

BIOGRAPHICAL SKETCH

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NAME: Sherri L. Bucher

eRA COMMONS USER NAME (credential, e.g., agency login): shbucher

POSITION TITLE: Associate Professor of Pediatrics

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Eastern Illinois University	B.A.	05/1990	Psychology with Honors, <i>magna cum laude</i>
University of Connecticut	M.A.	07/1994	Child/Developmental Psychology (specialization in Neuroscience)
University of Connecticut	PhD	05/1998	Child/Developmental Psychology (specialization in Neuroscience)

A. Personal Statement

I am an implementation specialist, researcher, and educator with expertise in maternal, child, and newborn health. My PhD training was in Child/Developmental Psychology with a specialization in Neuroscience; I used the rat model to explore the impact of prenatal administration of substances of abuse on maternal and offspring behavior and brain development. From 2008 – 2023, I served as a co-Investigator (2008 – 2017) and the US-based co-PI (Kenya site; 2017-2023) for the NIH-NICHD funded *Global Network for Women’s and Children’s Health Research*. I am also a co-Investigator for the AMPATH consortium and have served as the PI on several funded initiatives regarding field testing and evaluation of the American Academy of Pediatrics’ *Helping Babies Survive* newborn care programs. I have conducted clinical trials and implementation research around the world, with a particular focus on Kenya. I am particularly interested in developing and testing innovative solutions by which to strengthen health systems around the world, and improve dissemination of evidence-based interventions, through training and education of stakeholders, and the generation of novel biomedical and digital health solutions. These efforts, in turn, enhance the ability of health workers and families, across geographies, to engage in evidence-based maternal and newborn health practices from labor/delivery through the first month postnatal. I invented the biomedical device NeoWarm, to prevent neonatal hypothermia in low-resource settings. It was awarded a US patent in May 2019, a Nigerian patent in August 2019, and ARIPO protection (17 countries in sub-Saharan Africa) in February 2022. With Indiana CTSI Reciprocal Innovation Demonstration funding, I am currently leading a multidisciplinary team to perform qualitative assessments of the NeoWarm device and connected NeoRoo mobile app. We are assessing the feasibility and acceptability, among Indiana-based healthcare providers, for use of the bundled biomedical device + mobile app solution among opioid-exposed babies. I lead the multidisciplinary NeoInnovate Collaborate Consortium, with collaborative partners from clinical and behavioral science, health informatics, engineering, and public health. As an award-winning researcher, innovator, educator, and global health implementation specialist, I have extensive experience leading research studies, clinical trials, and capacity-building efforts in low/middle-income settings. Most recently, I was appointed the Chair, Department of Community and Global Health at the Richard M. Fairbanks School of Public Health, IU- Indianapolis. I am uniquely qualified to serve as the University partner co-lead for the C4HOPE Coalition and CheP Trailblazer Planning Grant.

Ongoing and completed projects from the past 5 years, for which I serve(d) as Principal or co-Principal Investigator include:

NIH 1 U01 HD058326-01 (Liechty, E/Bucher, S) 07/01/2018 – 06/30/23 (3rd cycle)
Global Network for Women’s and Children’s Health Research
 Role: US-based co-PI

A multi-site international consortium that conducts research trials using common protocols to assess the efficacy and feasibility of interventions to improve maternal-neonatal-child health outcomes in resource-limited settings.

Indiana CTSI/IU Center for Global Health (Bucher, S/Linnes, J) 06/30/2020 – 06/30/2022 (NCE 12/31/2023)
Reciprocal innovation to reduce infant mortality and improve access to non-pharmacological care for opioid-exposed newborns

Role: Lead Principal Investigator

Multidisciplinary collaboration between IU School of Medicine and Purdue University to develop a wearable, sensor-enabled swaddling device for continuous monitoring of vital signs in newborns.

Bill and Melinda Gates Foundation OPP1169873 (Umoren, R/Bucher,S)

10/01/2017- 08/31/2019

(NCE: 02/28/2020)

eHBB: Virtual reality technology to improve newborn healthcare delivery in low- and middle-income countries

Role: co-Principal Investigator

Increase access to life-saving neonatal resuscitation training in low/middle-income countries, to support the quality and maintenance of healthcare provider knowledge and skills over time, and to improve data collection for key newborn care indicators and outcomes.

Indiana CTSI and IU Center for Global Health (Bucher, S)

05/01/2016 – 12/31/2018

Feasibility, Acceptability, and Usability testing in Kenya of NeoWarm: An innovative biomedical device to prevent newborn hypothermia in low-middle income countries

Role: Principal Investigator

To foster and encourage the development of new collaborative interdisciplinary research that seeks to identify innovations to address key global health challenges and improve health outcomes in resource limited settings.

NIH 1 U01 HD058326-01 (Liechty, E)

05/01/2008 – 04/30/18 (NCE, 2019)

Global Network for Women's and Children's Health Research

Role: 07/01/08- 06/30/17, Co-Investigator & US-based Study Coordinator; 07/01/17-present, co-PI

A multi-site international consortium that conducts research trials using common protocols to assess the efficacy and feasibility of interventions to improve maternal-neonatal-child health outcomes in resource-limited settings.

IU Multidisciplinary Undergraduate Research Institute (Bucher, S)

09/22/2017 - 05/01/2018

Integration of mHBS powered by DHIS2 and NeoWarm

Role: Principal Investigator/Mentor

Support for undergraduate students from biomedical engineering and informatics to integrate the mHBS app with NeoWarm.

Johnson and Johnson Corporate Giving (Bucher, S)

04/01/2016 - 12/31/2017

Contextual analysis to support opportunities and partners for scale-up of mHBB in sub-Saharan Africa

Role: Principal Investigator

Desk review, needs analysis, stakeholder mapping and landscape review of the technical and health system ecosystems in 4 East African countries to support sustainable scale-up of mHBB.

IU Multidisciplinary Undergraduate Research Institute (Bucher, S)

06/01/2017 – 08/07/2017

Mobile Helping Babies Survive (mHBS): An open-source digital health tool to support maternal and newborn health care workers in low/middle-income countries

Role: Principal Investigator/Mentor

B. Positions, Scientific Appointments, and Honors

Professional Experience

2023 - Present	Associate Professor (Tenure) and Chair, Department of Community and Global Health, Richard M. Fairbanks School of Public Health, IU – Indianapolis and Affiliate, IUSOM, Department of Pediatrics
2021 - 2023	Associate Professor (Tenure-track) Pediatrics, IU School of Medicine, Neonatal-Perinatal Medicine, Indianapolis IN
2020 - 2023	Graduate Faculty Scholar (Appointed): Northern Illinois University
2019 - 2021	Associate Research Professor of Pediatrics, Indiana University School of Medicine, Division of Neonatal-Perinatal Medicine, Indianapolis IN
2017 - 2020	Adjunct Associate Professional Specialist, Eck Institute for Global Health, University of Notre Dame
2010 – 2019	Assistant Research Professor of Pediatrics, Indiana University School of Medicine, Neonatal-Perinatal Medicine Section, Indianapolis IN
2009 – 2010	Visiting Assistant Research Professor of Pediatrics (Full-time), Neonatal Perinatal Medicine Section, Indiana School of Medicine, Indianapolis, Indiana
2006 - 2009	Visiting Assistant Research Professor of Pediatrics (Part-time), Child Health Services Research, Indiana School of Medicine, Indianapolis, Indiana
2005 - 2006	Grant writing and field work support for IU-Kenya program (unpaid position)/stay-home parent
2000 -2005	Stay-at-home-parent
1998 -1999	Visiting Assistant Professor of Psychology, College of the Holy Cross, Worcester, Massachusetts

1998	Course Instructor, Worcester State College, Worcester, Massachusetts
1996	Course Instructor, Eastern Connecticut State University, Connecticut
1995	Course Instructor, University of Connecticut, Storrs, Connecticut
1993 -1994	Visiting Assistant Professor of Psychology, State University of New York—New Paltz, Athens Campus, Athens, Greece

Non-academic Appointments, Technical Advisor, External Expert

2021-2022	Mentor, Advancing Women Mentoring Program: IUPUI Office For Women
2019 - 2026	Appointed Member, Women's Advisory and Diversity Council, IU School of Medicine
2018 - 2019	Technical Expert for Ghana, Helping Babies Survive, American Academy of Pediatrics
2017 – Present	Member, The Network for Improving Quality of Care for Maternal, Newborn, and Child Health, WHO
2017 - 2019	Country Mentor for Liberia, Helping Babies Survive, American Academy of Pediatrics
2016 -2021	Life-Saving Practitioners' Expert Network United Nations Secretary General: Every Woman, Every Child
2013-2019	Technical Advisor, Helping Babies Breathe implementation in Nairobi County, Kenya, Amref and American Academy of Pediatrics
2013-Present	Country Mentor for Kenya: Helping Babies Survive, American Academy of Pediatrics
2012 -- 2016	Committee Member: Global Technical Working Group for Neonatal Resuscitation, United Nations Commission on Life-Saving Commodities
2012 -- 2016	Sub-Committee Member: Helping Babies Breathe, Global Technical Working Group for Neonatal Resuscitation, United Nations Commission on Life-Saving Commodities
2012 -- 2016	Sub-Committee Member: Digital Health, Global Technical Working Group for Neonatal Resuscitation, United Nations Commission on Life-Saving Commodities
2010 --Present	Country Mentor for Kenya: Helping Babies Breathe, American Academy of Pediatrics
2010 --Present	International Master Trainer: Helping Babies Survive, American Academy of Pediatrics
2021	Affiliate Faculty Member: Indiana University Center for Global Health
2021	Translating Research into Practice (TRIP) Scholar: IUPUI Center for Translating Research into Practice
2018	Voice of "Elizabeth," Helping Babies Breathe 2nd Edition Webinar Series, American Academy of Peds
2018	Technical Advisor for Sustainable and Scalable mHealth technologies, Maternity Foundation
2018	International Master Trainer, Helping Babies Breathe 2nd Edition East Africa Regional Update

Awards, Honors, Professional Organization Memberships

2022	ARIPO Patent: PT/C/2018/2802 (biomedical device to prevent neonatal hypothermia)
2021	Finalist (1 of 6): Innovation Prize Competition, Global Health and Innovation Conference
2019 - Present	American Academy of Pediatrics: Section on Global Health
2020	American Academy of Pediatrics National Exhibition & Conference: Best Global Health poster
2019 - 2021	Women's Advisory Council, Indiana University School of Medicine
2019	Finalist, Global Impression Award, International Center of Indiana
2019	US Patent: 10,390,630 B2 Nigeria Patent: NG/PT/C/2018/2802
2018 - 2019	Guest Editor, PLoS ONE
2017	Reviewer, Partnerships for Enhanced Engagement in Research/Liberia (PEER/Liberia), National Academy of Sciences
2016	Indiana Life Sciences Summit, BioCrossroads Inaugural Prize for Scientific Presentation: NeoWarm (Indiana Life Sciences)
2016	Expert Content Reviewer, Basic Neonatal Resuscitation: Global Landscape Analysis (PATH)
2015 – Present	American Public Health Association
2015 -- 2016	Primary Reviewer: WHO Technical Specifications of Neonatal Resuscitation
2015	2nd place Ideas Solving Social and Economic Challenges Competition: NeoWarm, IUPUI Office of the Vice Chancellor for Research

2015	Letter of Appreciation for Contributions to The American Academy of Pediatrics, Dr. Errol Alden, Executive Director and CEO
2010 – Present	Pediatric Academic Societies
2010 – Present	International Pediatric Association
2008 – 2011	International AIDS Society
1996	Women in Neuroscience Travel Fellowship, Society for Neuroscience
1994	Sandra J. Weiner Young Investigator Travel Award, International Society for Dev. Psychobiology

C. Contributions to Science

Neuroscience and AMPATH: My career began with an interest in psychopharmacology, particularly the impact of *in utero* exposure to drugs of abuse on subsequent brain development and behavior in offspring. This career trajectory was interrupted in 1999 by the need to be a stay-at-home parent, in order to scaffold the development of my eldest child, who experienced educational and developmental challenges. In August 2004, I re-entered the work force with a new focus on research areas related to clinical science, maternal-newborn-child health (MNCH), and implementation science. I was the primary contributor to the successful East Africa leDEA consortium grant application in 2005, and served as a co-Investigator for the East Africa leDEA consortium from 2007-2011.

1. Salamone, J.D., Cousins, M.S. and **Bucher, S.** (1994) *Anhedonia or anergia?* Effects of haloperidol and nucleus accumbens dopamine depletion on instrumental response selection in a T-maze cost/benefit procedure. *Behavioral Brain Research*, 1994, 65(2), pp. 221-229
2. Alonzo, TA, Nakas, CT, Yiannoutsos, CT and **Bucher, S.** A comparison of tests for restricted orderings in the three-class case, *Statistics in Medicine*, 2009, 28(7), pp. 1144-1158.
3. Nyandiko, WM, Otieno-Nyunya, B., Musick, B., **Bucher-Yiannoutsos, S.**, Akhaabi, P., Lane, K., Yiannoutsos, CT., Wools-Kaloustian, K. Outcomes of HIV-exposed children in Western Kenya: Efficacy of Prevention of Mother to Child Transmission in a Resource-Constrained Setting, *J. Acquir Immune Defic Syndr*, 2010, May 1, 54(1), 42-50.
4. Wools-Kaloustian, K., Eller, AG., Otieno-Nyunya, B., Akhaabi, P., Puri, R., **Bucher, S.**, and Nyandiko, W. Traditional birth attendants: A forgotten resource in HIV education and prevention. *Journal of Obstetrics and Gynaecology of Eastern and Central Africa*, 2012, 24(1), pp. 11-17.

Health Equity & Health Services Research: I have explored the landscape of access to maternal-newborn-child health (MNCH) services by individuals and communities, as well as health system characteristics that may impact the ability of key stakeholders and end-users to deliver evidence-based MNCH care in Indiana and international settings.

1. Amick E, Naanyu V, **Bucher S**, Henry B, [Perceptions of Global Health Engagements in Relation to the COVID-19 Pandemic Among Health Care Workers and Administrators in Western Kenya: Protocol for a Multistage Qualitative Study](#), *JMIR Research Protocols*, 2023 (Volume 12; July 19) DOI: 10.2196/41836; PMID: 37315197
2. Jewett CG, Sobiech KL, Donahue MC, Alexandrova M, **Bucher S.** [Providing Emotional Support and Physical Comfort During a Time of Social Distancing: A Thematic Analysis of Doulas' Experiences During the Coronavirus Pandemic](#). *Community Health Equity Research & Policy*. 2022;0(0). doi:10.1177/0272684X221094172
3. Ray H, Sobiech KL, Alexandrova M, Songok JJ, Rukunga J, **Bucher S.** [Critical Interpretive Synthesis of Qualitative Data on the Health Care Ecosystem for Vulnerable Newborns in Low- to Middle-Income Countries](#). *J Obstet Gynecol Neonatal Nurs*. 2021 Sep;50(5):549-560. doi: 10.1016/j.jogn.2021.05.001. Epub 2021 Jul 21. PMID: 34302768
4. Kunkel M, Marete I, Cheng ER, **Bucher S**, Liechty E, Esamai F, Moore JL, McClure E, Vreeman RC. [Place of delivery and perinatal mortality in Kenya](#). *Semin Perinatol*. 2019 Aug;43(5):252-259. doi: 10.1053/j.semperi.2019.03.014. Epub 2019 Mar 16. PMID: 31104765

Global Network for Women's and Children's Health Research: Through my long-term involvement with the Global Network, I contributed to the development of numerous research protocols, human subjects ethics applications, and subsequent study implementation, including: development of a large-scale, population-based maternal-newborn registry; community-based study of Emergency Obstetric and Newborn Care; global survey of community-based birth attendants; international trial of antenatal corticosteroids to reduce perinatal mortality; a multi-site, global implementation trial of neonatal resuscitation training and low-dose aspirin to prevent premature birth. For these studies, I have contributed as a member of the Steering Committee, and spent substantial time in Kenya, traveling to the 8 clusters in our Western Kenya catchment area, to perform duties related to all aspects of the successful implementation of clinical trials research.

1. Tita ATN, Carlo WA, McClure EM, Mwenechanya M, Chomba E, Hemingway-Foday JJ, Kavi A, Metgud MC, Goudar SS, Derman R, Lokangaka A, Tshetu A, Bauserman M, Bose C, Shivkumar P, Waikar M, Patel A, Hibberd PL, Nyongesa P, Esamai F, Ekhuaguere OA, **Bucher S**, Jessani S, Tikmani SS, Saleem S, Goldenberg RL, Billah SM, Lennox R, Haque R, Petri W, Figueroa L, Mazariegos M, Krebs NF, Moore JL, Nolen TL, Koso-Thomas M; A-PLUS Trial Group. [Azithromycin to Prevent Sepsis or Death in Women Planning a Vaginal Birth](#). *N Engl J Med*. 2023 Mar 30;388(13):1161-1170. doi: 10.1056/NEJMoa2212111. Epub 2023 Feb 9. PMID: 36757318.
2. Matthew K Hoffman, Shivaprasad S Goudar, Bhalachandra S Kodkany, Mrityunjay Metgud, Manjunath Somannavar, et al.,

on behalf of the **ASPIRIN Study Group**, [Low-dose aspirin for the prevention of preterm delivery in nulliparous women with a singleton pregnancy \(ASPIRIN\): a randomised, double-blind, placebo-controlled trial](#), *The Lancet*, 2020, Vol 395 (10220), Pages 285-293, ISSN 0140-6736, [https://doi.org/10.1016/S0140-6736\(19\)32973-3](https://doi.org/10.1016/S0140-6736(19)32973-3).

3. **Bucher S**, Nowak K, Otieno K, Tenge C, Marete I, Rutto F, Kembai M, Achieng E, Ekhuagure OA, Nyongesa P, Esamai FO, Liechty EA. [Birth weight and gestational age distributions in a rural Kenyan population](#). *BMC Pediatr*. 2023 Mar 8;23(1):112. doi: 10.1186/s12887-023-03925-2. PMID: 36890485; PMCID: PMC9993805.
4. **Bucher, S**, Marete, I., Tenge, C., Liechty, E., Esamai, F., Patel, A., Kodkany, B., Garces, A., Chomba, E., Belizan, J., Pasha, O., Hibberd, P., Derman, R., Otieno, K., Hambidge, M., Carlo, W., Chemwolo, C., Buekens, P., Goldenberg, R., McClure, E., Moore, J., Wright, D., Saleem, S., Kosi-Thomas, M. "[A prospective observational description of frequency and timing of antenatal care attendance and coverage of selected interventions in Argentina, Guatemala, India, Kenya, Pakistan, and Zambia](#)," *Reproductive Health*, 2015, 12(Suppl 2); S12 (8 June 2015)

Implementation and Dissemination Science: On behalf of the American Academy of Pediatrics (AAP), I was a member of the Editorial Committees which wrote three *Helping Babies Survive (HBS)* curricula: *Helping Babies Breathe*, *Essential Care for Every Baby*, and *Essential Care for Small Babies*. I was actively involved, either as PI (HBB; ECEB) or co-Investigator (ECSEB) in the global beta-evaluations and field tests of each program

1. Hippe, D, Umoren, RA, McGee, A, **Bucher, SL**, Bresnahan, B. (2020) [A targeted systematic review of cost analyses for implementation of simulation-based education in healthcare](#), *Sage Open Medicine*, (March 19), <https://doi.org/10.1177/2050312120913451>
2. Bellad, RM., Bang, A., Carlo WA., McClure EM., Meleth, S., Goco, N., Goudar, SS., Derman RJ., Hibberd PL., Patel A., Esamai F., **Bucher, S**, Gisore, P., Wright LL., HBB Study Group. "[A pre-post study of a multi-country scale up of resuscitation training of facility birth attendants: Does Helping Babies Breathe training save lives?](#)" *BMC Pregnancy and Childbirth*, 2016, August 16(1):222 doi: 10.1186/s12884-016-0997-6.
3. Thukral, A., Lockyer, J., **Bucher, S.L.**, Berkelhamer, S., Bose, C., Deorari, A., Esamai, F., Faremo, S., Keenan, W., McMillan, D., Niermeyer, S., [Evaluation of an educational program for essential newborn care in resource-limited settings: Essential Care for Every Baby](#), *BMC Paediatrics*, 2015, June 25;15:71.
4. Singhal, N., Lockyer, J., Fidler, H., Keenan, W., Little, G., **Bucher, S**, Qadir, M., Niermeyer, S. [Helping Babies Breathe: Global neonatal resuscitation program development and formative educational evaluation](#). *Resuscitation*, 2012, Jan; 83(1), 90-96; Epub July 29, 2011.

Digital Health and Biomedical engineering: My work in maternal-newborn global health research has sparked an interest in the use of innovative solutions to strengthen health systems and improve maternal and newborn health outcomes in low/middle-income country settings. I have invented a biomedical device called NeoWarm to prevent neonatal hypothermia and facilitate the uptake, adoption, and compliance to kangaroo mother care, and co-developed a suite of open-source mobile phone-based apps by which health workers can access educational resources, decision-support, and perform data collection functions to support delivery of evidence-based maternal and newborn care interventions. The NeoWarm device has won a variety of awards for innovation and research excellence. The mHBS/DHIS2 app has been recognized as one of the only digital health tools purpose-developed to support neonatal resuscitation implementation in low/middle-income countries.

1. Ezenwa BN, Umoren R, Fajolu IB, Hippe DS, **Bucher S**, Purkayastha S, Okwako F, Esamai F, Feltner JB, Olawuyi O, Mmboga A, Nafula MC, Paton C, Ezeaka VC. [Using Mobile Virtual Reality Simulation to Prepare for In-Person Helping Babies Breathe Training: Secondary Analysis of a Randomized Controlled Trial \(the eHBB/mHBS Trial\)](#). *JMIR Med Educ*. 2022 Sep 12;8(3):e37297. doi: 10.2196/37297. PMID: 36094807.
2. Umoren R*, **Bucher S***, Hippe DS, Ezenwa BN, Fajolu IB, Okwako FM, Feltner J, Nafula M, Musale A, Olawuyi OA, Adeboboye CO, Asangansi I, Paton C, Purkayastha S, Ezeaka CV, Esamai F. [eHBB: a randomised controlled trial of virtual reality or video for neonatal resuscitation refresher training in healthcare workers in resource-scarce settings](#). *BMJ Open*. 2021 Aug 25;11(8):e048506. doi: 10.1136/bmjopen-2020-048506. PMID: 34433598; PMCID: PMC8390148. *Co-equal first authors
3. **Bucher, SL.**, Cardellichio, P., Muinga, N., Patterson, JK, Thukral, A., Deorari, AK., Data, S., Umoren, R., Purkayastha, S. (2020) [Digital Health Innovations, Tools, and Resources to Support Helping Babies Survive Programs](#), *Pediatrics*, 146 (Supplement 2; Oct) S165-182; DOI: 10.1542/peds.2020-016915
4. Bluhm NDP, Hoilett OS, Walters BD, Pickering AS, **Bucher SL**, Linnes JC. [NeoWarm: Kangaroo Mother Care with Continuous Temperature Tracking and Heating](#). *Annu Int Conf IEEE Eng Med Biol Soc*. 2020 Jul;2020:4514-4517. doi: 10.1109/EMBC44109.2020.9176509. PMID: 33018997

Complete publication list at Google Scholar:

<https://scholar.google.com/citations?user=KFrJGa4AAAAJ&hl=en>