

ALEXA A. FREEDMAN

Northwestern University
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EDUCATION AND TRAINING

- 2018 – **Northwestern University**
Postdoctoral Fellow, Institute for Policy Research
- 2018 – **NorthShore University HealthSystem, Evanston Hospital**
Postdoctoral Fellow, Department of Obstetrics & Gynecology
- 2013 – 2018 **Emory University**
Ph.D., Epidemiology
- 2009 – 2013 **University of Rochester**
B.A., Epidemiology with minor in Biology, *cum laude*

FELLOWSHIPS, HONORS & AWARDS

- 2021 – 2022 Racial and Socioeconomic Disparities and their Effects on the Health of Children: Research Grant (\$25,000), Society for Pediatric Pathology
- 2020 Benirschke Perinatal Pathology Award for conference abstract, “Formulating a Meaningful and Comprehensive Placental Pathology Classification Which Addresses Multiplicity, Grade and Temporal Distribution of Lesions,” Society for Pediatric Pathology
- 2019 – 2022 *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, National Institutes of Health Ruth L. Kirschstein Postdoctoral Individual Research Service Award. Award number: F32HD100076
- 2017 – 2018 *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, National Institutes of Health Ruth L. Kirschstein Predoctoral Individual Research Service Award. Award number: F31HD092025
- 2014 – 2016 *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, National Institutes of Health T32 Predoctoral Training Program in Reproductive, Perinatal, and Pediatric Epidemiology. Award number: T32HD052460
- 2013 – 2014 Maternal Child Health Bureau, Health Resources and Services Administration MCH Epidemiology Doctoral Training Program. Award number: T03MC07651
- 2013 High Distinction in Epidemiology, University of Rochester
- 2013 Phi Beta Kappa, University of Rochester
- 2009 – 2013 Dean’s List, University of Rochester

PUBLICATIONS

Freedman AA, Miller GE, Keenan-Devlin LS, Smart BP, Romero J, Borders A, Ernst LM (2021). Adverse Pregnancy Outcomes Following the Assassination of John F. Kennedy in 1963. *Maternal and Child Health Journal*. Online ahead of print.

Freedman AA, Smart BP, Keenan-Devlin LS, Romero J, Franklin A, Borders A, Ernst LM, Miller GE (2021). Time-dependent changes in placental mRNA expression after delivery due to delayed specimen collection. *American Journal of Reproductive Immunology*, e13452. Online ahead of print.

Ernst LM, Mithal LB, Mestan K, Wang V, Mangold KA, **Freedman A**, Das S (2021). Umbilical cord miRNAs to predict neonatal early onset sepsis. *PLoS One*, 16(5):e0249548.

Freedman AA, Keenan-Devlin LS, Borders A, Miller GE, Ernst LM (2021). Formulating a Meaningful and Comprehensive Placental Phenotypic Classification. *Pediatric and Developmental Pathology*. Online ahead of print.

Ernst LM, Bockoven C, **Freedman A**, Wang V, Pellerite M, Wylie TN, Wylie KM (2021). Chronic villitis of unknown etiology: Investigations into viral pathogenesis. *Placenta*, 107:24-30.

MacGregor C, **Freedman A**, Keenan-Devlin L, Grobman W, Wadhwa P, Simhan HN, Buss C, Borders A (2020). Maternal perceived discrimination and association with gestational diabetes. *American Journal of Obstetrics & Gynecology MFM*, 2(4):100222.

Caplan M, Keenan-Devlin LS, **Freedman A**, Grobman W, Wadhwa PD, Buss C, Miller GE, Borders AEB (2020). Lifetime Psychosocial Stress Exposure Associated with Hypertensive Disorders of Pregnancy. *American Journal of Perinatology*. Online ahead of print.

Freedman AA, Goldstein JA, Miller GE, Borders A, Keenan-Devlin L, Ernst LM (2020). Seasonal Variation of Chronic Villitis of Unknown Etiology. *Pediatric and Developmental Pathology*, 23(4):253-259.

Freedman AA, Silver RM, Gibbins KJ, Hogue CJ, Goldenberg RL, Dudley DJ, Pinar H, Drews-Botsch C (2019). The association of stillbirth with placental abnormalities in growth-restricted and normally grown fetuses. *Paediatric and Perinatal Epidemiology*, 33(4):274-383.

Gupta PM, **Freedman AA**, Kramer MR, Goldenberg RL, Willinger M, Stoll BJ, Silver RM, Dudley DJ, Parker CB, Hogue CJR (2019). Interpregnancy interval and risk of stillbirth: a population-based case control study. *Annals of Epidemiology*, 35:35-41.

Gibbins KJ, Pinar H, Reddy UM, Saade GR, Goldenberg RL, Dudley DJ, Drews-Botsch C, **Freedman AA**, Daniels LM, Parker CB, Thorsten V, Bukowski R, Silver RM (2020).

Findings in Stillbirths Associated with Placental Disease. *American Journal of Perinatology*, 37(7):708-715.

Freedman AA, Hogue CJ, Marsit CJ, Rajakumar A, Smith AK, Grantz KL, Goldenberg RL, Dudley DJ, Saade GR, Silver RM, Gibbins KJ, Bukowski R, Drews-Botsch C (2019). Associations Between Features of Placental Morphology and Birth Weight in Dichorionic Twins. *American Journal of Epidemiology*, 188(3):518-526.

Freedman AA, Kipling LM, Labgold K, Hogue CJ, Marsit CJ, Rajakumar A, Smith AK, Pinar H, Conway D, Bukowski R, Goldenberg RL, Varner MW, Drews-Botsch C (2018). Comparison of dimeter-based and image-based measures of surface area from gross placental pathology for use in epidemiologic studies. *Placenta*, 69:82-85.

Freedman AA, Hogue CJ, Marsit CJ, Rajakumar A, Smith AK, Goldenberg RL, Dudley DJ, Saade GR, Silver RM, Gibbins KJ, Stoll BJ, Bukowski R, Drews-Botsch C (2019). Associations between features of gross placental morphology and birthweight. *Pediatric and Developmental Pathology*, 22(3):194-204.

Hacihanoglu E, Avadhani V, Memis B, Pehlivanoglu B, **Freedman AA**, Goodman MM, Adsay V, Reid MD (2018). Factors Impacting the Performance Characteristics of Bile Duct Brushings: A Clinico-Cytopathologic Analysis of 253 Patients. *Archives of Pathology & Laboratory Medicine*, 142(7):863-870.

Muraki T, Kim GE, Reid MD, Mittal P, Bedolla G, Memis B, Pehlivanoglu B, **Freedman A**, Erbarut SI, Choi H, Kooby D, Maithel SK, Sarmiento JM, Krasinskas A, Adsay V (2017). Paraduodenal Pancreatitis: Imaging and Pathologic Correlation of 47 Cases Elucidates Distinct Subtypes and the Factors Involved in its Etiopathogenesis. *American Journal of Surgical Pathology*, 41(10):1347-1363.

Freedman AA, Cammack AL, Temple JR, Silver RM, Dudley DJ, Stoll BJ, Varner MW, Saade GR, Conway D, Goldenberg RL, Hogue CJ (2017). Maternal exposure to childhood maltreatment and risk of stillbirth. *Annals of Epidemiology*, 27(8):459-465.e2.

Freedman AA, Hogue CJ, Dudley DJ, Silver RM, Stoll BJ, Pinar H, Goldenberg RL, Drews-Botsch C (2017). Associations between Maternal and Fetal Inherited Thrombophilias, Placental Characteristics Associated with Vascular Malperfusion, and Fetal Growth. *TH Open*, 1(1):e43-e55.

Avadhani V, Hacihanoglu E, Memis B, Pehlivanoglu B, Hanley KZ, Krishnamurti U, Krasinskas AM, Osunkoya AO, Daniels LM, **Freedman AA**, Goodman M, Adsay V, Reid MD (2017). Cytologic predictors of malignancy in bile duct brushings: a multi-reviewer analysis of 60 cases. *Modern Pathology*, 30(9):1273-1286.

Muraki T, Memis B, Reid MD, Uehara T, Ito T, Hasebe O, Okaniwa S, Horigome N, Hisa T, Mittal P, **Freedman A**, Maithel S, Sarmiento JM, Krasinskas A, Koshiol J, Adsay V (2017). Reflux-Associated Cholecystopathy: Analysis of 76 Gallbladders From Patients With Supra-

Oddi Union of the Pancreatic Duct and Common Bile Duct (Pancreatobiliary Maljunction) Elucidates a Specific Diagnostic Pattern of Mucosal Hyperplasia as a Prelude to Carcinoma. *American Journal of Surgical Pathology*, 41(9):1167-1177.

Glassford MR, Rosenfeld JA, **Freedman AA**, Zwick ME, Mulle JG; Unique Rare Chromosome Disorder Support Group (2016). Novel features of 3q29 deletion syndrome: Results from the 3q29 registry. *American Journal of Medical Genetics*, 170(4):999-1006.

CONFERENCE PRESENTATIONS

Freedman AA, Borders A, Smart BP, Keenan-Devlin LS, Ernst LM, Franklin A, Butler MS, Premkumar A, Kershaw KN, Papachristos AV, Miller GE (January 2021). Neighborhood Police Complaints Associated with Increased Preterm Delivery among Black Individuals. Oral presentation, Society for Maternal-Fetal Medicine, virtual conference.

Freedman AA, Borders A, Smart BP, Keenan-Devlin LS, Romero J, Franklin A, Ernst LM, Miller GE (January 2021). Stability of Placental mRNA Expression within 24 Hours of Delivery. Poster presentation, Society for Maternal-Fetal Medicine, virtual conference.

Freedman A & Ernst L (October 2020). Formulating a Meaningful and Comprehensive Placental Pathology Classification Which Addresses Multiplicity, Grade and Temporal Distribution of Lesions. Oral presentation (presented by L. Ernst), Society for Pediatric Pathology, virtual conference.

Freedman AA, Borders A, Keenan-Devlin LS, Smart BP, Romero J, Ernst LM, Miller GE (February 2020). Adverse Pregnancy Outcomes Following the Assassination of John F. Kennedy in 1963. Poster presentation (presented by A. Borders), Society for Maternal-Fetal Medicine, Grapevine, Texas.

Freedman AA, Silver RM, Gibbins KJ, Hogue CJ, Goldenberg RL, Dudley DJ, Pinar H, Drews-Botsch C (June 2019). The association of stillbirth with placental abnormalities in growth-restricted and normally grown fetuses. Oral presentation (presented by C. Drews-Botsch), Society for Pediatric and Perinatal Epidemiologic Research, Minneapolis, Minnesota.

Freedman AA, Miller GE, Ernst LM, Keenan-Devlin L, Cole S, Borders A (March 2019). Patterns in Gene Expression of Villous Tissue Based on Placental Pathology. Poster presentation, Society for Reproductive Investigation, Paris, France.

Freedman AA, Miller GE, Keenan-Devlin L, Ernst LM, Borders A (March 2019). Placental Pathology as a Mediator of the Association between Socioeconomic Status and Adverse Birth Outcomes. Poster presentation, Society for Reproductive Investigation, Paris, France.

Freedman AA, Keenan-Devlin L, Grobman W, Adam E, Simhan H, Culhane J, Buss C, Wadhwa P, Miller G, Borders A (March 2019). Childhood Disadvantage is Associated with Sleep Quality and Duration during Pregnancy. Poster presentation, Society for Reproductive Investigation, Paris, France.

Freedman AA, Borders A, Keenan-Devlin L, Grobman W, Adam E, Simhan H, Culhane J, Buss C, Wadhwa P, Miller G (February 2019). Sleep duration is associated with inflammatory markers in mid-pregnancy. Poster presentation (presented by A. Borders), Society for Maternal-Fetal Medicine, Las Vegas, Nevada.

Freedman AA, Drews-Botsch C, Hogue C, Marsit C, Smith, A (June 2018). Associations between placental morphology and cognitive assessments in singletons and dichorionic twins. Poster presentation (presented by C. Drews-Botsch), Society for Pediatric and Perinatal Epidemiologic Research, Baltimore, Maryland.

Freedman AA, Hogue CJ, Dudley DJ, Silver RM, Stoll BJ, Goldenberg RL, Drews-Botsch C (June 2017). Thrombophilia, placental abnormalities, and fetal growth. Poster presentation, Society for Epidemiologic Research, Seattle, Washington.

Freedman AA, Drews-Botsch C, Hogue C, Marsit C, Smith, A (June 2017). Sex-specific differences in gross placental morphology and fetal growth in singletons. Poster presentation, Society for Pediatric and Perinatal Epidemiologic Research, Seattle, Washington.

Freedman AA, Hogue CJ, Cammack AL, Temple JR, Silver RM, Dudley DJ, Stoll BJ, Varner MW, Saade GR, Conway D, Goldenberg RL (June 2016). Maternal exposure to childhood maltreatment and risk of stillbirth. Poster presentation, Society for Pediatric and Perinatal Epidemiologic Research, Miami, Florida.

Freedman AA, Hogue CJ, Cammack AL, Temple JR, Silver RM, Dudley DJ, Stoll BJ, Varner MW, Saade GR, Conway D, Goldenberg RL (April 2016). Maternal exposure to childhood maltreatment and risk of stillbirth. Oral presentation, Making Lifelong Connections: Leadership for MCHB Trainees, Albuquerque, New Mexico.

Freedman AA & Hogue CR (June 2015). Adverse childhood experiences and risk of stillbirth. Poster presentation, Society for Epidemiologic Research, Denver, Colorado.

ADDITIONAL RESEARCH EXPERIENCE

Emory University

2015 – 2016 Research Assistant, Department of Pathology

University of Rochester

2011 – 2013 Student Research Assistant, Center for Research Support

NON-DEGREE TRAINING

- 2021 Perinatal Pathology Course, Society for Pediatric Pathology
- 2020 Multilevel Modeling: A Second Course, Statistical Horizons
- 2017 Centre for Trophoblast Research Placental Biology Course, University of Cambridge

TEACHING EXPERIENCE

Emory University

- Spring 2018 Teaching Assistant, Children with Special Healthcare Needs
- Fall 2016 Teaching Assistant, Epidemiologic Modeling
- Spring 2016 Teaching Assistant, Foundations of Maternal and Child Health
- Fall 2015 Teaching Assistant, Epidemiologic Modeling
- Spring 2015 Teaching Associate, Applications of Epidemiologic Concepts
- Fall 2014 Teaching Assistant, Epidemiologic Methods I

PROFESSIONAL MEMBERSHIPS

- 2016 – Society for Pediatric and Perinatal Epidemiologic Research
- 2013 – Society for Epidemiologic Research

ADDITIONAL SKILLS

Computing: SAS, R, SPSS, ArcGIS