Stanford



Amy M Inkster

Postdoctoral Scholar, Epidemiology

Bio

BIO

Amy Inkster, PhD is a Postdoctoral Scholar in the Department of Epidemiology and Population Health at Stanford University. She conducts research on epigenetic alterations in pregnancy and early life to understand the molecular levers affecting healthy development. She primarily uses large 'omics datasets to study the effect of environmental exposures on pregnancy outcomes and maternal health.

Dr. Inkster received her PhD in Medical Genetics from the University of British Columbia (Vancouver, Canada), where her research focused on evaluating DNA methylation variation in prenatal life, primarily in the context of placental epigenetics, sex differences, prenatal exposures, and X-chromosome inactivation. She holds a BSc in Chemistry. As a cross-disciplinary researcher, her work and research interests lie at the intersection of molecular mechanisms and their impacts on human health and disease at the population level.

ACADEMIC APPOINTMENTS

- Member, Maternal & Child Health Research Institute (MCHRI)

HONORS AND AWARDS

- CPRA Postdoctoral Fellowship, Canadian Institutes of Health Research (2026-2028)

PROFESSIONAL EDUCATION

- PhD, University of British Columbia , Medical Genetics (2024)
- BSc, University of Calgary , Chemistry (2016)

STANFORD ADVISORS

- Andres Cardenas, Postdoctoral Faculty Sponsor

LINKS

- LinkedIn: https://www.linkedin.com/in/amymichelleinkster/

Publications

PUBLICATIONS

- **DNA methylation in the placenta and household socioeconomic status: the SPAH study.** *Clinical epigenetics*
  Beraldo, E. O., Borders, A. E., Inkster, A. M., Ernst, L. M., Freedman, A. A., Kim, J., Keenan-Devlin, L. S., Penaherrera, M. S., Robinson, W. P., Miller, G. E.
  2026

- **Sex-influenced DNA methylation differs by placental cell type.** *Biology of sex differences*
  Han, J., Inkster, A. M., Yuan, V., Peñaherrera, M. S., Robinson, W. P.
  2026

- **Associations of arsenic exposure and folate in maternal leukocyte DNA methylation: a case-control study of mothers with spina-bifida affected children.** *Environmental health : a global access science source*
  Inkster, A. M., Bozack, A. K., Lemos, B., Lumour-Mensah, T., Mukherjee, S. K., Ekramullah, S. M., Arman, D. M., Islam, J., Wang, X., Liang, L., Finnell, R. H., Mazumdar, M., Cardenas, et al
  2026

- **The role of placental DNA methylation in the pathogenesis of chronic intervillositis of unknown etiology.** *Clinical epigenetics*
  Inkster, A. M., Peñaherrera, M. S., Robinson, W. P., Terry, J.
  2025; 17 (1): 206

- **Effect of depression and serotonin reuptake inhibitors antidepressant treatment during pregnancy on protein expression in the human placenta: A quantitative proteomics analysis.** *PloS one*
  Ok, L., Ohlund, L., Inkster, A. M., Campbell, K. S., Peñaherrera, M. S., Brain, U., Sleno, L., Robinson, W. P., Barry, A., Oberlander, T. F., Vaillancourt, C.
  2025; 20 (12): e0322090

- **Epigenetic age predicts depressive symptoms during the COVID-19 pandemic in the Canadian Longitudinal Study on Aging: importance of biological sex.** *Aging*
  Barha, C. K., Liu-Ambrose, T., Inkster, A. M., Falck, R. S., Burma, J. S., Kirkland, S., Griffith, L. E., Thompson, M., Basta, N. E., McMillan, J. M., Balion, C., Wolfson, C., Raina, et al
  2025; 17

- **Exposure to prenatal maternal stress is associated with epigenetic age acceleration and altered cell composition in the placenta: The QF2011 Queensland Flood Study.** *Placenta*
  Beraldo, E. O., Inkster, A. M., Peñaherrera, M. S., Price, E. M., Schuetz, J., Portales-Casamar, É., Kildea, S., Vaillancourt, C., King, S., Robinson, W. P.
  2025; 171: 16-25

- **Some lessons learned from genomic and epigenomic studies of the placenta.** *Placenta*
  Inkster, A. M., Illing, H. J., Robinson, W. P.
  2025

- **Breaking rules: the complex relationship between DNA methylation and X-chromosome inactivation in the human placenta.** *Biology of sex differences*
  Inkster, A. M., Matthews, A. M., Phung, T. N., Plaisier, S. B., Wilson, M. A., Brown, C. J., Robinson, W. P.
  2025; 16 (1): 18

- **Sex-dependent placental methylation quantitative trait loci provide insight into the prenatal origins of childhood onset traits and conditions** *ISCIENCE*
  Casazza, W., Inkster, A. M., Del Gobbo, G. F., Yuan, V., Delahaye, F., Marsit, C., Park, Y. P., Robinson, W. P., Mostafavi, S., Dennis, J. K.
  2024; 27 (2): 109047

- **A developmental framework for understanding the influence of sex and gender on health: Pediatric pain as an exemplar** *NEUROSCIENCE AND BIOBEHAVIORAL REVIEWS*
  Boerner, K. E., Keogh, E., Inkster, A. M., Nahman-Averbuch, H., Oberlander, T. F.
  2024; 158: 105546

- **The application of epiphenotyping approaches to DNA methylation array studies of the human placenta** *EPIGENETICS & CHROMATIN*
  Khan, A., Inkster, A. M., Penaherrera, M. S., King, S., Kildea, S., Oberlander, T. F., Olson, D. M., Vaillancourt, C., Brain, U., Beraldo, E. O., Beristain, A. G., Clifton, V. L., Del Gobbo, et al
  2023; 16 (1): 37

- **eoPred: predicting the placental phenotype of early-onset preeclampsia using public DNA methylation data** *FRONTIERS IN GENETICS*
  Fernandez-Boyano, I., Inkster, A. M., Yuan, V., Robinson, W. P.
  2023; 14: 1248088

- **The application of epiphenotyping approaches to DNA methylation array studies of the human placenta.** *Research square*

Khan, A., Inkster, A. M., Penaherrera, M. S., King, S., Kildea, S., Oberlander, T. F., Olson, D. M., Vaillancourt, C., Brain, U., Beraldo, E. O., Beristain, A. G., Clifton, V. L., Del Gobbo, et al
2023

- **Who's afraid of the X? Incorporating the X and Y chromosomes into the analysis of DNA methylation array data** *EPIGENETICS & CHROMATIN*
  Inkster, A. M., Wong, M. T., Matthews, A. M., Brown, C. J., Robinson, W. P.
  2023; 16 (1): 1

- **Profiling placental DNA methylation associated with maternal SSRI treatment during pregnancy** *SCIENTIFIC REPORTS*
  Inkster, A. M., Konwar, C., Penaherrera, M. S., Brain, U., Khan, A., Price, E., Schuetz, J. M., Portales-Casamar, E., Burt, A., Marsit, C. J., Vaillancourt, C., Oberlander, T. F., Robinson, et al
  2022; 12 (1): 22576

- **Dysregulated BMP2 in the Placenta May Contribute to Early-Onset Preeclampsia by Regulating Human Trophoblast Expression of Extracellular Matrix and Adhesion Molecules** *FRONTIERS IN CELL AND DEVELOPMENTAL BIOLOGY*
  Yi, Y., Zhu, H., Klausen, C., Chang, H., Inkster, A. M., Terry, J., Leung, P. C. K.
  2021; 9: 768669

- **Risk-focused differences in molecular processes implicated in SARS-CoV-2 infection: corollaries in DNA methylation and gene expression** *EPIGENETICS & CHROMATIN*
  Konwar, C., Asiimwe, R., Inkster, A. M., Merrill, S. M., Negri, G. L., Aristizabal, M. J., Rider, C. F., MacIsaac, J. L., Carlsten, C., Kobor, M. S.
  2021; 14 (1): 54

- **Are sex differences in cognitive impairment reflected in epigenetic age acceleration metrics?** *NEUROBIOLOGY OF AGING*
  Inkster, A. M., Duarte-Guterman, P., Albert, A. Y., Barha, C. K., Galea, L. A. M., Robinson, W. P., Alzheimer's Dis Neuroimaging Initi
  2022; 109: 192-194

- **Autosomal sex-associated co-methylated regions predict biological sex from DNA methylation** *NUCLEIC ACIDS RESEARCH*
  Gatev, E., Inkster, A. M., Negri, G., Konwar, C., Lussier, A. A., Skakkebaek, A., Sokolowski, M. B., Gravholt, C. H., Dunn, E. C., Kobor, M. S., Aristizabal, M. J.
  2021; 49 (16): 9097-9116

- **Sex Differences Are Here to Stay: Relevance to Prenatal Care** *JOURNAL OF CLINICAL MEDICINE*
  Inkster, A. M., Fernandez-Boyano, I., Robinson, W. P.
  2021; 10 (13)

- **A cross-cohort analysis of autosomal DNA methylation sex differences in the term placenta** *BIOLOGY OF SEX DIFFERENCES*
  Inkster, A. M., Yuan, V., Konwar, C., Matthews, A. M., Brown, C. J., Robinson, W. P.
  2021; 12 (1): 38

- **Genetic Sex Underlies Patterns of DNA Methylation in the Human Placenta.**
  Inkster, A. M., Yuan, V., Konwar, C., Matthews, A. M., Brown, C. J., Robinson, W. P.
  SPRINGER HEIDELBERG.2020: 169A-170A

- **Transcriptional Analysis Of Bone Morphogenetic Protein 2 (BMP2) Signaling In Human Placental Trophoblast Development.**
  Yi, Y., Zhu, H., Klausen, C., Chang, H., Inkster, A. M., Robinson, W. P., Leung, P. C. K.
  SPRINGER HEIDELBERG.2020: 260A

- **Inflammation in Alzheimer's Disease: Do Sex and APOE Matter?** *JOURNAL OF ALZHEIMERS DISEASE*
  Duarte-Guterman, P., Albert, A. Y., Inkster, A. M., Barha, C. K., Galea, L. A. M., Alzheimers Dis Neuroimaging Initia
  2020; 78 (2): 627-641

- **Altered levels of placental miR-338-3p and miR-518b are associated with acute chorioamnionitis and IL6 genotype** *PLACENTA*
  Konwar, C., Manokhina, I., Terry, J., Inkster, A. M., Robinson, W. P.
  2019; 82: 42-45

- **A Challenging Prenatal QF-PCR Rapid Aneuploidy Test Result Caused by a Maternally Inherited Triplication within Chromosome Xq26.2** *CYTOGENETIC AND GENOME RESEARCH*
  Inkster, A., Thomas, M., Gamache, N. S., Chan, M., Stenroos, P., Chernos, J. E., Argiropoulos, B.
  2018; 156 (1): 5-8