

# KATHERYNE DOWNES

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## EDUCATION

**PhD** Maternal and Child Health, 2015, University of Maryland School of Public Health, College Park, Maryland.

**Dissertation: Labor, Delivery, and Neonatal Outcomes Associated with Placental Abruption.**

**MPH** Dual Epidemiology & Biostatistics, 2007, University of South Florida, Tampa, Florida.

**BA** Psychology, 2003, University of South Florida, Tampa, Florida.  
**Magna Cum Laude**

## AWARDS & HONORS

- Dissertation of the Year for Public Health, UMD, 2015
- Delta Omega Public Health Honor Society, UMD, 2015-Present
- Most Valuable Professor, UMD, 2015
- U.S. Delegate, Lindau Meeting of Nobel Laureates in Medicine & Physiology, 2014
- Roger H. Rubin Travel Award, 2013
- NICHD Intramural Research Training Award Summer Fellowship, 2013
- Dean's Fellowship (Public Health), UMD, 2012-2015
- University Fellowship, UMD, 2012-2015
- Psi Chi Psychology Honor Society, USF, 2002-Present
- Golden Key International Honor Society, USF, 2002-Present
- Provost Scholar, USF, 2002
- Dean's List, USF, 2001-2003
- Florida Bright Futures Academic Scholar, 2000-2003
- Honors College Scholarship, USF, 2000-2003

## **PROFESSIONAL EXPERIENCE**

### **Director of Clinical Research** **07/18 - Present**

Florida Orthopedic Institute/Foundation for Orthopedic Research and Education  
Tampa, Fl

Responsibilities include strategic oversight of the research program, supervision of the research staff, design of clinical trials, statistical analyses, development of case report forms and databases. Also providing training in conduct of research, epidemiology and biostatistics.

### **Epidemiologist/Biostatistician** **09/15 – 06/18**

College of Medicine,  
University of Pennsylvania, Philadelphia, PA

Responsibilities include study design, sample size calculations, statistical analyses (univariate, multivariate, multivariable), development of case report forms, development of databases, and data cleaning. Additionally, provides training in data cleaning and supervises these efforts for clinical research coordinators. Also provides training in conduct of research, epidemiology, and biostatistics for post-graduate programs. Primary statistical software utilized- STATA and novice use of ArcGIS.

Diseases/conditions studied: preterm birth, preeclampsia, gestational diabetes, maternal cardiac function during and after pregnancy for women affected by preeclampsia, cervicovaginal microbiome and mucosal microenvironments, geographic patterns of poor birth outcomes.

### **Post-Doctoral Researcher, Perinatology** **09/15 – 09/16**

College of Medicine,  
University of Pennsylvania, Philadelphia, PA

Responsibilities are the same as described above in research associate position.

### **Instructor** **05/15 - 08/15**

School of Public Health, Department of Family Science, MCH, College Park, MD.  
FMSC 302 Research Methods

Designed and taught accelerated summer research methods course for the department.

### **Pre-Doctoral Research Fellow** **09/14 – 05/15**

The *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, Division of Intramural Population Health Research, Epidemiology Branch, Rockville, MD

Dissertation work supervised by Dr. Katherine Grantz; project examining labor, delivery, and neonatal outcomes associated with placental abruption using a multi-site study of electronic health records with over 200,000 observations (Consortium on Safe Labor). Primary software

used: SAS. Utilized advanced statistical techniques such as multiple imputation for missing data, and generalized estimating equations for repeated observations.

**Instructor**

**08/14 – 05/15**

School of Public Health, Department of Family Science, MCH, College Park, MD.  
FMSC 302 Research Methods

Responsibilities included developing lesson plans and teaching an undergraduate research methods course that included approximately 90 students per semester; developed and taught a hybrid version of the regular semester course to address rising student enrollment; supervised 4 PhD student teaching assistants each semester

**Research/Teaching Assistant**

**08/12 – 05/14**

School of Public Health, Department of Family Science, College Park, MD.  
Research Assistant to Dr. Stephanie Grutzmacher- Nutrition Research  
Teaching Assistant for Undergraduate Research Methods

Research duties include conducting statistical analyses of health, nutrition, physical activity and utilization data for a text-based health messaging program currently under evaluation in 22 elementary schools in the state of Maryland. Additionally responsible for developing databases/data collection instruments/data entry protocols, supervising the undergraduate data entry team and ensuring human subjects (IRB) compliance (including filing of compliance paperwork/amendments).

Teaching responsibilities include providing instruction (statistical analysis, database development and related research methods) and providing direct supervision/mentoring to approximately 20-25 undergraduate students during semester long group research projects.

**Summer Research Fellow**

**06/13 - 08/13**

The *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, Division of Intramural Population Health Research, Epidemiology Branch, Rockville, MD

Led collaborative project (epidemiology and biostatistics branches) examining the impact of the timing of cesarean delivery (pre-labor vs. intrapartum) in first pregnancy and risk of placenta previa in the second pregnancy utilizing a multi-site dataset of electronic medical records containing 27,000+ women followed over multiple pregnancies. Primary software utilized: SAS.

**Statistical Data Analyst & Research Specialist**

**08/07 – 06/12**

College of Medicine, Office of Research/Office of Graduate Medical Education  
University of South Florida, Tampa, FL.

Position based in a large, level-1 trauma hospital requiring daily interaction with physicians, nurses, institutional and hospital review boards and other research support staff. Technical duties included study design, protocol development/review, database design, and analytic support. Provided instruction to faculty/fellows/residents in clinical research methods, human

subject protection/ethics in research, epidemiology, biostatistics and critical review of literature and led journal clubs in several departments. Provided human subjects/statistical review services for the university and hospital review boards. Substantial experience in OBGYN/Maternal-fetal medicine, general orthopedics, and orthopedic trauma research. Additional experience in simulation training/education and in evaluation of general medical education. Statistical software utilized: SAS, SPSS, nquery.

**Infection Control/Epidemiology Intern** **05/07 – 08/07**  
University Community Hospital, Division of Infection Control, Tampa, FL.

Duties include performing outbreak investigations (reviewing charts, collecting specimens, developing database, interviewing individuals from different departments), conducting patient rounds for infection control, emergency room syndromic surveillance, and performing literature reviews as needed.

**Graduate Research Associate** **09/05 – 08/07**  
College of Public Health, Department of Epidemiology and Biostatistics,  
University of South Florida, Tampa, FL.

Duties include providing statistical analysis for a variety of on-going social science research projects, managing communications with the IRB regarding all projects, providing technical assistance with software (SAS, SPSS, Elluminate).

**Graduate Instructional Assistant** **08/05 – 05/06**  
College of Public Health, Department of Epidemiology and Biostatistics Department,  
University of South Florida, Tampa, FL.

Duties included developing lesson plans, providing instruction, leading study sessions, and developing test questions for Epidemiology 6000 & Biostatistics I 6050.

**Evaluation Specialist** **01/03 – 08/05**  
Florida Mental Health Institute, Tampa, FL.

Duties included coordinating data collection/analysis from three school sites for the GEAR UP federal grant, designing data collection forms and databases, and providing training to associated program staff on data recording and collection procedures.

**Statistics Instructor** **01/03 – 05/03**  
USF Athletics Department, Tampa, FL.

Duties included developing lesson plans and practice test questions and providing instruction to student athletes in small groups.

**Graduate Research Assistant** **08/02 – 12/02**  
Florida Mental Health Institute, Tampa, FL.

Duties included conducting literature searches, assisting in writing and editing papers for publication for the Families are First Teachers grant.

## STATISTICAL SOFTWARE

Proficient in SPSS, SAS, STATA, HLM, nQuery and basic use of ArcGIS.

## PUBLICATIONS

Hamm RF, **Downes KL**, Srinivas SK, Levine LD. Utilizing the probability of cesarean from a validated cesarean prediction calculator to predict labor length and morbidity. *Am J Perinatol*. In press.

Ngo TTM, Moufarrej MN, Rasmussen M-LH, Camunas-Soler J, Pan W, Okamoto J, Neff NF, Liu K, Wong RJ, **Downes KL**, Tibshirani R, Shaw GM, Skotte L, Stevenson DK, Biggio JR, Elovitz MA, Melbye M, Quake SR. Noninvasive blood tests for fetal development predict gestational age and preterm delivery. *Science*. 2018; 360 (6393): 1133-1136.

McCoy J, **Downes KL**, Srinivas SK, Levine LD. Postdates induction with an unfavorable cervix and risk of cesarean. *J Matern Fetal Neonatal Med*. In press.

Levine L, **Downes KL**, Romero JA, Pappas H, Elovitz MA. Quantitative fetal fibronectin and cervical length in symptomatic women: results from a prospective blinded cohort study. *J Matern Fetal Neonatal Med*. In press.

Hirshberg A, **Downes KL**, Srinivas SK. Comparing standard office-based follow-up with text-based remote monitoring in the management of postpartum hypertension: a randomized clinical trial. *BMJ Qual Saf*. 2018. Epub ahead of print.

Levine L, **Downes KL**, Parry S, Elovitz MA, Sammel MD, Srinivas SK. A validated calculator to estimate risk of cesarean after an induction of labor with unfavorable cervix. *Am J Obstet Gynecol*. 2018; 218 (2): 254.e1-254.e7.

Durnwald CP, **Downes KL**, Leite R, Elovitz MA, Parry S. Predicting persistent impaired glucose tolerance in GDM women: the role of hsCRP and adiponectin. *Diabetes Metab Res Rev*. 2018; 34(2).

**Downes KL**, Shenassa ED, Grantz KL. Neonatal outcomes associated with placental abruption. *Am J Epidemiol*. 2017; 186 (12): 1319-1328.

**Downes KL**, Ananth CV. Invited commentary: Short maternal stature and increased risk of ischaemic placental disease: Is the association driven by unmeasured confounding? *Paediatr Perinat Epidemiol*. 2017; 31(3): 206-208.

**Downes KL**, Grantz KL, Shenassa ED. Maternal, labor, delivery, and perinatal outcomes associated with placental abruption: A systematic review. *Am J Perinatol*. 2017; 34 (10): 935-957.

Serrano R, Blair J, Watson DT, Infante AF, Shah AR, Mir HR, Maxson BJ, **Downes KL**, Sanders RW. Cephalomedullary nail fixation of intertrochanteric femur fractures: Are two proximal screws better than one? *J Orthop Trauma*. 2017; 31 (11): 577-582.

Ruhstaller K, **Downes KL**, Chandrasekaran S, Srinivas S, Durnwald C. Prophylactic wound vacuum therapy after cesarean section to prevent wound complications in the obese population: A randomized controlled trial (the ProVac study). *Am J Perinatol*. 2017; 34(11): 1125-1130.

Levine LD, **Downes KL**, Elovitz MA, Parry S, Sammel MD, Srinivas SK. Mechanical and pharmacologic methods of labor induction: A randomized controlled trial. *Obstet Gynecol*. 2016; 128 (6): 1357-1364.

**Downes KL**, Hinkle SN, Sjaarda LA, Albert PS, Grantz KL. Previous prelabor or intrapartum cesarean delivery and risk of placenta previa. *Am J Obstet Gynecol*. 2015; 212(5):669.e1-669.e6.

Rodrigues-Jr AA, Herrera-Hernandez MC, Bassaly R, McCullough M, Terwilliger L, **Downes K**, Hoyte L. Estimates of the levator ani subtended volume based on magnetic resonance linear measurements. *Neurourol Urodynam*. 2014 (Online First).

Schwartz DG, Cottrell BJ, Teusink MJ, Clark RE, **Downes KL**, Tannenbaum RS, Frankle MA. Factors that predict postoperative motion in patients treated with reverse shoulder arthroplasty. *J Shoulder Elbow Surg*. 2014; 23(9): 1289-1295.

Sanders R, Vaupel ZM, Erdogan M, **Downes K**. Operative treatment of displaced intraarticular calcaneal fractures: Long-term (10-20 years) results in 108 fractures using a prognostic CT classification. *J Orthop Trauma*. 2014; 28 (10): 551-563.

Hoffman MS, Palmer J, Young C, Cobb A, **Downes K**. Simulation of cystotomy repair utilizing fresh-frozen porcine bladder. *J Gynecol Surg*. 2014; 30(3): 141-146.

Gonzalez AP, Palmer J, **Downes K**, Young C. Attitudes and knowledge about breastfeeding among obstetrics and gynecology residents. *Obstet Gynecol*. 2014; 123: 17S-18S.

Spellacy WN & **Downes K**. The use of the USMLE step I and II exam scores of medical students to predict their future performance on the annual council of resident education in obstetrics and gynecology (CREOG) exams. *J Reprod Med*. 2014; 59 (1-2): 17-19.

Yeen W, Polgar A, Guglin M, **Downes K**, Faber C, Roy A, Caldeira C. Outcomes of adult orthotopic heart transplantation with extended allograft ischemic time. *Transplant Proc*. 2013; 45(6): 2399-405.

Mangar D, Karlnoski R, Sprenger C, **Downes K**, Taffe N, Wainwright R, Gustke K, Bernasek T & Camporesi E. Knee strength retention and analgesia with continuous perineural fentanyl infusion after total knee replacement: randomized controlled trial. *J Anesth*. 2013; 1-8. doi: 10.1007/s00540-013-1700-y.

Schweiger J, Karlnoski R, Mangar D, Kolla J, Munoz G, Thompson P, Sprenger C, **Downes K** & Camporesi E. Impact of a low-pressure polyurethane adult endotracheal tube on the incidence of ventilator-associated pneumonia: A before and after concurrence study. *ISRN Critical Care*. 2013 (2013).

Harreld K, Clark R, **Downes K**, Virani N & Frankle M. Correlation of subjective and objective measures before and after shoulder arthroplasty. *Orthopedics*. 2013; 36 (6): 808-814.

Patel J, Vasan R, van Loveren H, **Downes K** & Agazzi S. The changing face of acoustic neuroma management in the USA: Analysis of the 1998 and 2008 patient surveys from the acoustic neuroma association. *Br J Neurosurg*. 2014; 28(1): 20-4.

Haubner LY, Barry JS, Johnston LC, Soghier L, Tatum PM, Kessler D, **Downes K** & Auerbach M. Neonatal Intubation Performance: Room for improvement in tertiary neonatal intensive care units. *Resuscitation*. 2013; 84(10): 1359-64.

Virani NA, Williams CD, Clark R, Polikandriotis J, **Downes K** & Frankle MA. Preparing for the bundled payment initiative: The cost and clinical outcomes of reverse shoulder arthroplasty for the surgical treatment of advanced rotator cuff deficiency at an average 4 year follow-up. *J Shoulder Elbow Surg*. 2013; 22(12): 1612-22.

Ross SB, Mangar D, Karlnoski R, Camporesi E, **Downes K**, Luberic K, Haines K, Rosemurgy AS. Laparo-endoscopic single-site (LESS) cholecystectomy with epidural vs. general anesthesia. *Surg Endosc*. 2013; 27(5): 1810-1819.

Bassaly R, McCullough M, Hussamy D, **Downes K**, Hoyte L, Hart S. Technical preferences of surgeons performing a sacrocolpopexy procedure. *Surg Technol Int*. 2013; 22: 189-94.

Troy J, Karlnoski R, **Downes K**, Brown KS, Cruse CW, Smith DJ, Payne WG. The use of EZ Derm in partial-thickness burns: An institutional review of 157 patients. *ePlasty*. 2013 (March-Online).

Virani NA, Williams CD, Clark R, Polikandriotis J, **Downes K** & Frankle MA. Preparing for the bundled payment initiative: The cost and clinical outcomes of total shoulder arthroplasty for the surgical treatment of glenohumeral arthritis at an average 4 year follow-up. *J Shoulder Elbow Surg*. 2013; 22(12): 1601-11.

Puskas B, Harreld K, Clark R, **Downes K**, Virani NA, Frankle M. Isometric strength, range of motion, and impairment before and after total and reverse shoulder arthroplasty. *J Shoulder Elbow Surg*. 2013; 22(7): 869-76.

Mangar D, Sprenker CJ, Karlnoski RA, Dodson RK, Brashears BH, **Downes KL**, Camporesi EM. Migration of polyurethane high-volume low-pressure cuffed endotracheal tubes after neck flexion and extension. *J Anesth*. 2013; 27 (4): 633-4.

Mangar D, Sprenker CJ, Karlnoski RA, McDonough JP, Dodson RK, Brashears BH, **Downes KL** & Camporesi EM. Are anatomical landmark measurements accurate for predicting endotracheal tube depth? *International Journal of Advanced Nursing Studies, North America*. 2013; 2(2).

Virani NA, Williams CD, Clark R, Polikandriotis J, Downes K, Frankle MA. The 4-year cost and clinical outcomes of reverse shoulder arthroplasty for the surgical treatment of the rotator cuff deficient shoulder. *J Shoulder Elbow Surg*. 2013; 22(4): e40.

McCullough MC, Decker S, Ford J, **Downes K**, Hilbelink D, Ordorica R, Hoyte L & Hart S. Third sacral foramina morphometry for sacral neuromodulation. *Female Pelvic Med Reconstr Surg*. 2013; 19(1): 23-30.

Vasan R, Patel J, Sweeney JM, Carpenter AM, **Downes KL**, Youssef AS, van Loveren H, Agazzi S. Pediatric intracranial aneurysms: Current national trends in patient management and treatment. *Childs Nerv Syst*. 2013; 29(3): 451-456.

Spellacy WN, Gilbert-Barness E, Tsibris JC, & **Downes KL**. Umbilical cord knots and cord blood gases, erythropoietin and nucleated red blood cell levels: A study of possible chronic fetal hypoxia. *Fetal Pediatr Pathol*. 2013; 32(2): 158-161.

Pervaiz K, Cabezas A, **Downes K**, Santoni B & Frankle M. Osteoporosis and shoulder osteoarthritis: Incidence, risk factors and surgical implications. *J Shoulder Elbow Surg*. 2013; 22(3): e1-e8.

Hoyte L, Rabbanifard R, Mezzich J, Bassaly R, **Downes K**. Cost analysis of open versus robotic assisted sacrocolpopexy. *Female Pelvic Med Reconstr Surg*. 2012; 18(6): 335-339.

Bruder KL, **Downes K**, Malo TL, Giuliano AR, Salmon D, Vadaparampil ST. Physicians' intentions to change pap smear frequency following human papillomavirus vaccination. *J Pediatr Adolesc Gynecol*. 2012; 25(6): 384-389.

Connery S, **Downes K**, Young C. A retrospective study evaluating silver-impregnated dressings on cesarean wound healing. *Adv Skin Wound Care*. 2012; 25(9): 414-419.

Lau T, Olivera R, Miller T, **Downes K**, Danner C, van Loveren H, & Agazzi S. Paradoxical trends in the management of vestibular schwannoma in the United States. *J Neurosurg*. 2012; 117(3): 514-519.

McCullough M, Valceus J, **Downes K**, & Hoyte L. The ureter as a landmark for robotic sacrocolpopexy. *Female Pelvic Med Reconstr Surg*. 2012; 18(3): 162-164.



- Hoffman M, Cardosi R, & **Downes K**. Robotically assisted vaginal hysterectomy is a viable alternative to robotic hysterectomy for selected patients. *J Gynecol Surg*. 2012; 28(1): 1-4.
- Vale F, Effio E, Arredondo N, Bozorg A, Wong K, Martinez C, **Downes K**, Tatum O, & Benbadis S. Efficacy of temporal lobe surgery for epilepsy in patients with negative MRI for mesial temporal lobe sclerosis. *J Clin Neurosci*. 2012; 19(1): 101-106.
- Rodrigues A, Bassaly R, Mccullough M, Terwilliger HL, Hart S, **Downes K** & Hoyte L. Levator ani subtended volume: A novel parameter to evaluate levator ani muscle laxity in pelvic organ prolapse. *Am J Obstet Gynecol*. 2012; 206 (3): 244.e1-244.e9.
- Huang M, Baaj A, **Downes K**, Youssef S, Sauvageau E, van Loveren H & Agazzi S. Paradoxical trends in the management of unruptured cerebral aneurysms in the United States. *Stroke*. 2011; 42 (6): 1730-1735
- Bassaly R, Tidwell N, Bertolino S, Hoyte L, **Downes K** & Hart S. Myofascial pain and pelvic floor dysfunction in patients with interstitial cystitis. *Int Urogynecol J*. 2011; 22(4): 413-418.
- Bassaly R, **Downes K**, & Hart S. Dietary consumption triggers in interstitial cystitis/bladder pain syndrome patients. *Female Pelvic Med Reconstr Surg*. 2011; 17(1): 36-39.
- Baaj A, **Downes K**, Vaccaro A, Uribe J & Vale F. Trends in the treatment of lumbar spine fractures in the United States: A socioeconomic perspective. *J Neurosurg Spine*. 2011; 15(4): 367-370.
- Holmstrom S, **Downes K**, Mayer J, & Learman L. Simulation training in an obstetric clerkship: A randomized controlled trial. *Obstet Gynecol*. 2011; 118 (3): 649-654.
- Deutsch A, Twitty P, **Downes K** & Parsons M. Assessment of the alveolar-arterial oxygen gradient as a screening test for pulmonary embolism in pregnancy. *Am J Obstet Gynecol*. 2010; 203 (4): 373.e1-373.e4.
- Deutsch A, Deutsch E, Totten C, **Downes K**, Haubner L & Belogolovkin V. Maternal and neonatal outcomes based on gestational age of midtrimester preterm premature rupture of membranes. *J Matern Fetal Neonatal Med*. 2010; 23 (12): 1429-1434.
- Nguyen Q, Kapitz M, **Downes K** & Silva C. Are early human chorionic gonadotropin levels after methotrexate a predictor of response in ectopic pregnancy? *Am J Obstet Gynecol*. 2010; 202 (6): 630 e. 1-5.
- Khan H, Carnendran L, **Downes K**, Law C & Weston M. Percutaneous coronary interventions and treatment outcomes in coronary allograft vasculopathy. *Catheter Cardio Inte*. 2010; 75 (S2): S120-1.

Khan H, Carnendran L, **Downes K**, Hall C, Weston M & Rinde-Hoffman D. Allograft vasculopathy: A 23-year retrospective analysis from the large Lifelink transplant registry. *Cardiovasc Revasc Med*. 2010; 11(3): 209-210.

Klein S, Dunning P, Mulieri P, Pupello D, **Downes K** & Frankle M. Effects of acquired glenoid bone defects on surgical technique and clinical outcomes in reverse shoulder arthroplasty. *J Bone Joint Surgery Am*. 2010; 92 (5): 1144-1154.

Spellacy W, McCarthy J, Tsibris J, Gilbert-Barness E & **Downes K**. Fetal umbilical cord blood erythropoietin, interleukin-6, pH, pO<sub>2</sub>, pCO<sub>2</sub>, and base excess levels in histologic and/or clinical chorioamnionitis: Is the response only inflammatory? *Fetal Pediatr Pathol*. 2009; 28 (5): 239-246

Hart S, Tidwell N, **Downes K** & Hoyte L. Relationship between pelvic floor dysfunction and interstitial cystitis in an urogynecology referral center. *Int Urogynecol J*. 2008; 19 (supplement 1): S163.

Brown CH, Guo J, Singer T, **Downes K** & Brinales J. Examining the effects of school-based drug prevention programs on drug use in rural settings: Methodology and initial findings. *J Rural Health*. 2007; 23: 29-36.

Scott JU, Hague- Armstrong K, & **Downes K**. Teasing and Bullying: What Can Pediatricians Do? *Contemp Pediatr*. 2003; 20 (4): 105-121.

## PRESENTATIONS

### Conference Talks:

**Downes KL**, Ravel J, Gajer P, Elovitz MA. Gardnerella vaginalis and spontaneous preterm birth: New insights. Oral Presentation at the 38th Society for Maternal-Fetal Medicine Pregnancy Meeting, Dallas, Texas, January 29-February 3 2018.

Levine LD, **Downes KL**, Lewey J, Srinivas SK, Arany Z, Ky B, Elovitz MA. Evaluating cardiovascular risk 10 years after preeclampsia. Oral Presentation at the 38th Society for Maternal-Fetal Medicine Pregnancy Meeting, Dallas, Texas, January 29-February 3 2018.

Levine LD, **Downes KL**, Lewey J, Arany Z, Ky B, Elovitz MA. Elevated sFlt1 levels are associated with cardiac dysfunction. Oral Presentation at the 38th Society for Maternal-Fetal Medicine Pregnancy Meeting, Dallas, Texas, January 29-February 3 2018.

**Downes KL**, Ravel J, Gajer P, Elovitz MA. Specific microbes present in the early third trimester in the cervicovaginal space are associated with spontaneous labor at term. Poster Presentation at the 38th Society for Maternal-Fetal Medicine Pregnancy Meeting, Dallas, Texas, January 29-February 3 2018.

**Downes KL**, Heiser L, Elovitz MA. Longitudinal changes in cervicovaginal antimicrobial peptides during pregnancy and association with spontaneous preterm birth. Poster Presentation at the 38th Society for Maternal-Fetal Medicine Pregnancy Meeting, Dallas, Texas, January 29-February 3 2018.

**Downes KL**, Venkataramanan R, Caritis S, Elovitz MA. Recurrent spontaneous preterm birth risk is not associated with 17-alpha hydroxyprogesterone caproate concentrations. Poster Presentation at the 38th Society for Maternal-Fetal Medicine Pregnancy Meeting, Dallas, Texas, January 29-February 3 2018.

McCoy J, **Downes KL**, Levine LD. Risk factors associated with development of chorioamnionitis during labor induction with a standardized labor protocol. Poster Presentation at the 38th Society for Maternal-Fetal Medicine Pregnancy Meeting, Dallas, Texas, January 29-February 3 2018.

McCoy J, **Downes KL**, Ravel J, Gajer P, Elovitz MA. Select microbes present in early 2<sup>nd</sup> trimester in the cervicovaginal space are associated with subsequent Group B Strep colonization. Poster Presentation at the 38th Society for Maternal-Fetal Medicine Pregnancy Meeting, Dallas, Texas, January 29-February 3 2018.

Peress D, Elovitz MA, **Downes KL**. Pregnant women who screen positive for depression or anxiety are more likely to over-utilize an obstetric triage unit. Poster presentation at the 38<sup>th</sup> Society for Maternal-Fetal Medicine Pregnancy Meeting, Dallas, Texas, January 29<sup>th</sup>-February 3<sup>rd</sup>, 2018,

Levine LD, **Downes KL**, Arany Z, Ky B, Elovitz MA. Cardiac dysfunction in preeclampsia is present at diagnosis and persists postpartum. Oral presentation at the 37<sup>th</sup> Society Maternal-Fetal Medicine Pregnancy Meeting, Las Vegas, Nevada, January 23-28, 2017.

Ghartey J, **Downes KL**, Anglim L, Romero J, Brown A, Elovitz MA. The cervicovaginal metabolome is different in symptomatic women who deliver preterm compared to term. Poster presentation at the 37<sup>th</sup> Annual Society for Maternal-Fetal Medicine Pregnancy Meeting, Las Vegas, Nevada, January 23-28, 2017.

Riis VM, **Downes KL**, Elovitz MA. High perceived stress is associated with spontaneous preterm birth in African American women. Poster presentation at the 37<sup>th</sup> Annual Society for Maternal-Fetal Medicine Pregnancy Meeting, Las Vegas, Nevada, January 23-28, 2017.

**Downes KL**, Gajer P, Ravel J, Elovitz MA. Integrating low and high risk cervicovaginal microbiota with antimicrobial peptides may identify those women at greatest risk for spontaneous preterm birth. Poster presentation at the 37<sup>th</sup> Annual Society for Maternal-Fetal Medicine Pregnancy Meeting, Las Vegas, Nevada, January 23-28, 2017.

**Downes KL**, Srinivas SK, Elovitz MA, Parry S, Levine LD. Can a standardized labor protocol for induction reduce adverse outcomes without increasing risk of cesarean? Poster Presentation at the 37<sup>th</sup> Society for Maternal-Fetal Medicine Pregnancy Meeting, Las Vegas, Nevada, January 23-28, 2017.

McCoy J, **Downes KL**, Srinivas SK, Levine LD. Risk factors associated with cesarean delivery among women undergoing an induction after 41 weeks gestation. Poster Presentation at the 37<sup>th</sup> Society for Maternal-Fetal Medicine Pregnancy Meeting, Las Vegas, Nevada, January 23-28, 2017.

Teefey CP, **Downes KL**, Durnwald CP, Srinivas SK, Levine LD. Risk of cesarean delivery for obese women undergoing induction with an unfavorable cervix. Poster Presentation at the 37<sup>th</sup> Society for Maternal-Fetal Medicine Pregnancy Meeting, Las Vegas, Nevada, January 23-28, 2017.

**Downes KL**, Shenassa ED, Grantz KL. Duration of labor associated with placental abruption. Poster presentation at the 36<sup>th</sup> Annual Society for Maternal-Fetal Medicine Pregnancy Meeting, February 1-6, 2016, Atlanta, GA.

#### Invited Talks:

Maternal, Labor, Delivery and Neonatal Outcomes Associated with Placental Abruption. Center for Research in Reproduction and Women's Health Lecture Series, University of Pennsylvania. **05/2015**

Level of Evidence in Clinical Research: Wait...What's a case-control study? October Research Festival Lecture Series, University of South Florida. **10/2010**

Critical Review of Literature. October Research Festival Lecture Series, University of South Florida.	<b>10/2010</b>
Human Subjects Research & IRB Compliance at USF. Department of Neurosurgery, University of South Florida.	<b>08/2010</b>
Introduction to Biostatistics and Basic Epidemiology. Evidence-Based Research Methods 3-Day Conference, University of South Florida.	<b>04/2010</b>
Clinical Curiosity (...and how the Guinness Brewery Changed History). Obstetrics & Gynecology Grand Rounds, University of South Florida.	<b>12/2007</b>
Guest Lectures:	
Introduction to Bivariate Statistics. Maternal-Fetal Medicine Fellowship Lecture Series, University of Pennsylvania.	<b>04/2018</b>
Conceptualizing the Causal Pathway. Reproductive Epidemiology graduate course, University of Pennsylvania.	<b>03/2018</b>
Research Round Table: How to Frame the Research Question. Maternal-Fetal Medicine Fellowship Lecture Series, University of Pennsylvania.	<b>10/2017</b>
Introduction to Epidemiologic Study Design. Maternal-Fetal Medicine Fellowship Lecture Series, University of Pennsylvania.	<b>08/2017</b>
Introduction to Statistics and Epidemiology. Maternal-Fetal Medicine Fellowship Lecture Series, University of Pennsylvania.	<b>12/2016</b>
Conceptualizing the Causal Pathway. Reproductive Epidemiology graduate course, University of Pennsylvania.	<b>02/2016</b>
Placental location, functioning and disorders during pregnancy. Maternal-child epidemiology undergraduate course, University of Maryland.	<b>04/2014</b>
Placental location, functioning and disorders during pregnancy. Maternal-child epidemiology undergraduate course, University of Maryland.	<b>12/2013</b>
The IRB survival guide. Orthopedic Residency Joint Lecture Series, Florida Orthopedic Institute and University of South Florida.	<b>05/2012</b>

Conducting Research at USF: Steps for a Successful Research Project. **05/2010**  
Department of Radiology Residency Research Lecture Series,  
University of South Florida.

ABSITE Review: Clinical Research. **01/2010**  
Department of General Surgery Residency Research Lecture Series,  
University of South Florida.

Clinical Curiosity. **11/2007**  
Department of Vascular Surgery Lecture Series, University of South Florida.

## **TEACHING ACTIVITIES**

### Courses Taught

FMSC 302: Research Methods in Family Science, University of Maryland, Fall 2014, Spring 2015, Summer 2015

Responsible for supervising four doctoral student teaching assistants and lecturing for a class of approximately 80 students. Successfully created and launched a new hybrid/blended version of the full-semester course. Designed and taught an accelerated summer course.

Clinical Research Methods (faculty seminar), University of South Florida, Department of Pediatric Endocrinology, 2012-2014.

### Teaching Assistant

FMSC 302: Research Methods in Family Science, University of Maryland, 2012-2014

Responsible for supervising/mentoring 20-25 undergraduate students during semester long group research projects.

EPB 6000: Epidemiology (graduate level), University of South Florida, 2005-2006

EBP 6050: Biostatistics I (graduate level), University of South Florida, 2005-2006

## **PROFESSIONAL SERVICE**

Conference Abstract Reviewer, Society for Pediatric and Perinatal  
Epidemiologic Research **2015**

Conference Abstract Reviewer, Society for Epidemiologic Research **2015**

Statistical/Scientific Reviewer, Journal of Orthopedic Trauma **11/08 - Present**

Ad-hoc Reviewer, Journal of Maternal-Fetal and Neonatal Medicine **03/13 - Present**

Ad-hoc Reviewer, Journal of the American Medical Association	<b>12/17 - Present</b>
Ad-hoc Reviewer, American Journal of Obstetrics and Gynecology	<b>07/17 - Present</b>
Ad-hoc Reviewer, Pediatrics	<b>10/17 - Present</b>
Ad-hoc Reviewer, Paediatric & Perinatal Epidemiology	<b>11/16 - Present</b>
Ad-hoc Reviewer, BMJ Case Reports	<b>01/18 - Present</b>
International Health Services Collaborative, Public Health/Medical Service Trip, Dominican Republic	<b>12/2005</b>

### **UNIVERSITY SERVICE**

University of South Florida Staff Council	<b>08/11 - 06/12</b>
Ad-hoc reviewer, Institutional Review Board	<b>08/07 - 06/12</b>
University of South Florida Staff Senate	<b>01/03 - 01/04</b>
University of South Florida Resident Student Senate	<b>08/00 - 08/01</b>

### **DEPARTMENTAL SERVICE**

Faculty Search Committee, Maternal and Child Health	<b>2013 - 2014</b>
Research Officer- Maryland Council on Family Relations	<b>08/12 - 08/13</b>
Internal scientific reviewer, Obstetrics and Gynecology	<b>08/08 - 06/12</b>

### **NATIONAL ORGANIZATION MEMBERSHIP**

Society for Epidemiology Research	<b>2013 - Present</b>
Society for Pediatric and Perinatal Epidemiologic Research	<b>2013 - Present</b>

### **PROFESSIONAL DEVELOPMENT**

Emotional intelligence- The biggest predictor of success...a learned skill, Penn Organizational Effectiveness Professional development workshop	<b>2017</b>
Understanding scholarly publishing: Panel discussion, University of Pennsylvania, Biomedical Postdoctoral Program	<b>2016</b>
K Award Writing Workshop,	<b>2016</b>

University of Pennsylvania, Biomedical Postdoctoral Program	
K & F Award- A general award overview workshop, University of Pennsylvania, Biomedical Postdoctoral Program	<b>2015</b>
Writing an article for publication: The abstract, Penn faculty affairs professional development program	<b>2015</b>
Writing an article for publication: The discussion section, Penn faculty affairs professional development program	<b>2015</b>
Writing an article for publication: introduction section, Penn faculty affairs professional development program	<b>2015</b>
Beyond Pubmed: Navigating Penn resources, Penn faculty affairs professional development program,	<b>2015</b>
Problem Solving Workshop, NICHD	<b>2015</b>
Preparing Future Faculty Program (2 year training)	<b>2012 - 2014</b>
Utilizing National Vital Statistics Database, National Center for Health Statistics Workshop	<b>2012</b>

### **Research Support**

R01-NR014784-05 (Elovitz) NIH Revealing the role of the cervicovaginal microbiome in spontaneous preterm birth. This proposal will address if there is an association between the microbiota and spontaneous preterm birth in a large cohort. Role: Biostatistician	9/28/2013 - 6/30/2018
N/A (Elovitz) UPHS Precision Medicine PRecision Medicine In Segregating Endotypes in preterm birth (PROMISE) The goal of this grant is to determine if genetic variations and/or varying molecular profiles alter the maternal response to 17-alpha hydroxyprogesterone caproate and hence modify their risk of recurrent preterm birth Role: Biostatistician	7/1/2014 - 06/30/2018
U01 HD087180-03 (Schwartz/Licht) NIH NICHD Developing a multi-modality, paradigm-shifting approach for in vivo assessment of the human placenta and the impact of maternal nutrition on its development and function Role: Biostatistician	9/17/2015-8/31/2019



22-FY17-890 (Driscoll)

11/1/2014 - 10/31/2019

March of Dimes

March of Dimes Prematurity Research Center at the University of Pennsylvania

Dr. Elovitz serves as the Director of the Clinical and Animal Core and is the lead investigator for Theme 2 of this grant. The theme is focused on cervical remodeling in the pathogenesis of preterm birth.

Role: Biostatistician

K12-HD001265-17

Driscoll (PI)

05/01/2013-06/30/2017

NICHD

Foley of Misoprostol for the Management of Induction (The FOR MOMI trial)

A four-arm randomized trial evaluating four different methods of induction of labor and comparing the time to delivery.

Role: Biostatistician

Bridge Levine, Lisa (PI)

07/01/17-06/30/18

AAOGF

Assessment of cardiovascular risk after preeclampsia - a 10 year follow-up study

This project focuses on the cardiovascular risk in women 10 years after having preeclampsia.

Through this grant, we will investigate whether arterial stiffness or endothelial dysfunction is present in women with a history of preeclampsia 10 years ago compared to normotensive controls. This serves as preliminary data for the current proposal.

Role: Biostatistician

NIH UL1TR001878, Levine, Lisa (PI)

02/01/17-01/31/19

PENN/TAPITMAT

Preeclampsia and Risk of Cardiac Dysfunction

The pilot study seeks to investigate whether 3D echocardiograms can identify cardiac dysfunction in women with a history of PEC. This serves as a basis for preliminary data in the current proposal.

Role: Biostatistician