

Nicole R. Andersen

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Education

Vanderbilt University

Fall 2022-Present

MPH Candidate

Epidemiology Track

Expected Graduation: May 2024

Masters Thesis: Exploring Neonatal Weight Loss Among Opioid-Exposed Infants with Polysubstance Exposure

University of Virginia

Fall 2015-Spring 2018

B.A. in Cognitive Science

Concentration: Cognitive Neuroscience

Virginia Polytechnic Institute and State University

Fall 2014-Spring 2015

Experience

Graduate Student Intern – Tennessee Department of Health

May 2023 - Present

Family Health and Wellness Division

- Masters practicum part-time student intern position.
- Led the development of Tennessee's first Fetal Death Data Report.
 - Selected indicators for the report, generated visualizations, and wrote the report.
 - Focused on effective health and science communication and data visualization.
 - Collaborated closely with several Tennessee Department of Health and Metro Health Department Teams.
 - Created an accompanying one-page fact sheet.
- Recommended and supported efforts for prevention program implementation in Tennessee.

Surveillance Officer – Vanderbilt University Medical Center

Oct 2022 - Present

CDC Emerging Infections Program

- Part-time Student Assistantship position
- Primarily works on the HPV-Impact Project
 - Conducts clinical chart reviews to collect data on patients with a CIN2+ diagnosis
 - Supports administrative audits
 - Attends weekly team meetings
- Supports other high priority CDC & TDH projects
 - "Understanding Early Influenza Activity and Illness Severity in TN 2022" Project in Nov 2022

Research Technician III – Developing Brain Institute; Children's National Hospital

June 2018 – July 2022

- Ensured high quality data acquisition during fetal, neonatal, and preterm MRIs.
 - Collaborated with Radiology staff (MRI technologists, nurses, etc.) to acquire images of the fetal & neonatal brain and, when applicable, placenta while ensuring patient needs are met.
 - Employed approaches to resolve various data capture challenges during the MRI (i.e., imaging artifacts, timing challenges, etc.)
- Organized images from MRI and maintained detailed logs of MRI acquisitions
- Post-processed MRI data for further analysis
 - Including but not limited to: manual placental segmentation, fetal & (when applicable) neonatal brain 2D to 3D reconstruction, neonatal brain segmentation & manual corrections, etc.
 - Maintained detailed logs of post-processing work
 - Calculated volumes of placenta and brain regions for further analysis.
- Performed Ex-Vivo placenta biopsy and MRI
- Developed and maintained segmentation (fetal brain, neonatal brain, and placenta segmentation) and MRI acquisition manuals.
- Supported Clinical Coordination Duties including:
 - NICU patient scan preparation: preparing and cleaning transport incubator, communicating and coordinating with NICU clinical team and MRI staff, and supporting the transport of the patient.
 - Communicate with enrolled participants to complete questionnaires, interventions, and scheduling.

- Coordinate outpatient MRI visits including ensuring necessary questionnaires, paperwork, and evaluations are completed by the participant, ensuring all additional data capture is completed, and coordinating with MRI staff.
- Maintained detailed logs of activities.

Volunteer at University of Virginia Health System – Surgical Admissions Suite Sept 2017-May 2018

- Supported the Surgical Admissions Suite staff
 - Tasks included: stocking supplies, preparing beds and rooms, and anything additionally requested by the staff in order to meet the nonmedical needs of patients.

Volunteer at University of Virginia Health System – Medical Mosaics; ID Office Sept 2016–May 2017

- Supported ID Office staff by completing clerical and administrative tasks
 - Tasks included: Filing, taking inventory, creating new IDs for hospital staff, removing old IDs from the system, etc.

Continued Education

EDX Professional Certificate 2023

IBM Data Analytics and Visualization with Excel and R Professional Certificate
In progress.

Stanford University Online Center for Professional Development 2020

XGEN101, Stanford School of Medicine
Fundamentals of Genetics: The Genetics You Need to Know

Skills

Technical: Microsoft Office Suite (Excel, PowerPoint, Word), REDCap, STATA, Canva, ITK-SNAP, Fetal & Newborn Research MRI Acquisition

Language: Danish (Native Fluency), English (Fluent)

Publications

Amgalan A, Kapse K, Krishnamurthy D, **Andersen NR**, Izem R, Baschat A, Quistorff J, Gimovsky AC, Ahmadzia HK, Limperopoulos C, Andescavage NN. Measuring intrauterine growth in healthy pregnancies using quantitative magnetic resonance imaging. *J Perinatol*. 2022 Jul;42(7):860-865. doi: 10.1038/s41372-022-01340-6. Epub 2022 Feb 23. PMID: 35194161; PMCID: PMC9380865. 2022

Cook KM, De Asis-Cruz J, Lopez C, Quistorff J, Kapse K, **Andersen N**, Vezina G, Limperopoulos C. Robust sex differences in functional brain connectivity are present in utero. *Cereb Cortex*. 2022 May 31:bhac218. doi: 10.1093/cercor/bhac218. Epub ahead of print. PMID: 35641152. 2022

Lu YC, Andescavage N, Wu Y, Kapse K, **Andersen NR**, Quistorff J, Saeed H, Lopez C, Henderson D, Barnett SD, Vezina G, Wessel D, du Plessis A, Limperopoulos C. Maternal psychological distress during the COVID-19 pandemic and structural changes of the human fetal brain. *Commun Med (Lond)*. 2022 May 26;2:47. doi: 10.1038/s43856-022-00111-w. PMID: 35647608; PMCID: PMC9135751. 2022

Largent A, De Asis-Cruz J, Kapse K, Barnett SD, Murnick J, Basu S, **Andersen N**, Norman S, Andescavage N, Limperopoulos C. Automatic brain segmentation in preterm infants with post-hemorrhagic hydrocephalus using 3D Bayesian U-Net. *Hum Brain Mapp*. 2022 Jan 13. doi: 10.1002/hbm.25762. Epub ahead of print. PMID: 35023255. 2022

Andescavage N, Kapse K, Lu YC, Barnett SD, Jacobs M, Gimovsky AC, Ahmadzia H, Quistorff J, Lopez C, **Andersen NR**, Bulas D, Limperopoulos C. Normative placental structure in pregnancy using quantitative Magnetic Resonance Imaging. *Placenta*. 2021 Sep 1;112:172-179. doi: 10.1016/j.placenta.2021.07.296. Epub 2021 Jul 31. PMID: 34365206; PMCID: PMC8493557. <https://pubmed.ncbi.nlm.nih.gov/34365206/> 2021

- Largent A, Kapse K, Barnett SD, De Asis-Cruz J, Whitehead M, Murnick J, Zhao L, **Andersen N**, Quistorff J, Lopez C, Limperopoulos C. Image Quality Assessment of Fetal Brain MRI Using Multi-Instance Deep Learning Methods. *J Magn Reson Imaging*. 2021 Sep;54(3):818-829. doi: 10.1002/jmri.27649. Epub 2021 Apr 23. PMID: 33891778. <https://pubmed.ncbi.nlm.nih.gov/33891778/> 2021
- Zun Z, Kapse K, Jacobs M, Basu S, Said M, **Andersen N**, Murnick J, Chang T, du Plessis A, Limperopoulos C. Longitudinal Trajectories of Regional Cerebral Blood Flow in Very Preterm Infants during Third Trimester Ex Utero Development Assessed with MRI. *Radiology*. 2021 Mar 30:202423. doi: 10.1148/radiol.2021202423. Epub ahead of print. PMID: 33787337. <https://pubmed.ncbi.nlm.nih.gov/33787337/> 2021
- Lu YC, Kapse K, **Andersen N**, Quistorff J, Lopez C, Fry A, Cheng J, Andescavage N, Wu Y, Espinosa K, Vezina G, du Plessis A, Limperopoulos C. Association between socioeconomic status and in utero fetal brain development. *JAMA Network Open*. Published 2021, Mar 1;4(3):e213526. doi: 10.1001/jamanetworkopen.2021.3526. PMID: 33779746. <https://pubmed.ncbi.nlm.nih.gov/33779746/> 2021
- De Asis-Cruz J, **Andersen N**, Kapse K, Khrisnamurthy D, Quistorff J, Lopez C, Vezina G, Limperopoulos C. Global Network Organization of the Fetal Functional Connectome. *Cereb Cortex*. 2021 May 10;31(6):3034-3046. doi: 10.1093/cercor/bhaa410. PMID: 33558873; PMCID: PMC8107792. <https://pubmed.ncbi.nlm.nih.gov/33558873/> 2021
- Pradhan S, Kapse K, Jacobs M, Niforatos-Andescavage N, Quistorff JL, Lopez C, Bannantine KL, **Andersen NR**, Vezina G, Limperopoulos C. Non-invasive measurement of biochemical profiles in the healthy fetal brain. *Neuroimage*. 2020 Oct 1;219:117016. doi: 10.1016/j.neuroimage.2020.117016. Epub 2020 Jun 8. PMID: 32526384; PMCID: PMC7491254. <https://pubmed.ncbi.nlm.nih.gov/32526384/> 2020

Posters and Presentations

- Andersen N**, Lumley E, Moore A, Miller A, Harvey E. Understanding Fetal Death in Tennessee 2017-2021. Poster Presentation: Vanderbilt Institute for Medicine and Public Health Population and Public Health Colloquium. January 26, 2024. 2024
- Andersen N.** : MPH Career and Professional Development - Exploring Public Health in Middle Tennessee. Talk to present and answer questions about practicum experience at the Tennessee Department of Health. In Person, November 7, 2023. 2023
- Ajayi A, Sackey E, Delikat E, **Andersen N**, Blankenship S, Castilho, JL Social Determinants of Health and Recurrent Cervical Dysplasia Among Women in Middle Tennessee, 2008-2020. Poster Presentation: Emerging Infections Program (EIP) Day 2023, October 18, 2023. 2023
- Cook KM, De Asis-Cruz J, Lopez C, Quistorff J, Kapse K, **Andersen N**, Vezina G, Limperopoulos C In utero MRI differentiates male and female human fetal brain functional connectivity. Platform presentation. Pediatric Academic Societies 2021 Virtual Meeting, May 3, 2021. 2021
- Lu Y-C, Andescavage N, Saeed H, Kapse K, **Andersen N**, Lopez C, Henderson D, Bulas D, du Plessis AJ, Limperopoulos C Influence of the COVID-19 pandemic on human placental morphology and texture. Platform presentation. Pediatric Academic Societies 2021 Virtual Meeting, May 3, 2021. 2021
- Pradhan S, Niforatos-Andescavage N, Saeed H, Barnett S, Kapse K, **Andersen N**, Quistorff J, Lopez C, Vezina G, Limperopoulos C Impaired fetal brain metabolism in pregnancies complicated by elevated maternal stress during the COVID-19 pandemic. Poster presentation. Pediatric Academic Societies 2021 Virtual Meeting, May 2, 2021. 2021

Lu Y-C, Andescavage N, Kapse K, **Andersen N**, Lopez C, Quistorff J, Henderson D, Bulas D, Krishnan A, Donofrio MT, du Plessis AJ, Limperopoulos C Maternal anxiety alters in vivo placental morphology and texture in pregnancies complicated by fetal congenital heart disease. Platform presentation. Pediatric Academic Societies 2021 Virtual Meeting, May 1, 2021. 2021

Kapse, Kushal; Wu, Yao; Kapse, Anushree; **Andersen, Nicole**; Lopez, Catherine; Bannantine, Kathryn; Donofrio, Mary; du Plessis, Andre; Limperopoulos, Catherine. Prenatal brain growth impairments predict neurodevelopmental outcomes in infants with congenital heart disease. Poster Presentation. International Symposium on the Fetal Brain. November 2019. 2019

***Abstract was Co-Winner of the Andrea Poretti Award**

Lu, Yuan-Chiao; Kapse, Kushal; **Andersen, Nicole**; Niforatos-Adescavage, Nickie; Yao, Wu; Limperopoulos, Catherine. Human placenta morphology correlates with fetal brain cortical folding features in healthy and CHD fetuses. Poster Presentation. Children's National Research and Education Week. April 2019. 2019

Kapse, Kushal; Wu, Yao; **Andersen, Nicole**; Lopez, Catherine; Quistorff, Jessica; Vezina, Gilbert; Donofrio, Mary; Limperopoulos, Catherine. Progressive Brain Growth Impairment in Fetuses and Neonates with Congenital Heart Disease using Serial 3-D MRI. Poster presentation. Pediatric Academic Societies. April 2019. 2019

Lu, Yuan-Chiao; Kapse, Kushal; **Andersen, Nicole**; Lopez, Catherine; Vezina, L.; Donofrio, Mary; Limperopoulos, Catherine. In vivo quantification of fetal brain morphometry in healthy and CHD fetuses. Platform presentation. Pediatric Academic Societies. April 2019. 2019

Activities & Leadership

Vanderbilt Master of Public Health Curriculum Committee

Spring 2023 - Present

Attended meetings once a semester to review course evaluations and discuss the MPH program curriculum.

Sigma Sigma Sigma National Sorority

Fall 2016-Spring 2018

Attended meetings; completed a minimum of 10 service hours a semester.

Aided in the planning and execution of philanthropy events in order to raise donations for the Sigma Sigma Sigma Foundation, Robbie Page Memorial Fund, and the March of Dimes.

Transfer Student Advisory Board

Spring 2017-Fall 2017

Member – Special Topics Committee

Served on the special topics committee, a group tasked with creating a transfer student guidebook, which was published and given to students transferring to UVA Fall 2017.

