

# A Feminist HCI Approach to Designing Postpartum Technologies: "When I first saw a breast pump I was wondering if it was a joke."

**Catherine D'Ignazio**  
Emerson Engagement Lab  
Boston, MA, USA  
catherine\_dignazio@emerson.edu

**Alexis Hope**  
MIT Media Lab  
Cambridge, MA, USA  
alexishope@gmail.com

**Becky Michelson**  
Emerson Engagement Lab  
Boston, MA, USA  
becky@elab.emerson.edu

**Robyn Churchill**  
Clinton Health Access  
Initiative  
Boston, MA, USA  
robyncnm@gmail.com

**Ethan Zuckerman**  
MIT Media Lab  
Cambridge, MA, USA  
ethanz@media.mit.edu

## ABSTRACT

In recent years, the CHI community has begun to discuss how HCI research could improve the experience of motherhood. In this paper, we take up the challenge of designing for this complex life phase and present an analysis of data collected from a design process that included over 1,000 mother-submitted ideas to improve the breast pump, a technology that allows mothers around the world to collect and store their breast milk. In addition to presenting a range of ideas to improve this specific technology, we discuss environmental, legal, social, and emotional dimensions of the postpartum period that suggest opportunities for a range of additional supportive technologies. We close with insights linking our findings to ongoing discussions related to Feminist HCI theory, crowdsourcing, and participatory design.

## Author Keywords

Motherhood; Feminist HCI; Human-Centered Design; Crowdsourcing; Breastfeeding; Postpartum

## ACM Classification Keywords

H.5.m. Information Interfaces and Presentation (e.g. HCI): Miscellaneous

## INTRODUCTION

*"Hi! I wanted to cry out HOORAY when I read that you were tackling breast pumps!! I'm a working mother of an 8 month old and have been in the medical device industry for some time. When I first saw a breast pump I was wondering if it was a joke." - Mother 8770*

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyrights for third-party components of this work must be honored.

Copyright is held by the owner/author(s).  
CHI'16, May 07-12, 2016, San Jose, CA, USA. ACM 978-1-4503-3362-7/16/05.  
<http://dx.doi.org/10.1145/2858036.2858460>



This work is licensed under a Creative Commons Attribution International 4.0 License.

Motherhood is a complex life phase that brings with it physical changes, changing relationships, new responsibilities, and shifting notions of personal identity. Especially in the early phases of parenting an infant, the nature of this role can pose many challenges for families struggling to adjust to new realities. Mothers<sup>1</sup> of infants can suffer from social isolation, physical exhaustion, elevated stress levels, and postnatal exhaustion [22]. At the same time, motherhood can be exciting, joyful, and emotionally enriching.

One of the most significant experiences a mother may have in the postpartum phase is breastfeeding. Breastfeeding is on the rise in the U.S. and across the world and is recognized in public health policy as the ideal way to feed a newborn baby [30]. According to the Centers for Disease Control and Prevention (CDC), 79% of mothers initiate breastfeeding in the United States [16]. In the developing world, 39% of children less than six months old are exclusively breastfed, according to UNICEF [47]. The World Health Organization (WHO) recommends breastfeeding for at least the first two years of a child's life [30], and increasing breastfeeding rates in low and middle income countries has been a target of many NGOs as a step toward meeting Millennium Development Goal 4 to reduce childhood mortality [5]. Researchers believe that breastfeeding within the first hour of birth could eliminate 20% of the total 2.8 million annual infant deaths [28]. National policy recommendations are in place in many countries [8, 6]. However, there are numerous challenges for mothers to initiate and sustain the breastfeeding relationship, and by 6 months only 18.8% of American babies are exclusively breastfed [16]. The U.S. Surgeon General has identified the most common barriers to breastfeeding as: 1) Poor social and family support, 2) Embarrassment, 3) Lactation Problems, 4) Employment and Child Care, and 5) Barriers Related to Health Services [48].

<sup>1</sup>In this paper, we use the term "mother" expansively to denote all female and gender-variant parents with a particular focus on those who are breastfeeding and pumping.





















