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## BIOGRAPHICAL SKETCH

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### Hartmann, Katherine E.

#### POSITION TITLE

Associate Dean for Clinical and Translational Scientist Development, Deputy Director, Institute for Medicine and Public Health, Director, Women's Health Research at Vanderbilt, Lucius Burch Professor, Obstetrics & Gynecology

#### EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
Johns Hopkins University, Baltimore, MD	BA	05/1986	Writing Seminars
Johns Hopkins University, Baltimore, MD	MA	05/1986	Science Writing
Johns Hopkins University, Baltimore, MD	MD	05/1992	Medicine
University of North Carolina, Chapel Hill, NC	PhD	12/1999	Epidemiology

### A. Personal Statement

Hallmarks of Dr. Hartmann's career include conduct of rigorous research that unfailingly focuses on answers that matter to women and their care providers. She is a rare OB/GYN who is also a PhD epidemiologist which has led to additional roles in wider policy-relevant areas including health services, health outcomes, cost analysis, and informed medical decision-making. The majority of her research pivots on *Right from the Start*, a multi-ethnic pregnancy cohort with more than 6,900 women from seven metropolitan areas, genetic epidemiology discovery in the Vanderbilt BioVU genetic repository and related consortia, and research in the *Women's Health Initiative* investigating the role of thyroid disease in risk for myocardial infarction and thrombotic stroke as it informs need for thyroid function screening in clinical care. Alongside conducting her own NIH-funded research, she remains a role model for making research actionable. She has served on and provided data to state legislators and advocacy groups, led preparation of multiple Women's Health Reports Cards for both North Carolina and Tennessee, led a statewide smoking cessation demonstration project, advised many federal, state, and professional groups, written numerous pivotal publications that have influenced care, and worked quietly behind the scenes to provide factual information to inform academic training, infrastructure, and healthcare policy.

### B. Recent Positions

2006-2011 Vice Chair for Research, OB/GYN, Vanderbilt University School of Medicine  
2006- Deputy Director, Institute for Medicine and Public Health, Vanderbilt University  
2006- Director, Women's Health Research at Vanderbilt  
2006- Associate Professor, OB/GYN, Vanderbilt University School of Medicine  
2007- Director, Vanderbilt AHRQ Evidence-based Practice Center  
2008- Adjunct Associate Professor, Obstetrics and Gynecology, Meharry Medical College  
2011- Associate Dean for Clinical and Translational Scientist Development, Vanderbilt University  
2011- Professor, OB/GYN and Medicine, Vanderbilt University School of Medicine  
2011- Professor, OB/GYN, Meharry Medical College

### C. Contributions to Science

I have been fortunate to be able to focus my career on getting answers that matter to women and their care providers. The following examples

#### Breadth in research experience

bility of integration of an RCT into the clinical work flow. The following studies are examples of challenging protocols implemented in varied obstetric care settings:

Hartmann KE, Thorp, JM Jr, Pahel-Short LS, Koch MA. A randomized controlled trial of smoking cessation intervention in pregnancy in an academic clinic. *Obstet Gyn*, 1996 Apr;87(4):621-6. PMID: 8602320

Hartmann KE, Thorp JM, McDonald TL, Savitz DA, Granados JL. Cervical dimensions and risk of preterm birth. *Obstet Gyn*, 1999 Apr;93(4):504-9. PMID: 10214823

Reid VC, Hartmann KE, McMahan M, Fry EP. Vaginal preparation with povidone iodine and post-cesarean infectious morbidity: A randomized controlled trial. *Obstet Gyn*, 2001 Jan;97:147-52. PMID: 11152924  
(I was grant author and PI for this work.)

Landis SH, Lokomba V, Ananth CV, Atibu J, Ryder RW, Hartmann KE, Thorp JM, Tshetu A, Meshnick SR. Impact of maternal malaria and under nutrition on intrauterine growth restriction: A prospective ultrasound study in Democratic Republic of Congo. *Epidemiol Infect*, 2009 Feb;137(2): 294-304. PMID: 18588723

### **Large scale research about determinants of miscarriage**

*Right from the Start* is a population-representative prospective cohort that enrolled women from the community in seven metropolitan areas during early pregnancy or while planning to conceive. Since the beginning of recruitment in 2000 we have completed nearly 100 publications. These include publications that were first to 1) demonstrate recall bias accounts in large part for the previous association of caffeine use with miscarriage; 2) report a sizeable protective effect of multivitamin use around the time of conception against miscarriage; 3) identify reduced risk of miscarriage among black women who took NSAIDs in early pregnancy; and 4) document racial disparities in adverse pregnancy outcomes begin as early as differential risk of miscarriage.

Savitz DA, Chan RL, Herring AH, Howards PP, Hartmann KE. Caffeine and miscarriage risk. *Epidemiology*, 2008 Jan;19(1):55-62. PMID:18091004

Hasan R, Olshan AF, Herring AH, Savitz DA, Siega-Riz AM, Hartmann KE. Self-reported vitamin supplementation in early pregnancy and risk of miscarriage. *Am J Epidemiol*, 2009 Jun 1;169(11):1312-8. PMID:19372214. PMCID:2727248

Velez Edwards DR\*, Aldridge T, Baird DD, Funk MJ, Savitz DA, Hartmann KE. Periconceptional over-the-counter nonsteroidal anti-inflammatory drug exposure and risk for spontaneous abortion. *Obstet Gynecol*. 2012 Jul;120(1):113-22. PMID: 22914399. PMCID: 3427532 PMCID:2828396

Mukherjee S, Velez Edwards DR, Baird DD, Savitz D, Hartmann KE. Risk of miscarriage among black women and white women in a US prospective cohort study. *Am J Epidemiol*. 2013 Jun 1;177(11):1271-8. PMID:23558353. PMCID:3664339

### **Understanding the course and consequences of fibroids in pregnancy**

The RFTS portfolio includes study of the influence of uterine fibroids on pregnancy and vice versa. The unique contribution of this study is prospective recruitment from the community with standardized research ultrasounds for fibroids among all participants. Important contributions include providing: 1) the first documentation of prevalence of uterine fibroids in pregnancy; 2) MRI validation of the phenomena of fibroid resolution in the postpartum period; 3) a credible challenge to the clinical assertion that fibroids impair fertility; and 4) reassessment of the magnitude of the risk of cesarean among women with fibroids.

Laughlin SK, Baird DD, Savitz DA, Herring AH, Hartmann KE. Prevalence of uterine leiomyomas in the first trimester of pregnancy: an ultrasound-screening study. *Obstet Gynecol*, 2009 Mar;113(3):630-5. PMID: 19300327. PMCID:3384531

Laughlin SK\*, Herring AH, Savitz DA, Olshan AF, Fielding JR, Hartmann KE, Baird DD. Pregnancy-related fibroid reduction. *Fertil Steril*, 2010 Nov;94(6):2421-3. PMID: 20451187. PMCID: 2927730

Johnson G, MacLehose RF, Baird DD, Laughlin ST, Hartmann KE. Uterine leiomyomata and fecundability in the Right from the Start study. *Human Reprod*. 2012 Oct;27(10):2991-7. PMID:22811308. PMCID:3442631

Michels KA, Velez Edwards DR, Baird DD, Savitz DA, Hartmann KE. Uterine leiomyomata and cesarean birth risk: a prospective cohort with standardized imaging. *Ann Epidemiol*. 2014 Feb;24(2):122-6. PMID:24321612. PMCID:3926444

### **Synthesis of evidence to inform care**

During fellowship and early faculty life, I learned to conduct systematic evidence reviews and meta-analyses as part of the UNC Evidence-based Practice Center for the Agency for Healthcare Research and Quality. Doing so developed critical appraisal skills that became invaluable in my own grants and lines of research. At Vanderbilt, I became the founding director of our EPC, transitioning to Associate Director in the second round of funding, and now to Senior Fellow (I enjoy succession planning). These publications are examples of work from evidence reviews with obstetric topics that have had substantial influence of practice:

Hartmann KE, Viswanathan M, Palmieri R, Gartlehner G, Thorp J, Lohr KN. Outcomes of routine episiotomy: A systematic review. *JAMA*, 2005 May;293(17):2141-8. [JAMA Top 25 Articles of 2005 (most accessed)] PMID: 15870418\*

Visco AG, Viswanathan M, Lohr KN, Wechter ME, Gartlehner, Wu JM, Palmieri R, Funk MJ, Lux L, Swinson T, Hartmann K. Cesarean delivery on maternal request: A systematic review of maternal and neonatal outcomes. *Obstet Gyn*, 2006 Dec;108(6):1517-29. PMID: 17138788\*

Hartmann KE, McPheeters ML, Chescheir NC, Gillam-Krakauer M, McKoy JN, Jerome RN, Sathe NA, Meints L, Walsh W. Evidence to inform decisions about maternal-fetal surgery: technical brief. *Obstet Gyn*, 2011 May;117(5): 1191-204. PMID: 21471854.\*

Velez Edwards DR, Likis F, Andrews JC, Woodworth AL, Fonnesebeck CJ, Jerome RN, McKoy JN, Hartmann KE. Progestogens for preterm birth prevention: A systematic review and meta-analysis by drug route. *Arch Gynecol Obstet*. 2013 Jun;287(6):1059-66. PMID: 23532387.\*

\*Each of these was AHRQ funded and not eligible for PMCID.

Bibliographies: <http://www.ncbi.nlm.nih.gov/sites/myncbi/katherine.hartmann>  
<https://scholar.google.com/hartmann> (4,736 citations, h-index: 40, i10-index: 81)

#### D. Research Support

K12 HD043483-13 (Hartmann) 09/01/2012-07/31/2017  
NIH "Building Interdisciplinary Research Careers in Women's Health Career Development Program"  
Mentors junior faculty members conducting research based on sex and gender biology as they transition to research independence in interdisciplinary research careers spanning the spectrum from basic science to translational and patient-oriented research to population science. [Renewal in submission.]

HSA 290-2012-00009-I (McPheeters/Hartmann) 08/01/2012-08/31/2017  
AHRQ "Agency for Healthcare Research and Quality Evidence Based Practice Centers IV"  
Systematically reviews scientific literature on clinical, social, science/behavioral, and organization and financing topics to produce evidence reports and technology assessments. Reports are used for informing and developing coverage decisions, quality measures, educational materials and tools, guidelines, and research agendas. Our current content focus is women's health, child development, surgical procedures and interventions, and medical tests. The EPCs also conduct research on methodology of systematic reviews.  
Role: Director

5 UL1 TR000445-09 (Bernard) 06/27/2012-05/31/2017  
NIH/NCATS "The Vanderbilt Institute for Clinical and Translational Research (VICTR)"  
The specific aims of our renewal proposal are to: (1) systematically remove impediments to research translation; (2) create and make available novel, research-enabling infrastructure and resources; (3) train the next generation of investigators; (4) engage and involve the local community; and (5) define and continuously measure success in meeting objectives.  
Role: Co-PI for Education and Career Development [Renewal pending; score = 12]

5 U54 TR000123-05 (Bernard) 06/01/2011-05/31/2017  
NIH/NCRR "Clinical and Translational Science Coordinating Center"  
This project will: (1) create a highly visible and accessible national home for the CTSA including web portal; (2) provide meeting/communications/project management and orchestrate consortium output; (3) organize the consortium's networking resources; and (4) create and disseminate software (e.g. REDCap) and other tools that support translational research.  
Role: Co-Investigator

1 R01 HD074711-02 (Velez Edwards) 08/12/2013-04/30/2018  
NIH/NICHD "Understanding the Genetic Risk Underlying Racial Disparities in Uterine Fibroids"  
Though fibroids are heritable and there is a known disparity in fibroid risk, the literature about the genetics of fibroids remains meager. Little progress has been made relative to other complex diseases, despite federal agencies including NIH, NICHD, and AHRQ recognizing fibroids among their priority women's health topics. This genome-wide association study leverages ancestry for targeted fine mapping, targeted next-generation resequencing experiments, and larger-scale replication will be a crucial contribution to knowledge about the genetics of uterine fibroids.  
Role: Co-Investigator

Individual Contract (Hartmann) 10/01/2008-06/30/2021

NIH "Pelvic Floor Disorders Network"

Lead shared governance as the external steering committee chair for this eight site clinical trials network. I guide agenda development, facilitate meetings, lead discussion of policy and procedure implementation and changes, pace evaluation of proposed new protocols including ancillary and supplemental studies and public access to date, assure committee functions align with policies, guide processes for prioritizing selection and launch of new research, and moderate discussion of central budget, management conflict of interest, and resolution of poor site performance or ethical concerns.

Role: External Steering Committee Chair

Individual Contract (Hartmann) 09/01/2015-08/31/2017

PCORI/AHRQ "COMPARE-UF"

Serve as the external steering committee chair for this national multisite cohort funded by PCORI and AHRQ. We seek to determine the effectiveness of interventions in the context of women's preferences, including understanding what individual factors may determine natural history, outcomes, trajectories of care, and satisfaction with care. I provide expertise in operational aspects of administering a large-scale consortia including management of conflict of interest, advising on creation of policies and procedures, in-put on study protocol and data management systems, and moderation of meetings to maximize the group's ability to mobilize resources and set priorities.

Role: External Steering Committee Chair

Individual Contract (Hartmann) 07/01/2007-06/30/2017

"Informed Medical Decision Making Foundation"

Serves with IMDF, now a partner of Healthwise, as a medical editor to develop material to support patient decisions, integrate use of tools into healthcare, and design program evaluations. Current focus is on web-based decision-support tools for crucial decisions in maternity care such as vaginal birth after cesarean, induction of labor, antenatal genetic testing and choosing a care provider and birth setting.

### **Completed Research Support (Selected From Past 5 years)**

HHSN 275-2008-00004C (Hartmann) 09/26/2008-09/25/2013

NICHD "National Children's Study (NCS)"

Coordinated the Davidson County site in the largest longitudinal study of pediatric health in the United States. Vanderbilt was additionally contracted to pilot alternative recruitment strategies and to refine open source data collection systems for collaborative use by multiple NCS sites.

HHSN 27520130012C (Harris) 03/01/2012-08/31/2015

HHSN 275-2008-000040 (Harris/Hartmann)

NIH "National Children's Study (NCS) Information Management System Hub"

Transforming the information management infrastructure of the NCS by developing tools to support the conduct and management of the study in the REDCap data management system. We remain active in archiving of data and structural IMS systems to follow the Vanguard participants.

Role: Co-PI

HHSN 290-2007-10065-I (Hartmann) 09/01/2007-08/31/2012

AHRQ "Agency for Healthcare Research and Quality Evidence Based Practice Centers III"

Systematically reviewed scientific literature on clinical, social, science/behavioral, and organization and financing topics to produce evidence reports and technology assessments. Reports are used for informing and developing coverage decisions, quality measures, educational materials and tools, guidelines, and research agendas. Our focus was predominantly women's health and child development. The EPCs also conduct research on methodology of systematic reviews.

Role: PI/Director

K12 HD43483-10 (Brown) 08/01/2007-07/31/2012

NIH "Building Interdisciplinary Research Careers in Women's Health Career Development Program"

Mentored junior faculty members as they transition to research independence in interdisciplinary research career spanning the spectrum from basic science to translational and patient-oriented research to population science.

Role: Program Director

R01 HD049675-06 (Hartmann)

05/01/2006-02/28/2012

NICHD "Non-steroidal Anti-Inflammatory Use and Miscarriage"

Examined the association of NSAID use with spontaneous abortion. We enroll women planning a pregnancy and collect daily diaries of medication use, symptoms (indications) and other key confounders around conception. Participants collected daily diary information through the 12<sup>th</sup> week of pregnancy, had early ultrasound, completed an extensive interview, and provided access to medical records.

1 RC2 GM092618-02 (Masys)

09/30/2009-01/31/2012

NIH/NIGMS "VESPA: Vanderbilt Electronic Systems for Pharmacogenomic Assessment"

Used de-identified data from electronic health records coupled with a large DNA repository as a resource for investigating the genetic component of individual response to medications. The project investigated the relative contribution and reliability of the classes of information elements present in EHRs, and their effects on the certainty of inferring associations between genotypes and heterogeneously documented clinical phenotypes. This research was a core component of what is now a family of grants to advance personalized medicine.

Role: Co-Investigator