third Conference on Probability and Statistics in Atmospheric Science, Boulder, Colorado.

**Haber, M.** (1981). Pooling of frequencies in categorical data analysis. Presented at the Biometric Society (ENAR) Spring Meeting, Richmond, Virginia. Abstract in *Biometrics* 37, 613.

**Haber, M.** (1983). Log‑linear analysis of a two‑loci system under stratified sampling. Presented at the Joint Statistical Meeting of the American Statistical Association, Biometric Society, Institute of Mathematical Statistics and the Statistical Society of Canada. Toronto, Ontario, Canada.

**Haber, M.** (1984). On the optimality of the UMPU test for 2x2 contingency tables. Presented at the Joint Statistical Meeting of the American Statistical Association and the Biometric Society. Philadelphia, Pennsylvania.

**Haber, M.** (1985). Log‑linear models for contingency tables: some generalizations. Presented at the Joint Statistical Meeting of the American Statistical Association, Biometric Society and the Institute of Mathematical Statistics. Las Vegas, Nevada.

**Haber, M.** (1985). Conditional and unconditional exact tests for 2x2 contingency tables. Presented at the International Symposium of Foundations of Statistical Inference. Tel Aviv, Israel.

**Haber M.**, and Chen, C. (1986). Incomplete multivariate binary data. Invited paper at the Biometric Society (ENAR) Meeting. Atlanta, Georgia.

**Haber, M.**, and Longini, I.M. (1986). Analysis of virus transmission via log‑linear models. Presented at the Joint Statistical Meeting of the American Statistical Association, the Biometric Society and the Institute of Mathematical Statistics, Chicago, Illinois.

Longini, I.M., **Haber, M.**, Cotsonis, G.A., and Koopman, J.S. (1987). New statistical methods for the analysis of infectious disease data. Presented at the meeting of the Society for Epidemiologic Research (SER), Amherst, Massachusetts.

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Williamson, G.D., and **Haber, M.** (1988). Three‑dimensional contingency tables with incompletely classified data. Presented at the meeting of the East North American Region (ENAR) of the Biometric Society, Boston, Massachusetts.

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**Haber, M.** (1998). Estimation of direct and indirect effects of vaccination. Presented at the 19th International Biometric Conference, Cape Town, South Africa.

**Haber, M.** (2000). Estimation of the efficacy and effectiveness of a vaccine from household data. Presented at the 20th International Biometric Conference, San Francisco, CA.

Davis, X.M., and **Haber, M.** (2001). Estimation of vaccine efficacy from household data. Presented at the 8th Binennial CDC/ATSDR Symposium on Statistical Methods, Atlanta, GA.

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**Haber, M.**, Gruden, J.F., and Barnhart, H.X. (2002). The coefficient of interobserver variability: A new concept in the assessment of agreement among observers. 21st International Biometric Conference, Freiburg, Germany.

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Davis, X.M., and **Haber, M.** (2003). Estimation of vaccine efficacy from household data observed over time. Presented at the 3rd Joint Meeting of the International Society for Clinical Biostatisticians and the Society for Clinical Trials, London, United Kingdom.

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