



Royal Academy  
of Engineering

Symposium report

# Frontiers of Development

Inclusivity and wellbeing  
in the first 2,000 days of life

10-13 March 2019 | Cambridge, UK

**WELLCOME  
GENOME  
CAMPUS**

 **GCRF**  
Global Challenges  
Research Fund





## Introduction to Frontiers of Development

The Frontiers of Development programme brings together 60 of the best early- and mid-career researchers and practitioners from engineering, medical, social and natural science backgrounds from across industry, NGOs and academia in multidisciplinary workshops.

These highly interactive and curated symposia look at international development themes through an interdisciplinary lens, encouraging collaboration and knowledge transfer between a range of participants.

Competitively allocated seed funding is available to strengthen the collaborations developed at the symposia.

The Royal Academy of Engineering is a delivery partner of the UK government's Global Challenges Research Fund (GCRF), that supports cutting-edge research to address the challenges faced by developing countries. The GCRF funds the Joint Resilient Futures Initiative that consists of a group of programmes run across the four national academies. The Frontiers of Development programme is one such programme, run by the Royal Academy of Engineering with support from the Royal Society, the Academy of Medical Sciences and the British Academy.





# Contents

The Royal Academy of Engineering is grateful for the support received from the Wellcome Trust and the National Institute for Health Research with organising this event.



**NIHR** | National Institute  
for Health Research

## The first 2,000 days of life

The third event in the Frontiers of Development series took place between 10 and 13 March 2019 at the Wellcome Genome Campus. This was the final event in the Inclusivity and Wellbeing series. Approximately 60 experts from different disciplines and countries came together to discuss the challenges associated with the first 2,000 days of life. This event was supported by the Wellcome Trust and the National Institute for Health Research.

Ensuring good health and wellbeing, providing quality education and advocating gender equality were some of the Sustainable Development Goals explored by this symposium. Participants looked at factors that affect the first five years of a child's life. Drawing on the UN Global Strategy for Women's, Children's and Adolescents' Health (2016-2030) to create a framework for the event, participants considered what can be done to help future generations survive and thrive in an environment that promotes sustainable, prosperous childhood development.



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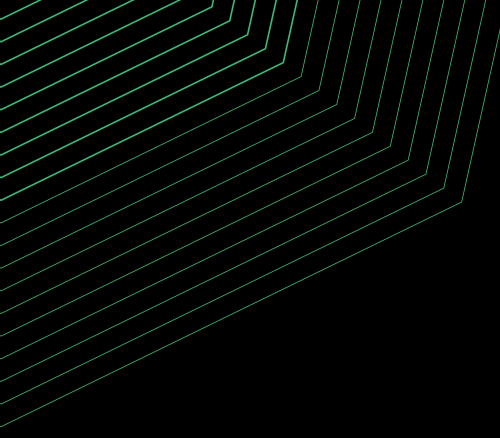
"Frontiers of Development brings people from diverse backgrounds together to address some important questions about enabling children to flourish in the first 2,000 days of their life and beyond.

The beauty of this programme is that we have some seed funding to allocate. This means that some of the ideas discussed can be taken forward in an exciting way. In a few years' time we will be able to sit back and say: 'It started at Frontiers of Development and now these ideas are changing the world!'"

**Professor Sir Ian Diamond FBA FRSE DL**

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The event was co-chaired by Professor Sir Ian Diamond FBA FRSE DL and Professor Anthony Costello FMedSci. Sir Ian is a statistician who has worked in many countries on the analysis of population and health data. He is currently Chair of Plan UK, Council, Edinburgh College, and the British Universities and Colleges Sport and the Social Security Advisory Committee. He is also a board member of UKRI and UKSA. Anthony is the Scientific Director of the Lancet Countdown for Climate Action and Health. He was the Director of the Department of Maternal, Child and Adolescent Health, World Health Organization (WHO) Geneva until March 2018. Previously, he was Director of the Institute for Global Health at University College London. He has published 350 papers on global maternal and child health, including 12 population cluster randomised trials in India, Malawi, Bangladesh and Nepal, which showed large reductions in maternal and newborn death rates.

60 experts from different disciplines and countries came together to discuss the challenges associated with the first 2,000 days of life



“Frontiers of Development has been a brilliant event. There’s been a lot of interaction, group discussions, a lot of social networks created and, even better, some money is being put up to seed fund new efforts. There were several people looking at the ways in which technologies from quite high-tech labs could be transplanted into low-income settings.

There’s a lot of material about early childhood development, how you can measure and assess whether children are developing at the right speed. There were also some clever techniques, using video, for example, to study interactions between mothers and children. I think it will be very interesting to see what develops.”

**Professor Anthony Costello FMedSci**



# Survive

Reducing child mortality – learning from the past and lessons for the future

## Session co-chairs

Queen Dube and Victoria Nakibuuka

## Presentations

1. How can we accelerate reductions in neonatal mortality in order to reduce childhood deaths?

**Queen Dube, Queen Elizabeth Central Hospital, Malawi**

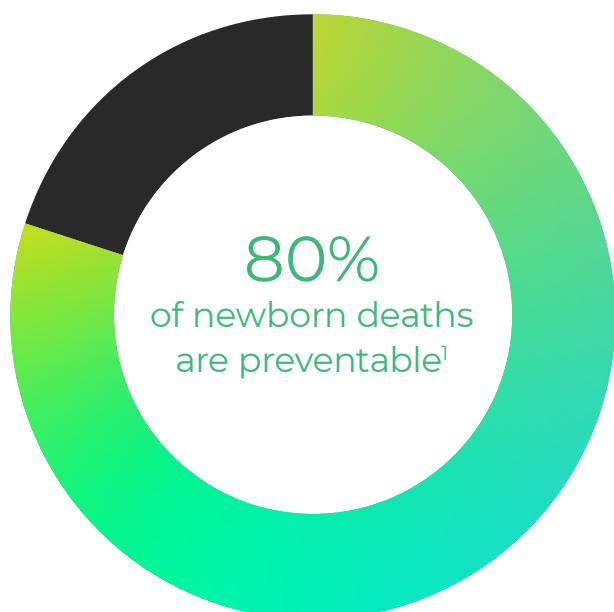
2. What is the role of technology in reducing child mortality

**Stephen Tashobya, CEO, Wekebere**

3. To what extent do social determinants affect child mortality?

**Alexander Manu, Liverpool School of Tropical Medicine**

- Over the past 25 years there has been tremendous progress made in reducing child mortality globally. However, this progress has not been universal across the globe.
- The majority of high child death rates are concentrated in two regions: Southern Asia and sub-Saharan Africa. With this backdrop, Victoria Nakibuuka introduced the session by setting the context of the reality for many on-the-ground practitioners through the sad story of visit she made to a baby in rural Uganda who was born at 29 weeks and weighed only 900 grams. The baby was born in hospital, which should have improved chances of survival, but died due to complications related to inadequate technology in the hospital.
- Building on this, Queen Dube explained that though the main causes of infant mortality are known and that it is well understood that 80% of newborn deaths are preventable, at the current rate of change it will be nearly 100 years before a baby born in Africa has the same chances of survival as one born in North America today. She spoke of the importance of having the right equipment in place and ensuring that it is tailored for the environment where it will be used in order to ensure high quality of care.
- This led into Stephen Tashobya's talk, which focused on the role of technology, specifically diagnostics and monitoring, in reducing child mortality. Stephen explained that one in five pregnancies have complications that, without intervention, may result in the deaths of one million pre-term babies each year. Wekebere, a tool developed by Stephen, aims to tackle this issue. It is a low-cost, low-power, reusable device that gives auditory feedback in real-time. This enables early detection that a foetus is in distress and flashes a red/green light which indicates whether the mother should seek further help. Crucially, this technology can be used anywhere and at any time.



<sup>1</sup> <https://data.unicef.org/resources/every-child-alive-urgent-need-end-newborn-deaths/>



Alexander Manu concluded the session by focusing on social determinants that affect child mortality. He advocated change to models that demonstrate the 'inverse care law' whereby care is least accessible and most rarely provided for the populations that are the most in need.

Alexander began the interactive elements of the session by talking about the Ghana Newhints Trial. It is a study aimed at evaluating the effectiveness of home visits for the survival of newborn children in Ghana, following a model of community-based approaches that have been implemented in South Asia. The study concluded that the effectiveness of home visits in improving survival is determined by the matched improvement in facility quality of care.

Symposium delegates were split into groups to consider the barriers and solutions to implementation of evidence-based interventions, focussing discussions around the following questions:

- What innovations already exist?
- How they can be scaled up?
- How professionals can use a multidisciplinary approach to combat the high rates of child mortality?



A common theme from these discussions was the importance of engagement with stakeholders from the beginning of an intervention. Delegates highlighted that this should include patients, community members, professionals from other disciplines and policymakers at the governmental level. Such an arrangement would help align the donor agenda with the community needs and ensure that the language and terminology used are understood by everyone involved. Additionally, further engagement with the key stakeholders would help professionals understand what has already been addressed, researched or trialled so that they are not starting from scratch with every project. There were also discussions around funding and how the sustainability of projects often suffers when funding runs out. Microfinancing and social impact bonds were suggested as means of maintaining the provision of funds.

The session ended on a positive note with participants joining hands and stating: **'Together we can'**. This simple gesture highlighted the significance of multiple disciplines coming together to discuss innovative solutions to reducing global child mortality.





# Thrive

Reaching full developmental potential

## Session co-chairs

Gabriella Conti and Pasco Fearon

## Presentations

1. Can participatory groups and home visits improve children's growth in rural India?

**Suchitra Rath, Ekjut**

2. How can we co-design play areas to ensure children can truly thrive?

**Marie Williams, Dream Networks/  
University College London**

3. Can we measure love?

**Rob Hughes, Children's Investment  
Fund Foundation**



The World Health Organization's Nurturing Care Framework underlines the importance of healthy nutrition, responsive caregiving, and opportunities to play and learn in early life for long-term economic growth and the achievement of peaceful, productive and poverty-free societies around the world.

One third of stunted children in the world live in India. This was the context set by Suchitra Rath, who gave an insight into her work with an Indian NGO, Ekjut. She explained how community-based strategies of participatory groups and home visits to mothers can improve children's growth. The results of this work showed that where interventions had been implemented, there was a small improvement in stunting, more infants survived until 12 months, fewer children were underweight at 18 months, and more caregivers washed their hands before feeding children. Though the interventions proved beneficial to children's diets, weight and ultimately their survival, Suchitra acknowledged that more intense efforts are required to reduce stunting significantly. For example, she described how impacts could be made by addressing challenges such as the low age of mothers at their first pregnancy, maternal under-nutrition, infections in the post-natal period, and families' financial barriers to improving children's diets.





Marie Williams introduced her research into how play areas that are co-designed by children can enable them to thrive. Play is recognised as a fundamental requirement for childhood development and a right for all children. However, in rural and urban communities across the world, children repeatedly lack access to engaging and inclusive play areas. Marie's research focuses on understanding the users (children) and their cultural contexts, how they interact with the environment as well as their behaviour patterns. She explained that by involving children in the design process, their overall playing experience can be improved and made more inclusive. Her presentation illustrated this process in action across the UK and sub-Saharan Africa, where Marie has worked with her social enterprise, Dream Networks.

'Can we measure love?' was the question posed by the final speaker, Rob Hughes, a Senior Fellow at the Children's Investment Fund Foundation. Responsive caregiving is a crucial part of brain development and recent research is enabling us to better understand and describe the mechanisms through which poverty and deprivation can impact babies' and toddlers' brains. Increasingly, new tools are being developed to measure interaction, love and care between children and their caregivers in early childhood, through spatial analysis, linguistic analysis and child-centred wearables. For example, Rob questioned if a 'fitbit' or thermometer for care could be developed to measure what matters in near real-time using machine learning.

Community-based strategies of participatory groups and home visits to mothers can improve children's growth



Participants were then split into groups to consider questions and challenges that had been posed by the speakers. These covered topics such as the most effective methods to integrate stimulation into existing nutrition and health interventions in the first 1,000 days; how to better measure early childhood interaction in order to enhance it; and creating and presenting a tool or approach that enables children to express their opinions on the challenges they have with playing outdoors within their local environment.

# Transform

Realising an environment for sustainable, prosperous childhood development

## Session co-chairs

Kevin Chan and Joni Pegram

### Presentations

1. What are the impacts and opportunities at the climate-child health interface?

**Rebecca Philipsborn, Emory University School of Medicine**

2. How can we protect and empower children in a changing climate? A perspective from UNICEF.

**Meghna Das, UNICEF UK**

3. Does government have a role to protect children's rights by preventing climate change?

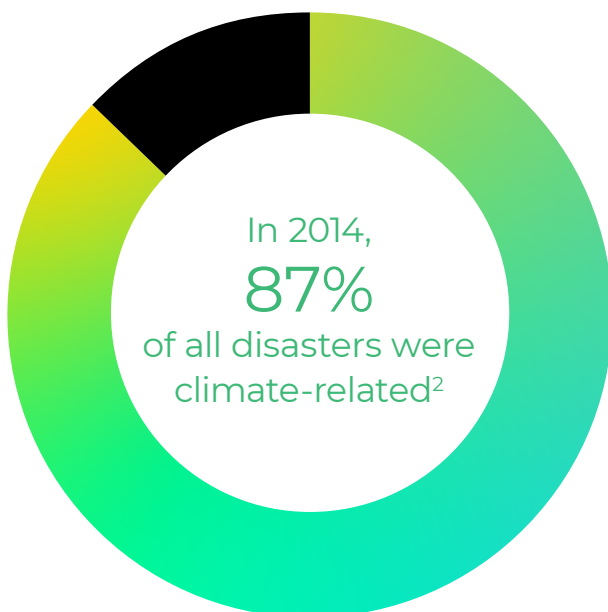
**Gita Parihar, independent legal consultant**

"You can look at every single factor, every single development indicator for children – it will be impacted by climate change."

### Joni Pegram, Session Chair

This quote set the context for the third session which examined the impacts of climate change, the drive towards gender equality, and the role of government in childhood development.

The first speaker, Rebecca Philipsborn, talked through the projected changes in the global climate and explained how this is already impacting on the lives of children. Heat exposure, poor air quality, infections, drought, flooding, and displacement are examples of climate-related impacts on child health that can begin even before they are born. Rebecca reminded the audience that children are not small adults; they are more vulnerable to climate change events because of their anatomic, cognitive, immunological, and psychological differences. She recommended that child health and climate researchers should seek areas of common ground for improving child health in the context of a changing climate.



<sup>2</sup> <https://www.undrr.org/news/ten-year-review-finds-87-disasters-climate-related>





Meghna Das, Senior Programme Specialist for Sustainability at UNICEF UK, followed by sharing UNICEF's priorities and some case studies. She explained how climate change is a child-rights issue and presented stark statistics in evidence of this position. For example, she highlighted that:

- More than half a billion children worldwide live in extremely high flood-risk zones.<sup>3</sup>
- More than 160 million children live in high or extremely high drought-risk zones.<sup>3</sup>
- Close to 300 million children live in areas where the outdoor air is toxic, exceeding international limits by six times.<sup>4</sup>
- In 2014, 87% of all disasters were climate-related.<sup>4</sup>
- Children represent 50% to 60% of natural disaster victims.<sup>5</sup>



Despite the fact that children are the least responsible for climate change, Meghna explained that they will be the most affected by it. Hence, UNICEF advocates that more countries should implement child-sensitive national plans for climate change adaptation or mitigation and take action to reduce air pollution for improved child wellbeing, for example through UNICEF-supported programmes.

Gita Parihar, an environmental and rights advocate, concluded the discussions by outlining the broad obligations of governments in relation to climate change with reference to the Paris Agreement adopted in December 2015. She explained how the human rights framework applies to both climate change and children. It was discussed what these two frameworks mean for the protection of children overall, and the gaps in their implementation. Gita concluded by highlighting two case studies where children have taken legal action against their home countries in the context of climate change – in the US and in Colombia.



3 [https://www.unicef.org/publications/files/Unless\\_we\\_act\\_now\\_The\\_impact\\_of\\_climate\\_change\\_on\\_children.pdf](https://www.unicef.org/publications/files/Unless_we_act_now_The_impact_of_climate_change_on_children.pdf)

4 [https://www.unicef.org/publications/files/Unless\\_we\\_act\\_now\\_The\\_impact\\_of\\_climate\\_change\\_on\\_children.pdf](https://www.unicef.org/publications/files/Unless_we_act_now_The_impact_of_climate_change_on_children.pdf)

5 [https://www.unicef.org/cbsc/files/CommunicatIn\\_for\\_development\\_support\\_to\\_public\\_health\\_preparedness.pdf](https://www.unicef.org/cbsc/files/CommunicatIn_for_development_support_to_public_health_preparedness.pdf)

Child health and climate researchers should seek areas of common ground for improving child health in the context of a changing climate



Participants were then split into groups to look at three case studies from China, Bangladesh and sub-Saharan Africa. In the context of climate change, participants workshoped a set of interventions that could be taken to tackle the challenges faced by children. All groups considered the following questions:

- What can be done?
- Which actors need to be involved?
- What can communities of the event participants contribute?



## Case study 1 Air pollution in China



Participants decided that the first step was to identify the predominant source of pollution and then to increase public awareness using mass media. Suggestions to overcome pollution included using technology to create protective masks, avoiding vigorous exercise on high-pollution days and promoting the use of electric vehicles.

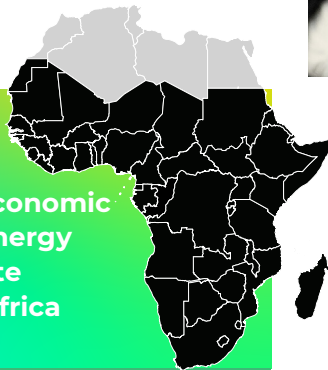




## Case study 2

### River erosion in Bangladesh

Participants mapped the socio-economic effects of river erosion, from the loss of homes and crops through to displacement and loss of status. Such consequences can lead to early marriage, early pregnancy and a number of risks to children's lives, including disease and drowning. The delegates recognised the need for an integrated response at all levels, from the very localised through to national levels.



## Case study 3

### The challenge of socio-economic growth and increasing energy requirements with climate change in sub-Saharan Africa

Participants suggested that governments fund large-scale solar projects in order to increase the amount of sustainable energy available, but also recognised that smaller-scale solutions would be necessary for more rural environments. They discussed the importance of education within the community by raising awareness about energy usage.

Close to 300 million children live in areas where the outdoor air is toxic, exceeding international limits by six times<sup>6</sup>

<sup>6</sup> [https://www.unicef.org/publications/index\\_92957.html](https://www.unicef.org/publications/index_92957.html)

## Frontiers insights

The Frontiers Insights session was run as a plenary by the two event chairs encouraging all participants to be part of the same conversation. Six questions were posed and participants had approximately 10 minutes per question to contribute. Key points from the discussions were:

### 1. How can the quality of care for newborn infants, including pre-term infants, be improved?

- **Provide key, simple messaging**

There is a huge amount of confusion about what women 'should' be doing when caring for new infants.

- **Include neo-natal care training in medical schools**

Medics-in-training need to focus on more than diseases, such as malaria. Specialist training is required for newborn care and Level 2 care for neonates needs to be standardised in district hospitals.

- **Improve community interventions**

There is a need to strengthen the supply-side of community interventions. The bond between the doctor and the mother is important for ensuring that the quality of care given is respectful.







More than half a billion children worldwide live in extremely high flood-risk zones<sup>7</sup>

And more than 160 million children live in high or extremely high drought-risk zones<sup>8</sup>

## 2. How can detection, prevention and treatment of infectious diseases be improved?

- **Improve data for low-resource settings**

This will help to create more appropriate solutions and expedite the learning and scaling-up processes. An example given of a solution for rural settings was drones that transport blood supplies in rural Rwanda.

- **Promote social and behavioural change**

Not enough research funding is spent on disease prevention. There is scope for great improvements through the promotion of good practices for health in the community. Proper hand washing is a leading example.



## 3. How can slow growth in the first year of life be tackled?

- **Improve pre-conception nutrition**

This has been proven to have significant impacts on child growth.

- **Provide cheaper breast milk banks and fortifiers**

Fortifiers are very expensive but are necessary for parents to provide the nourishment that babies need.

- **Support mothers under stress**

Stress plays an important role on growth both pre- and post- pregnancy. Rather than casting a negative stigma on mothers experiencing stress, it needs to be considered as a marker for identifying where support is required.

- **Support mothers with postnatal depression**

Women need better support to ensure their own needs, as well as those of their babies, are properly met. Standardised social intervention points were suggested as a way to better support affected families.

7 [https://www.unicef.org/publications/files/Unless\\_we\\_act\\_now\\_The\\_impact\\_of\\_climate\\_change\\_on\\_children.pdf](https://www.unicef.org/publications/files/Unless_we_act_now_The_impact_of_climate_change_on_children.pdf)

8 [https://www.unicef.org/publications/files/Unless\\_we\\_act\\_now\\_The\\_impact\\_of\\_climate\\_change\\_on\\_children.pdf](https://www.unicef.org/publications/files/Unless_we_act_now_The_impact_of_climate_change_on_children.pdf)

#### 4. How can proper nurture and care be ensured during infancy?

- **Embrace the role that technology can play**

There are applications that can indicate various measures of a baby's wellbeing during pregnancy. These can be adapted for local contexts, cultures and languages.

- **Promote the importance of parents being present**

It is not inherent in all cultures that parents will play the most significant role in early caregiving. Often this is due to the sheer necessity to work and ensure income. Policy changes, such as longer parental leave, could help alleviate this pressure and allow parents to focus on caregiving.

- **Establish workplace nurseries**

In some communities working mothers must use unregulated daycare centres and employ untrained people to care for their children. This can result in sub-standard caretaking (for example, workers eating the food prepared for the children as they themselves are malnourished) or children looking after children. Participants discussed the creation and/or promotion of workplace nurseries as a potential solution.

#### 5. How can water, sanitation and hygiene (WASH) improvements be refocused to take account of child development?

- **Pitch WASH as part of an integrated approach**

WASH should be factored into integrated, microeconomic strategies for improving community health and nutrition.

- **Learn about the environment**

Effective WASH services in humanitarian contexts can only be provided by knowing the physical environment and learning what could contaminate clean water.

- **Engage with, and capitalise on, political will**

Big infrastructure changes are needed to improve WASH provisions. However, challenges associated with those projects are interdisciplinary and complex. New cost-sensitive and efficient technologies, such as Chinese solar technology, exist and could be of huge benefit in an African context. However, there is a need for political will to implement them.







Children represent 50% to 60% of natural disaster victims<sup>9</sup>

## 6. How can we tackle gender discrimination in children under five years old?

- **Change the politics**

Children need to see gender equality, whether that be in the make-up of students studying a specific subject at school, or in the decision-makers and leaders they see in the media.

- **Educate at every level**

There is a need for activism to focus on community campaigns consisting of talking to parents and creating role models. For example, perceptions about which parent is the main breadwinner and which is the main caregiver need to be challenged. Shared parental leave is a relatively new concept that needs to be normalised through educating employers about what it is and how it functions.

- **Be aware of unconscious bias**

In many children's books the active character is often male. This is an easy place to make a change, for example by encouraging children's authors to use gender-neutral language.



## Cyril Engmann

PATH and University of Washington



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Cyril is the Global Program Leader at PATH, a practising neonatologist and Professor of Paediatrics and Public Health at the University of Washington. He is credited with initiating numerous global initiatives in the health and nutrition of mothers, new-born babies, and children, including the UN's Every Woman Every Child strategy. Aided by country case studies, Cyril outlined the science of implementing evidence-based best practices at scale. He talked about the effectiveness of purpose-driven partnerships between academia, industry, medicine and health, non-governmental agencies, and governments. He also provided an insight into his own personal career and lessons he has learned along the way.

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## Mercy Musomi

Girl Child Network



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Mercy is the Executive Director of Girl Child Network, an organisation that works with children, young people and women to promote child rights and empower them to learn and lead. Joining the symposium remotely from Kenya, Mercy spoke about her work designing and implementing innovative projects that respond to the needs of the most vulnerable. These projects positively impact quality of life and inclusion, particularly for children from hard-to-reach and resource-poor households. The initiatives included advocating for registration of children at birth as well as promoting and supporting families to register children born with disabilities to enable them to access social protection programmes from the government.

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## Seed funding awards

### WASH environments, sanitation policies and health outcomes during the first 2,000 days of life

- Melanie Luhrmann, Royal Holloway, University of London
- Alex IfeOluwa Akinwumi, Obafemi Awolowo University Teaching Hospitals
- Isaac Akinwumi, Covenant University

### Communities' languages, identities and belonging in participatory healthcare interventions

- Sabine Little, University of Sheffield
- Sneha Krishnan, LSHTM
- Ines Varela-Silva, Loughborough University

### Improving early childhood development in Ghana's inner cities/'Zongos': A child-centred perspective

- Alexander Ansah Manu, Liverpool School of Tropical Medicine
- Sunil Bhopal, Royal Victoria Infirmary, London School of Hygiene and Tropical Medicine (LSHTM)
- Rob Hughes, Children's Investment Fund Foundation, LSHTM

### Developmental care packages to improve neonatal outcomes – a multidisciplinary approach

- Fiona Denison, University of Edinburgh
- Queen Dube, Queen Elizabeth Central Hospital
- Victoria Nakibuuka, Nsambya Hospital
- Zelee Hill, University College London
- James Boardman, University of Edinburgh
- Robert Ssekitoleko, Makerere University

### iSEP-SEQ: Neonatal sepsis monitoring in sub-Saharan Africa with a microbial cell-free DNA sequencing approach

- Maiwenn Kersaudy-Kerhoas, Heriot-Watt University
- Alex IfeOluwa Akinwumi, Obafemi Awolowo University Teaching Hospitals
- Ronita Luke, University of Sierra Leone
- Victoria Nakibuuka, Nsamya Hospital
- Queen Dube, Queen Elizabeth Central Hospital
- Fiona Denison, University of Edinburgh
- Motlalepula Pholo, Department of Agricultural Research Botswana

### Low-cost and lightweight sensing platform for monitoring sleep quality and posture for infants in Vietnam

- Sung-Hwan Jang, University of Plymouth
- Stephen Tashobya, Wekebere
- Hoang Minh Tu Van, Oxford University Clinical Research Unit
- Yong-Lae Park, Seoul National University

### Automated measurement of responsive caregiving at scale using machine learning

- Caspar Addyman, Goldsmiths, University of London
- Zelee Hill, University College London
- Brian Turyabagye, MamaOpe Medicals
- Rob Hughes, Children's Investment Fund Foundation, LSHTM
- Gabriella Conti, University College London
- Sunil Bhopal, Royal Victoria Infirmary, LSHTM
- Pasco Fearon, University College London

## Attendee list

Name	Organisation
Abdul Rahman Faiyah Bah	Life for African Mothers (LFAM)
Akinwumi Ifeoluwa Alex	Obafemi Awolowo University Hospitals Complex
Alexander Ansah Manu	Liverpool School of Tropical Medicine
Professor Anthony Costello	Lancet Countdown for Climate Action and Health
Arindam Bit	National Institute of Technology, Raipur, India
Brian Turyabagye	MamaOpe Medicals
Caspar Addyman	Goldsmiths, University of London
Catherine Draper	University of the Witwatersrand
Cyril Engmann	PATH & University of Washington
Emma Jolley	Sightsavers
Fiona Denison	University of Edinburgh
Gabriella Conti	University College London
Gita Parihar	Environmental Advocate
Hoang Minh Tu Van	Oxford University Clinical Research Unit
Sir Ian Diamond	Plan UK
Inês Varela-Silva	Loughborough University
Isaac Akinwumi	Covenant University
Janette Chow	University of Oxford
Jolene Skordis	University College London
Joni Pegram	Project Dryad
Judith Kimiywe	Kenyatta University
Kevin Chan	Memorial University
Lisa Morriss	Lancaster University
Maiwenn Kersaudy-Kerhoas	Heriot Watt University
Marie Williams	Dream Networks/University College London
Mbu Enow Robinson	Ministry of Public Health, Cameroon
Meghna Das	UNICEF UK
Mehran Moazen	University College London
Melanie Luhrmann	Royal Holloway & Institute for Fiscal Studies
Mercy Musomi	Girl Child Network





60 participants



Based in  
17 countries

Name	Organisation
Momodou K Darboe	MRC Unit, The Gambia, London School of Hygiene and Tropical Medicine
Monica Lakhanpaul	UCL, GOS Institute of Child Health
Motlalepula Pholo	Department of Agricultural Research, Botswana
Muki Shey	University of Capetown
Muzalema Mwanza	Safe Motherhood Alliance
Pamela Wadende	Kisii University
Pasco Fearon	University College London
Priti Parikh	University College London
Queen Dube	College of Medicine
Rebecca Bright	Therapy Box
Rebecca Philipsborn	Emory University
Rob Hughes	Children's Investment Fund Foundation and London School of Hygiene and Tropical Medicine
Ronita Luke	COMAHS, University of Sierra Leone
Rosalyn Archer	mOm Incubators Ltd.
Sabine Little	University of Sheffield
Siddharudha Shivalli	London School of Hygiene and Tropical Medicine
Sneha Krishnan	London School of Hygiene and Tropical Medicine
Stephen Bayley	University of Cambridge
Stephen Tashobya	Wekebere
Suchitra Rath	Ekjut
Sung-Hwan Jang	University of Plymouth
Sunil Bhopal	Royal Victoria Infirmary/LSHTM
Teresa Mwoma	Kenyatta University
Tina Chowdhury	Queen Mary, University of London
Victoria Nakibuuka	Nsambya Hospital
Vijayata Sengar	The Maharaja Sayajirao University of Baroda, India
Viji Velusamy	Manchester Metropolitan University
Zacharia Kimengich	Kenyatta National Hospital
Zelee Hill	University College London

## Event feedback

In the post-event survey, completed by 27 respondents, 100% of respondents said they would recommend attending a Frontiers of Development event. 85% rated the overall event 'excellent' and the remaining 15% rated it 'good'.

"Probably one of the best workshops I've ever attended!"

"I think it's wonderful how interdisciplinary this event is. I have learned a lot and the seed funding opportunity allows me to do the kind of interdisciplinary work that I have always wanted to do, but have not had the right contacts and opportunity to do so."

"This was an eye-opening opportunity about how to build synergy between disciplines to enhance support to children in the first 2,000 days of a child's life."

"This was the best organised meeting I have been to. Excellent work on all the logistics and in keeping us informed."

"Thanks for bringing together people from several disciplines. It is easier to generate ideas from this kind of symposium. It was good that the delegates were willing to share knowledge with one another, no matter what their level of experience."

"The event was excellent both in terms of the variety of the attendees, the logistics and the direct link to new seed funding."







**Royal Academy  
of Engineering**

The Royal Academy of Engineering is harnessing the power of engineering to build a sustainable society and an inclusive economy that works for everyone.

In collaboration with our Fellows and partners, we're growing talent and developing skills for the future, driving innovation and building global partnerships, and influencing policy and engaging the public.

Together we're working to tackle the greatest challenges of our age.

## Our 2025 ambition

### Talent & diversity

We'll grow talent by training, supporting, mentoring and funding the most talented and creative researchers, innovators and leaders from across the engineering profession – with an aim to help over 7,500 professionals to enhance their leadership skills.

We'll develop skills for the future by identifying the challenges of an ever-changing world and developing the skills and ideas we need to build a resilient and diverse engineering profession. We've set ourselves a target to work with over 500 engineering businesses and organisations to champion diversity and inclusion in the workplace.

### Innovation

We'll drive innovation by investing in some of the UK's most creative and exciting engineering ideas and businesses. In partnership with industry, entrepreneurs and academia, we're on course to support the growth of more than 500 companies through our Enterprise Hub.

We'll build global partnerships that bring the world's best engineers from industry, entrepreneurship and academia together to address the greatest global challenges of our age. As a leading voice in engineering and technology, we're working to build networks and partnerships in over 40 countries, across six continents.

### Policy & engagement

We'll influence policy through the National Engineering Policy Centre – providing independent and expert guidance to government, drawing on the expertise and creativity of over 450,000 engineers. In our 2020-25 strategy we've committed to working with over 1,000 policymakers in the UK and internationally to improve people's lives.

We'll engage the public by opening their eyes to the wonders of engineering and inspiring young people to become the next generation of engineers. Through campaigns like This is Engineering, we're changing perceptions of the profession and by 2025, we'll have helped a million young people – from every background in the UK – to explore a career in engineering.



For more information, including eligibility,  
please visit [raeng.org.uk/frontiers](https://raeng.org.uk/frontiers) and follow [@RAEngGlobal](https://twitter.com/RAEngGlobal)

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