

## BIOGRAPHICAL SKETCH

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| NAME<br>Culhane, Jennifer Flatow | POSITION TITLE<br>Associate Professor of Obstetrics and Gynecology |
| eRA COMMONS USER NAME            |  |

| EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.) |                           |         |                |
|--|---------------------------|---------|----------------|
| INSTITUTION AND LOCATION   | DEGREE<br>(if applicable) | YEAR(s) | FIELD OF STUDY |
| Mount Holyoke College, South Hadley, MA  | BA                        | 1985    | Biochemistry   |
| Temple University, Philadelphia, PA  | MPH                       | 1993    | Public Health  |
| Temple University, Philadelphia, PA  | PhD                       | 1998    | Public Health  |

### A. POSITIONS AND HONORS

#### Positions and Employment

- 1985-1988     Research Associate, Dana Farber Cancer Institute, Boston Massachusetts
- 1988-1990     Senior Research Scientist, T-Cell Sciences, Cambridge, Massachusetts
- 1994-1997     Research Associate, Thomas Jefferson University, Department of Pediatrics, Philadelphia, PA
- 1996-1998     Director of the *Healthy Start* evaluation, Philadelphia Department of Public Health, Office of Maternal and Child Health
- 1997-2001     Director of Research, The Health Federation of Philadelphia, Philadelphia, PA
- 2001-           Research Associate, Population Studies Center, University of Pennsylvania
- 2001-2004     Assistant Professor of Obstetrics and Gynecology, Thomas Jefferson University, Jefferson Medical College. Philadelphia, PA
- 2004-           Associate Professor of Obstetrics and Gynecology, Drexel University College of Medicine, and Drexel University School of Public Health Philadelphia, PA.

#### Honors and Professional Recognition

- 2002           Society for Maternal-Fetal Medicine, Award of Research Excellence, poster presentation: Racial/Ethnic Differences in BV in Pregnancy: The Role of Individual and Contextual-level Maternal Stress, Culhane, JF, Rauh VA, Hogan V, McCollum K, Wadhwa PD
- 2005           Committee on Understanding Premature Birth and Assuring Healthy Outcomes, Institute of Medicine

### B. SELECTED PEER-REVIEWED PUBLICATIONS (SINCE 1993)

- Wright, Joel E., Andre Rosowsky, Carol A. Cucchi, Jennifer Flatow, and Emil Frei, III. 1993. "Methotrexate and [Gamma]-Tert-Butyl Methotrexate Transport in CEM and CEM/MTX Human Leukemic Lymphoblasts." *Biochemical Pharmacology* 46(5):871-876.
- Haignere, Clara S. and Jennifer F. Culhane. 1996. "Teachers' Receptiveness and Comfort Teaching Sexuality." *Journal of School Health* 66(4):140-144.
- Teicher, Beverly A., Sylvia A. Holden, Carol A. Cucchi, Kathleen N.S. Cathcart, Timothy T. Korbut, Jennifer Flatow, and Emil Frei, III. 1998. "Combination of N,N',N"-Triethylenethiophosphoramidate and Cyclophosphamide in Vitro and in Vivo." *Cancer Research* 48(1):94-100.
- Gibson, Eric, Jennifer F. Culhane, Terri Saunders, David Webb, and Jay S. Greenspan. 2000. "Effect of Nonviable Infants on the Infant Mortality Rate in Philadelphia, 1992." *American Journal of Public Health* 90(8):1303-1306.
- Rauh, Virginia A., Jennifer F. Culhane, and Vijaya K. Hogan. 2000. "Bacterial Vaginosis: A Public Health Problem for Women." *Journal of the American Women's Medical Association* 55(4):220-224.
- Culhane, Jennifer F., Virginia A. Rauh, Kelly F. McCollum, Vijaya K. Hogan, Kathy J. Agnew, and Pathik D. Wadhwa. 2001. "Maternal Stress Is Associated with Bacterial Vaginosis in Human Pregnancy." *Maternal & Child Health Journal* 5(2):127.
- Wadhwa, Pathik D., Jennifer F. Culhane, Virginia A. Rauh, and Shirish S. Barve. 2001. "Stress and Preterm Birth: Neuroendocrine, Immune/Inflammatory, and Vascular Mechanisms." *Maternal & Child Health Journal* 5(2):119.
- Wadhwa, Pathik D., Jennifer F. Culhane, Virginia A. Rauh, Shirish S. Barve, Vijaya K. Hogan, Curt A. Sandman, Calvin J. Hobel, Aleksandra Chicz-DeMet, Christine Dunkel-Schetter, Thomas J. Garite, and

- Laura Glynn. 2001. "Stress, Infection and Preterm Birth: A Biobehavioural Perspective." *Paediatric & Perinatal Epidemiology* 15(3):17-29.
- Webb, David, Jennifer F. Culhane, Scott Snyder, and Jay S. Greenspan. 2001. "Pennsylvania's Early Discharge Legislation: Effect on Maternity and Infant Lengths of Stay and Hospital Charges in Philadelphia." *Health Services Research* 36(6 Pt 1):1073-1083.
- Culhane, Jennifer F., Virginia A. Rauh, Kelly F. McCollum, Irma T. Elo, and Vijaya K. Hogan. 2002. "Exposure to Chronic Stress and Ethnic Differences in Rates of Bacterial Vaginosis among Pregnant Women." *American Journal of Obstetrics and Gynecology* 187(5):1272-1276.
- Webb, David and Jennifer F. Culhane. 2002. "Hospital Variation in Episiotomy Use and the Risk of Perineal Trauma During Childbirth." *Birth* 29(2):132-136.
- Webb, David and Jennifer F. Culhane. 2002. "Time of Day Variation in Rates of Obstetric Intervention to Assist in Vaginal Delivery." *Journal of Epidemiology & Community Health* 56(8):577-578.
- Culhane, Jennifer F., David Webb, Susan Grim, Stephen Metraux, and Dennis Culhane. 2003. "Prevalence of Child Welfare Services Involvement among Homeless and Low-Income Mothers: A Five-Year Birth Cohort Study." *Journal of Sociology & Social Welfare* 30(3):79-95.
- Goldenberg, Robert L. and Jennifer F. Culhane. 2003. "Infection as a Cause of Preterm Birth." *Clinics in Perinatology* 30(4):677-700.
- Hobel, Calvin J. and Jennifer F. Culhane. 2003. "Role of Psychosocial and Nutritional Stress on Poor Pregnancy Outcome." *Journal of Nutrition* 133(5, Supplement 2):1709S-1717.
- Webb, David, Jessica M. Robbins, Jennifer F. Culhane, Stephen Metraux, and Dennis Culhane. 2003. "Prevalence of Episodic Homelessness among Adult Childbearing Women in Philadelphia, PA." *American Journal of Public Health* 93(11):1895-1896.
- Chung, Esther K., Kelly F. McCollum, Irma T. Elo, Helen J. Lee, and Jennifer F. Culhane. 2004. "Maternal Depressive Symptoms and Infant Health Practices among Low-Income Women." *Pediatrics* 113(6):e523-e529.
- Goldenberg, Robert L., R. Kirby, and Jennifer F. Culhane. 2004. "Stillbirth: A Review." *Journal of Maternal-Fetal & Neonatal Medicine* 16(2):79-94.
- Culhane, Jennifer F., Davide Desanto, Robert L. Goldenberg, Kelly F. McCollum, Felicia King, and Secondo Guaschino. 2005. "Variation in Nugent Score and Leukocyte Count in Fluid Collected from Different Vaginal Sites." *Obstetrics & Gynecology* 105(1):120-123.
- Culhane, Jennifer F. and Irma T. Elo. 2005. "Neighborhood Context and Reproductive Health." *American Journal of Obstetrics and Gynecology* 192(5, Supplement 1):S22-S29.
- DuPont, Nefertiti C., Kehui Wang, Pathik D. Wadhwa, Jennifer F. Culhane, and Edward L. Nelson. 2005. "Validation and Comparison of Luminex Multiplex Cytokine Analysis Kits with Elisa: Determination of a Panel of Nine Cytokines in Clinical Sample Culture Supernatants." *Journal of Reproductive Immunology* 66(2):175-191.
- Goldenberg, Robert L., Jennifer F. Culhane, and Derek C. Johnson. 2005. "Maternal Infection and Adverse Fetal and Neonatal Outcomes." *Clinics in Perinatology* 32(523-559).
- Haas, Jennifer S., Elena Fuentes-Afflick, Anita L. Stewart, Rebecca A. Jackson, Mitzi L. Dean, Phyllis Brawarsky, and Gabriel J. Escobar. 2005. "Prepregnancy Health Status and the Risk of Preterm Delivery." *Archives of Pediatric and Adolescent Medicine* 159(1):58-63.
- Lee, Helen J., Margarita R. Rubio, Irma T. Elo, Kelly F. McCollum, Esther K. Chung, and Jennifer F. Culhane. 2005. "Factors Associated with Intention to Breastfeed among Low-Income, Inner-City Pregnant Women." *Maternal & Child Health Journal* 9(3):253-261.
- Pereira, Leonardo, Jennifer F. Culhane, and Kelly F. McCollum. 2005. "Variation in Microbiologic Profiles among Pregnant Women with Bacterial Vaginosis." *American Journal of Obstetric Gynecology* 193(3):746-751.
- Bennett, Ian M., Jennifer F. Culhane, and Kelly F. McCollum. 2006. "Unintended Repeat Pregnancy and Low Educational Status: Any Role for Depression and Contraception Use?" *American Journal of Obstetrics and Gynecology* 194(3):749-754.
- Castrucci, Brian C., Jennifer F. Culhane, Kelly F. McCollum, Esther K. Chung, and Ian M. Bennett. 2006. "Smoking in Pregnancy: Patient and Provider Risk Reduction Behavior." *Journal of Public Health Management and Practice* 12(1):68-76.
- Cauci, Sabina and Jennifer F. Culhane. 2006. "Modulation of Vaginal Immune Response among Pregnant Women with Bacterial Vaginosis by *Trichomonas Vaginalis*, *Chlamydia Trachomatis*, *Nesisseria Gonorrhoeae*, and Yeast." *American Journal of Obstetrics and Gynecology* 196(2):133.e131-133.e137.

- Chung, Esther K., Kelly F. McCollum, Irma T. Elo, and Jennifer F. Culhane. 2006. "Factors Associated with Leaving Community-Based Health Centers and Using Other Sites for Infant Primary Care." *Ambulatory Pediatrics* 6(1):25-31.
- Culhane, Jennifer F., Paul Nyirjesy, Kelly F. McCollum, Robert L. Goldenberg, Shari E. Gelber, and Sabina Cauci. 2006. "Variation in Vaginal Immune Parameters and Microbial Hydrolytic Enzymes in Bacterial Vaginosis Positive Pregnant Women with and without Mobiluncus Species." *American Journal of Obstetrics and Gynecology* 195(2):516-521.
- Goldenberg, Robert L. and Jennifer F. Culhane. 2006. "Preterm Birth and Periodontal Disease." *New England Journal of Medicine* 355(18):1925-1927.
- Goldenberg, Robert L. and Jennifer F. Culhane. 2006. "Stress, Bacterial Vaginosis and the Role of Immune Processes." *Current Infectious Disease Reports* 8(6):459-464.
- Lu, Michael, Milton Kotelchuck, Jennifer F. Culhane, Calvin J. Hobel, Lorraine Klerman, and John Thorp. 2006. "Preconception Care between Pregnancies: The Content of Internatal Care." *Maternal and Child Health Journal* 10(0):107-122.
- Messer, Lynne C., Barbara A. Laraia, Jay S. Kaufman, Janet Eyster, Claudia Holzman, Jennifer F. Culhane, Irma T. Elo, Jessica G. Burke, and Patricia O'Campo. 2006. "The Development of a Standardized Neighborhood Deprivation Index." *Journal of Urban Health* 83(6):1041-1062.
- Nyirjesy, Paul, Christina Peyton, M. Velma Weitz, Leny Mathew, and Jennifer F. Culhane. 2006. "Causes of Chronic Vaginitis: Analysis of a Prospective Database of Affected Women." *Obstetrics & Gynecology* 108(5):1185-1191.
- Banda, Yolanda, Victoria Chapman, Robert L. Goldenberg, Jeffrey S. A. Stringer, Jennifer F. Culhane, Moses Sinkala, Sten H. Vermund, and Benjamin H. Chi. 2007. "Use of Traditional Medicine among Pregnant Women in Lusaka, Zambia." *The Journal of Alternative and Complementary Medicine* 13(1):123-128.
- Bennett, Ian M., Jennifer F. Culhane, Kelly F. McCollum, Leny Mathew, and Irma T. Elo. 2007. "Literacy and Depressive Symptomatology in Pregnancy among Latinas with Limited English Proficiency." *American Journal of Orthopsychiatry* 77(2):243-248.
- Goldenberg, Robert L. and Jennifer F. Culhane. 2007. "Low Birth Weight in the United States." *American Journal of Clinical Nutrition* 85(2):584S-590.
- Chung, Esther K., R. L. Miller, M. T. Wilson, S. J. McGeady, and Jennifer F. Culhane. Forthcoming. "Antenatal Exposure, Neonatal Cytokines and Pediatric Atopic Disease." *The Journal of Pediatrics*.
- Hogan, Vijaya K., Jennifer F. Culhane, Virginia A. Rauh, Kelly F. McCollum, Kathy J. Agnew, and Jane Hitti. Forthcoming. "Relative Performance of Three Methods for Diagnosing Bacterial Vaginosis During Pregnancy." *Maternal & Child Health Journal*.
- Lee, Helen J., Irma T. Elo, Kelly F. McCollum, and Jennifer F. Culhane. Forthcoming. "Racial/Ethnic Differences in Breastfeeding Initiation and Duration among Low-Income, Inner-City Mothers." *Social Science Quarterly*.

## C. RESEARCH SUPPORT

### Ongoing Research Support

NIMH R03-MH-074750 (Bennett) 9/15/2005-6/30/2008 Co-PI  
 Obstacles to Maternal Depression Care Among Women with Low Literacy  
 This grant is a qualitative addition to a larger quantitative intervention study of women who have had a preterm birth. The role of low literacy among women with major depression will be studied to examine the relationship between patient attitudes to utilization of free depression care. It adopts a mixed quantitative/qualitative methodology.

NICHD NO1-HD-53414 (Culhane/Schwarz) 9/30/2005-12/31/2010 Site PI  
 The National Children's Study: The Chop/Drexel Vanguard Site (2004-07)  
 The NCS is a prospective cohort study of 100,000 children enrolled in the preconception or prenatal period and followed through 21 years of age. Drs. Culhane and Schwarz will collectively run the Montgomery County PA site where 1,250 participants will be recruited. This project is designed to explore the many exposures, and their complex interactions, associated with growth and development.

DOH RFA 02-07-20 (Culhane) 6/01/2004-5/30/2008 PI

Pennsylvania State Department of Health Center of Excellence for Research on Pregnancy Outcomes  
The Philadelphia Collaborative Preterm prevention Project

This project is a large prospective randomized trial aimed at reducing repeat preterm births in Philadelphia women who just experienced a preterm birth at < 34 weeks GA. By targeting a wide variety of risk factors for preterm birth including identification and treatment of infections, smoking, stress, depression, and abnormal weight (too high or too low) and by delaying repeat pregnancy, we believe we can reduce the repeat preterm birth rate. In addition to their direct effect on risk of preterm birth, we hypothesize that these seemingly disparate yet well-known risk conditions lead to PTB through a common physiological mechanism, increase in systemic inflammation. We are testing the hypothesis that reducing inflammation prior to pregnancy will reduce the likelihood of a repeat preterm birth. This research is novel because it is focusing on an extremely high-risk group in the inter-conceptual period, using a multi risk factor reduction approach and because we are testing a novel biological pathway.

DHS/HRSA 02-MCHB-33A (Culhane) 9/30/02–9/30/2007 PI  
Targeting Programs for Reducing Racial, Ethnic and Geographical Health Disparities  
The objective of this project is to employ multi-level modeling techniques to examine various socio-environmental influences—including access to grocery stores and restaurants, directly observed neighborhood conditions and resources and crime rates—and individual characteristics and behaviors that may influence preterm birth.

**Completed Research Support**

CDC H75/CCH324848-01 (Culhane) 7/10/2005-9/09/2006 PI  
Reproductive Health Earmarks  
This Congressional appropriation funds the development of a quality benchmarking data base for antenatal and obstetric care. During this year of funding a scientific advisory board will develop the quality measures for pregnancy and labor and delivery. The Peri-Trak system will mirroring the Vermont Oxford Network, a quality benchmarking system for neonatal intensive care.

March of Dimes (Culhane) 10/1/2004-9/30/2005 PI  
Pennsylvania Chapter Community Grant  
Rethinking Prenatal Services: Implementing Group Care with an Emphasis on the Social Determinants of Health.

ATPM/CDC TS 312-15/15 (Culhane) 9/1/2000-8/3/2005 PI  
Biologic Pathways Linking Stress, BV and Preterm Birth  
Role: PI

NICHD ROI-D36462-01A I (Elo) 10/01/1999-9/31/2005 Co-PI  
Racial and Neighborhood Disparities in Infant Health

ATPM/CDC TS-0626 (Culhane) 10/01/2001-9/30/2006 PI  
Preterm Birth and Race: A Study of Individual and Spatial Effects

ATPM/CDC TS-0561 (Culhane ) 10/01/2001-9/30/2005 PI  
Microbial and Immune Parameters Associated with Prematurity