BIOGRAPHICAL SKETCH

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NAME: Jones, Michael P.

eRA COMMONS USER NAME (credential, e.g., agency login): JONESMP

POSITION TITLE: Professor

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
University of Southern California, Los Angeles, CA	B.A.	1972	Mathematics
University of California, Los Angeles, CA	M.A.	1975	Mathematics
University of Washington, Seattle, WA	Ph.D.	1986	Biomathematics

A. Personal Statement

B. Positions and Honors

Positions and Employment

1975-79	Statistician/Programmer, Environmental Health Svc. Rancho Los Amigos Hospital, Downey, CA
1976-79	Instructor, Biometry Division, University of Southern California, Los Angeles, CA
1983-84	Visiting Research Associate, Department of Epidemiology and Statistics, Radiation Effects Research Foundation, Hiroshima, Japan
1986-91	Assistant Professor of Biostatistics, Department of Preventive Medicine and Environmental Health, The University of Iowa, Iowa City, IA
1991-99	Associate Professor of Biostatistics, Department of Preventive Medicine and Environmental Health, The University of Iowa, Iowa City, IA
1991-2000	Associate Professor, Department of Statistics, The University of Iowa (secondary)
1995-96	Visiting Professor, Department of Statistics, University of Oxford, Oxford, U.K.
1999-2000	Associate Professor, Department of Biostatistics, College of Public Health (established 1999), The University of Iowa
2000	Janssen Research Foundation Chair in Survival Analysis, Center for Statistics, Hasselt University (formerly Limburgs Universitair Centrum), Belgium
2000-present	Professor, Department of Biostatistics, University of Iowa
2000-present	Professor, Department of Statistics, University of Iowa (Secondary)
2003-06	Professor, Program in Public Health Genetics (Secondary)
2004-present	Senior Scientist, Comprehensive Access & Delivery Research and Evaluation Center (CADRE, formerly CRIISP), Veterans Affairs Medical Center, Iowa City, IA
2009-present	Professor, Public Policy Center, University of Iowa (Secondary)

Honors

1972	Pi Mu Epsilon National Mathematics Honorary Fraternity
1986	First Prize - Biometrics (WNAR) student paper competition
1989	Vera Wenger Award, Stefan Banach International Mathematical Center in Warsaw, Poland (presentation of two invited lectures)
1991-1996	First Independent Research Award (R29), National Institutes of Health
2003	Faculty Teaching Award, College of Public Health, University of Iowa
2016	BEHSR Aubrey Sheiham Award for Distinguished Research in Dental Public Health Sciences. Awarded for paper "Eliminating Medicaid Adult Dental Coverage in California Led to Increased Dental Emergency

Visits and Associated Costs" in Health Affairs (2015) by Singhal A, Momany ET, Jones MP, Caplan DJ, Kuthy RA, Buresh CT, Isman R, Damiano PC., Behavioral, Epidemiologic, and Health Services Research Scientific Group, International Association for Dental Research

2017   Faculty Service Award, College of Public Health, University of Iowa
2018   Elected to Delta Omega, Honorary Society in Public Health

Professional Memberships

International Biometric Society
American Statistical Association
Royal Statistical Society

C. Contributions to Science

1. Survival Data Analysis

Time to event data (often mortality) are ubiquitous in medical research since some patients are still alive at study conclusion and their exact time to death is only known to exceed some value. Analysis of these right-censored data is used for comparative effectiveness research. At the time of my initial involvement there were many, many nonparametric testing methods for two-sample, k-sample, continuous dose-level and multivariate treatment group problems. My first contribution was to unify the vast majority of them into one class of statistics. I created the distribution theory that applied to all members of this general class of methods, compared their efficiencies and studied their robustness against model misspecification and outliers, common problems in cancer survival studies. My second contribution in this area was to turn these hypothesis-testing procedures into estimating equations (a process called inversion) that allows one to estimate semiparametric regression models. They are semiparametric in the sense that there are no parametric assumptions about the error distribution of the time to event. I was either the first or sole author on these papers. Other contributions include regression diagnostics, robust procedures and tests for paired data.

- Jones MP, Crowley J. (1990) Asymptotic properties of a general class of nonparametric tests for survival analysis. Annals of Statistics, 18(3), 1203-1220.
- Jones MP, Crowley J. (1992) Nonparametric survival tests of the Markov model. Biometrika, 79, 513-522.
- Jones MP. (1997) A class of semiparametric regressions for the accelerated failure time model. Biometrika, 84, 73-84.
- Jones MP, Yoo B (2005). Linear signed-rank tests for paired survival data subject to a common censoring time. Lifetime Data Analysis, 11:351-365. PMID: 16133884

2. Missing Data Analysis

Missing data are a ubiquitous problem in medical and public health research. Inappropriate handling of missing data can lead to biased estimates of treatment effects. One such approach is to incorporate into the regression model an indicator variable for whether an explanatory variable is observed. Another approach is to stratify the model based on the range of values for an explanatory variable, with a separate stratum for those individuals in which the explanatory variable is missing. I was able to calculate the exact bias for each of these approaches. This paper (Jones, 1996) is frequently cited. Missing data are also common in longitudinal studies since subjects often drop out. When the reason for and/or time to attrition are related to the longitudinal outcome, bias occurs. My dissertation student, Chandan Saha, was able to calculate the bias in these situations (2005 paper). A commonly used method for attrition was to carry the last observation forward (LOCF). We were able to calculate the estimation bias for this method (2009 and 2016 papers) and advise that it never be used.

- Jones MP. (1996) Indicator and stratification methods for missing covariates in multiple linear regression. Journal of the American Statistical Association, 91, 222-230.
- Saha C, Jones M. (2005) Asymptotic bias in the linear mixed effects model under non-ignorable missing data mechanisms. Journal of the Royal Statistical Society, Series B, 67, 167-182.
- Saha CK, Jones MP. (2009) Bias in the last observation carried forward method under informative dropout. Journal of Statistical Planning and Inference, 139, 246-255. PMID: 20183460
- Saha C, Jones MP (2016). Type I and Type II error rates in the last observation carried forward   method under informative dropout. Journal of Applied Statistics, 43(2):336-350.

3. Analysis of Left-Censored Data

Toxicological studies often depend on laboratory assays that have thresholds below which environmental pollutants cannot be measured with accuracy. Exposure levels below this limit of detection may well be toxic and bioaccumulate, hence it is vital to use data analytic methods that handle such left-censored data with as little estimation bias as possible. I

developed computationally feasible methods for estimation of covariance and correlation matrices on a large number of variables subject to 0 - 75% left censoring. The current norm of imputation methods suffer substantial bias, whereas the proposed pseudo-likelihood methods suffer little bias. Principal component analysis can now be performed accurately for heavily censored data. Furthermore, methods for linear regression with left-censored covariates and outcome variable have recently been developed. Applications at Iowa include a multi-year community-based study of exposure to subtypes (congeners) of polychlorinated biphenyls (PCBs).

- Jones MP, Perry SS, Thorne PS. (2015) Maximum pairwise pseudo-likelihood estimation of the covariance matrix from left-censored data. Journal of Agricultural, Biological and Environmental Statistics, 20, 83-99.
- Jones MP. (2018) Linear regression with left-censored covariates and outcome using a pseudolikelihood approach. Environmetrics. 2018;e2536. https://doi.org/10.1002/env.2536

4. Collaborative Research

I have had a long and successful working relationship with researchers in the Colleges of Public Health, Medicine, Dentistry and the Iowa City VA. Research areas have included epidemiology, environmental and occupational health, cancer, cardiology, neurology, aging studies, health services, injury prevention, dentistry and many others. The following publications derive from my collaborations with Drs. Elizabeth Chrischilles and Mary Vaughan Sarrazin, key members of the research proposal.

- Vaughan Sarrazin MS, Mazur A, Chrischilles EA, Jones MP, Cram P (2014). Trends in the pharmacologic management of atrial fibrillation: Data from the Veterans Affairs health system. *American Heart Journal*, 168(1):53-59. PMID: 24952860
- Vaughan Sarrazin MS, Jones MP, Mazur A, Chrischilles EA (2014). Bleeding rates in veterans affairs patients with atrial fibrillation who switch from warfarin to dabigatran. *The American Journal of Medicine*, 127:1179-1185. PMID: 25107386
- Amman EM, Jones MP, Link BK, Carnahan RM, Winiecki SK, Torner JC, McDowell BD, Fireman BH, Chrischilles EA (2016). Intravenous immune globulin and thromboembolic adverse events in patients with hematologic malignancy. Blood, 127(2):200-207. PMC: PMC4713161, PMID: 26443622

- Ammann EM, Haskins CB, Fillman KM, Ritter RL, Gu X, Winiecki SK, Carnahan RM, Torner JC, Fireman BH, Jones MP, Chrischilles EA (2016). Intravenous immune globulin and thromboembolic adverse events: A systematic review and meta-analysis of RCTs. *American Journal of Hematology*, 91(6):594-605. PMID: 26973084

Here is a link to my partial bibliography:

http://www.ncbi.nlm.nih.gov/sites/myncbi/1pa1tcCs5hyku/bibliograpahy/48997088/public/?sort=date&direction=ascending

D. Additional Information: Research Support and/or Scholastic Performance

Ongoing Research

CIN 13-412 Perencevich (PI)   10/1/13 - 9/30/19
VA HSR&D
Center of Innovation (COIN)
The Comprehensive Access & Delivery Research and Evaluation Center (CADRE) at the Iowa City Veterans Affairs Medical Center is funded by HSR&D COIN to develop, implement, and test innovative strategies that expand access to high-quality primary and specialty care, while ensuring that the care delivered is safe and free of preventable infections.
Role: Biostatistician/Co-Investigator

5 P42 ES013661 Robertson (PI)   5/12/06-3/31/20
NIH
Iowa Superfund Research Program: Semi-Volatile PCS: Sources, Exposures, Toxicities
Role: Co-Investigator

P30 ES005605 Thorne (PI)   9/1/17-3/31/19
NIEHS/NIH
EHSRC Pilot Grant: Statistical Methods for Left-Centered Toxicology Data
Environmental exposure studies typically depend on laboratory assays that have thresholds below which environmental pollutants cannot be measured with accuracy. Exposure levels below this limit of quantification may well be toxic or bioaccumulate to toxic levels. In order to obtain accurate and meaningful results, it is therefore vital to use data analytic

methods that handle such left-censored data with as little estimation bias as possible. Historically, environmental toxicologists have estimated basic summary statistics of exposure, such as the median and geometric mean. Today, more complex questions arise in toxicology and environmental epidemiology which require development of more sophisticated methods of data analysis. The aims of this proposal are (i) to develop new statistical methods for the estimation of the means and covariance matrice of left-censored contaminant levels under settings in which exposure may depend on subject-specific characteristics, (ii) to develop regression methods in which both the outcome variable and covariates may be subject to left censoring, and (iii) to illustrate these methods using data from an on-going community based study of exposure and body burden of polychlorinated biphenyls (PCBs).
Role: Project Director

MED-16-022 Damiano (PI)   10/1/15 - 4/30/19
Iowa Department of Human Services
Iowa's State Innovation Models (SIM) Y4
To conduct robust evaluations that demonstrate the effectiveness of the Iowa multi-payer value-based purchasing model based on the specific needs within Iowa's State Innovation Models (SIM) Cooperative Agreement with CMS.
Role: Co-Investigator

5 R01 AG055663 Vaughan Sarrazin (PI)   9/15/17 - 4/30/20
NIH
Dosing of Direct Oral Anticoagulants for Stroke Prevention in
Atrial Fibrillation: Patterns, Consequences, and Guidance
Role: /Co-Investigator

Completed Research

IIR 07-145 (Rosenthal)   3/1/09-12/31/13
VA HSR&D (part of CADRE above)
Trial of Low and High Intensity Strategies to Maintain BP
Control
This study will provide important insights on the long-term control of blood pressure (BP) in patients with hypertension (HTN). Specifically, the study will determine whether patients with uncontrolled HTN require long-term continued intensive intervention or of such patients can be provided with a less intense intervention and returned to primary care after the initial control of BP.
Role: Co-Investigator

1IP2PI000659 (Wolinsky)   10/15/12-12/31/14
PCORI
Methodologies to Adjust for Respondent Status Effects on Health Outcomes

The goal of this study is to develop new methods for identifying and adjusting for respondent status bias in health survey interviews.
Role: Co-Investigator

5 R01 AG333035 (Wolinsky)   5/1/10-3/31/17
NIH
A Patient Activation Intervention to Improve Bone Health
Role: Co-Investigator

1 R01 HS023104 (Vaughan Sarrazin, Mary)   9/1/14-2/28/17
AHRQ
Stroke Prevention for Atrial Fibrillation and Multiple Chronic Conditions
Role: Co-Investigator

5 R01 NR013908   (Smith, Marianne)   9/26/12-6/30/18
NIH
Improving Mood in Assisted Living Using a Cognitive Training Intervention
Role: Biostatistician