



Bahir Dar University
College of Medicine and Health Sciences
Tana Research and Diagnostic Center (TRDC)
GM3D Technology Hub



International Conference Announcement

3DP-PR Ethiopia 2025

International Conference on 3D Printing and Pediatric Rehabilitation in Low-Resource Settings

Theme:

Transforming Pediatric Rehabilitation Through 3D Technology



ABOUT THE CONFERENCE

The **3DP-PR Ethiopia 2025** will gather global leaders, clinicians, engineers, and innovators to explore how 3D printing and integrated rehabilitation can revolutionize pediatric care in low-resource settings, particularly across Sub-Saharan Africa.

CONFERENCE OBJECTIVES

- Catalyze sustainable, tech-driven solutions for inclusive pediatric rehabilitation in underserved health systems.
- Foster interdisciplinary collaboration for scalable innovations benefiting children with disabilities.

KEY THEMES

- 3D Printing for Assistive Technologies
- Pediatric Rehabilitation for Neuromusculoskeletal Disorders
- Pediatric Prosthetics and Orthotics Innovation
- Burn Rehabilitation in Children
- Policy, Partnerships & Public Health Integration

WHO SHOULD ATTEND?

- Biomedical Engineers & 3D Printing Experts
- Pediatric Orthopedic & Neurosurgeons Rehabilitation Therapists & Social Workers
- Policymakers & NGO Leaders
- Researchers, Innovators & Graduate Students

ORGANIZING PARTNERS

- GM3D Technology Hub, Bahir Dar University (Host, Ethiopia)
- Reach Another Foundation (Co-Host, Ethiopia)
- Children's National Hospital (USA)
- Uppsala University Hospital (Sweden)

Join Us in Addis Ababa!

Shape the future of pediatric rehabilitation through **innovative technologies, global partnerships, and sustainable solutions.**



Aya Addis Hotel



CONFERENCE
20-21



**ADDIS
ABABA
ETHIOPIA**



On Sunday 10/19/2025







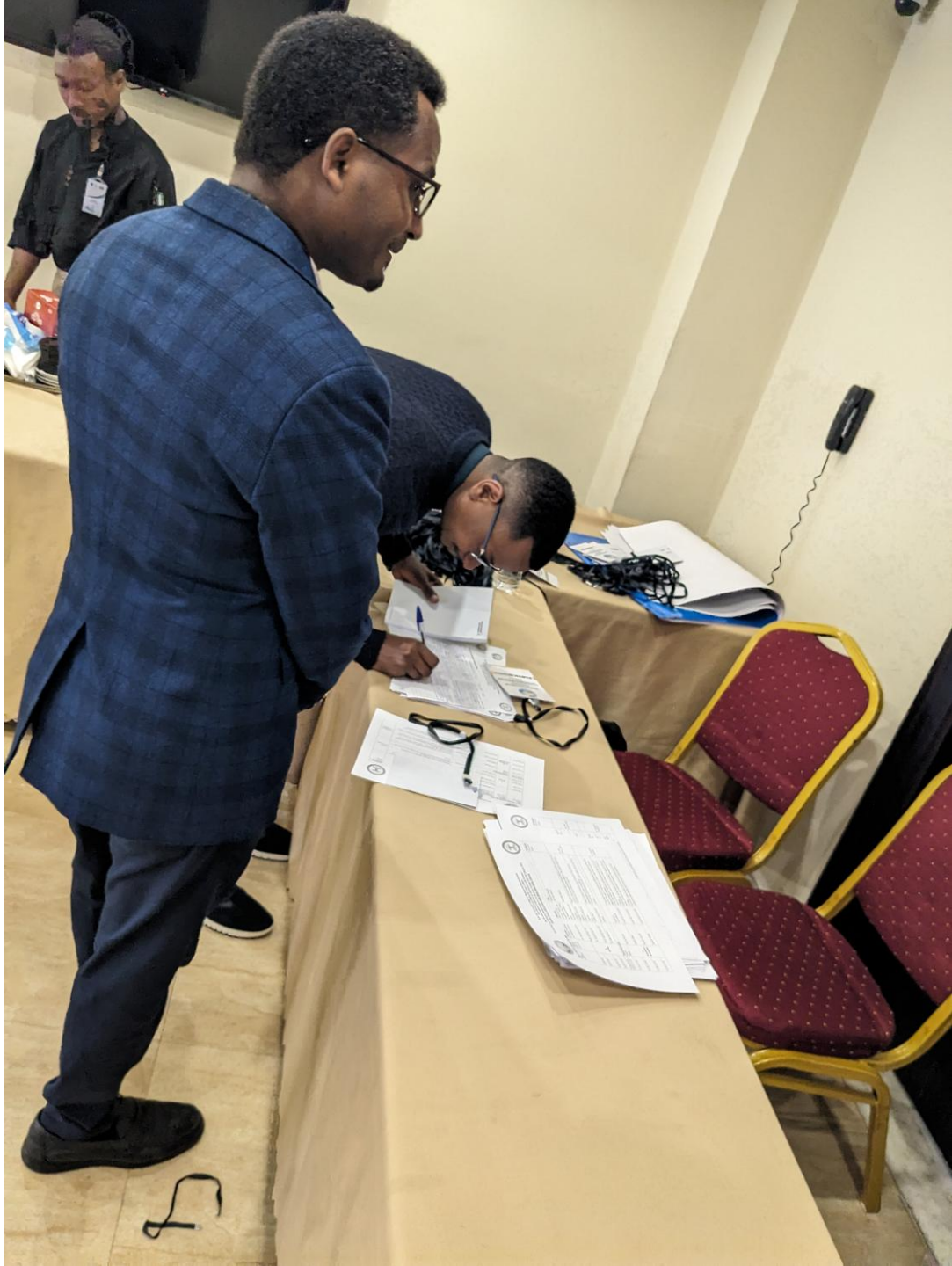
Day 1: On Monday 10/20/2025

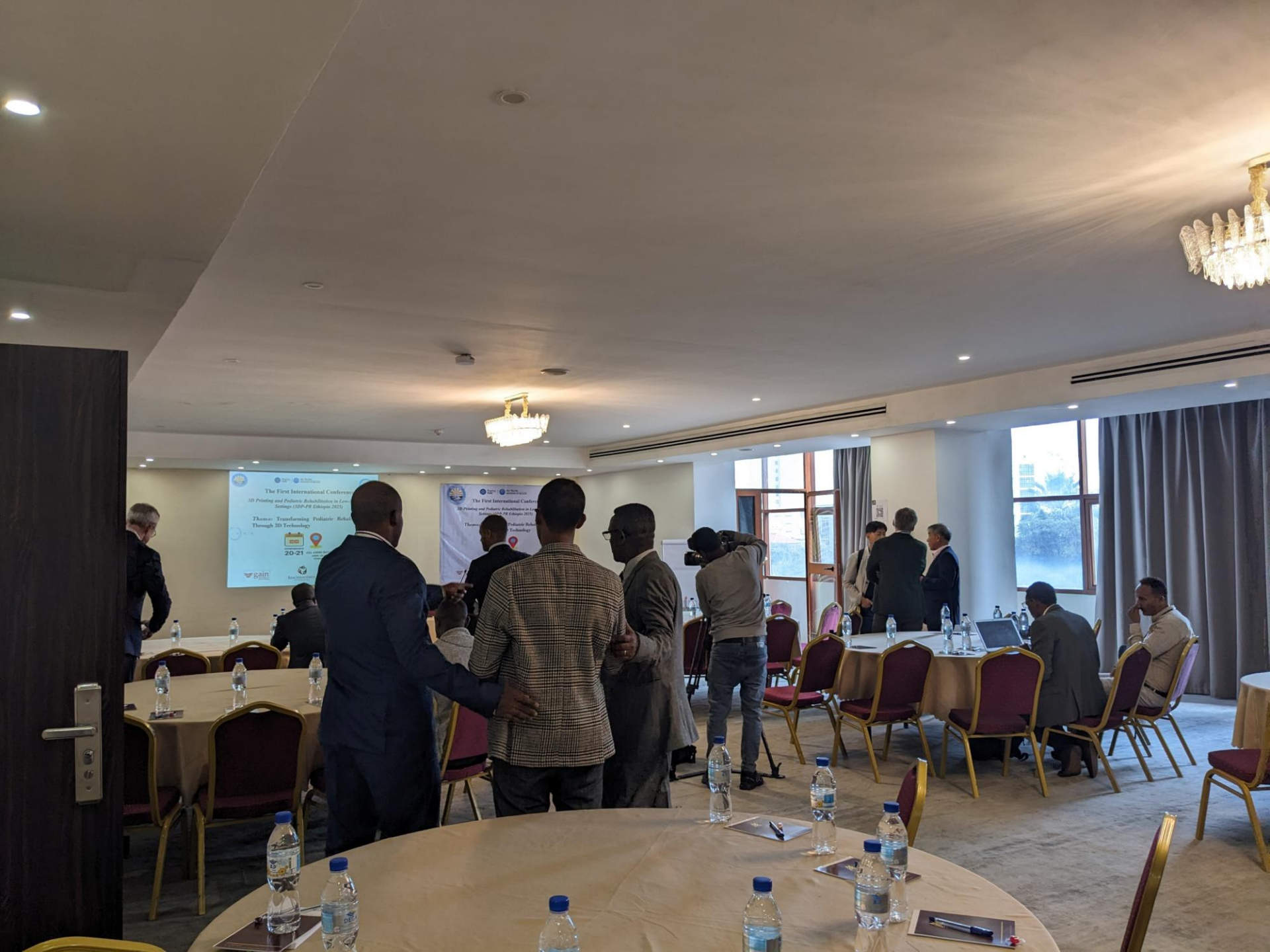












The First International Conference
3D Printing and Pediatric Rehabilitation in Low
Settings (3DPRP) (October 20-21)
Theme: Transforming Pediatric Rehabilitation
Through 3D Technology

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Got started by Prof. Thor (Uppsala University Hospital, Sweden)





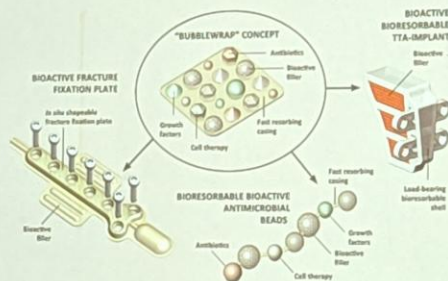
AI Enhances Global Capacity

Daniel A. Donoho, MD Children's National Hospital
Founder, Surgical Data Science Collective



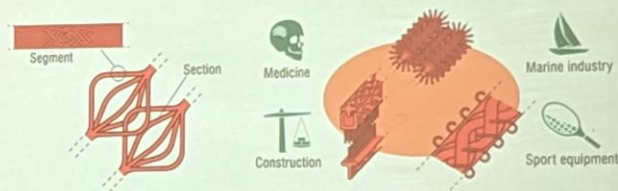
Technology

Scope: "Bubble-wrap Concept"- polymeric platform for tissue reconstruction and regeneration.



- ✓ National patent FI 129657 granted in July 2022
- ✓ European patent EP3370792B1 granted in April 2020.
- ✓ US patent US2018/0318088 granted in July 2022.

Scope: Building material **BIOBUILD** for load bearing and self-support made of fibres for additive manufacturing.



- ✓ National patent FI 129657 granted in July 2022.
- ✓ European patent application EP2071623.2 pending.
- ✓ US patent application US17/626,511 pending.



EXIT →

   
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3D Printing and Pediatric Rehabilitation in Low-Resource
Settings (3DP-PR Ethiopia 2025)
The First International Conference
3D Technology

Methods / Outcome Assessment			
ICF-CY Rehabilitation Flow Chart			
Patient: 13-year-old male, right-handed, with left below-knee and left shoulder amputations secondary to electrical Burn injuries Context: Lives in rural Beles (North Gondar Zone) with a supportive family but limited access to rehabilitation services.			
ICF-CY Domain	Before Treatment (Baseline)	Intervention / Treatment	After Treatment (Outcomes & Progress)
Body Functions & Structures	- Unhealed wounds on left shoulder and stump - Oedema and poor stump shaping - Pain and limited range of motion	- Wound care and dressing - Stump management with elasticated socks - Physiotherapy for pain, strength, and mobility	- Wounds fully healed - Stump well-shaped and ready for prosthesis - Improved strength and range of motion
Activities	- Unable to walk or perform self-care - Fully dependent for mobility and daily living	- Gait and balance training - Fitting of left below-knee prosthesis - Activities of Daily Living (ADL) training	- Independent walking with prosthesis - Performs self-care and hygiene - Returned to school activities
Participation	- Isolated at home - Not attending school - Limited peer interaction	- Counseling and family education - Peer mentoring and community engagement	- Reintegrated into school - Active peer interaction and play - Improved confidence and social participation
Environmental Factors	- Limited local rehabilitation services - No access to upper-limb prosthesis locally - Supportive family	- Family training for home-based care - Referral for future upper-limb prosthesis	- Family actively supporting rehabilitation - Continued schooling despite upper-limb prosthesis gap
Personal Factors	13-year-old, right-handed - Motivated to regain independence	Psychological support and goal-setting	- Independent in self-care and daily tasks - Improved social interaction and peer engagement





The First International Conference

3D Technology in Pediatric Rehabilitation in Low-Resource Settings (3DP-PR Ethiopia 2025)

Theme: Transforming Pediatric Rehabilitation Through 3D Technology

OCTOBER 21
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ALLIANCE
 FOR BIRTH DEFECT



PowerPoint Slide Show - [Presentation of PR-3DP -Last] - PowerPoint

Introduction

Definition of Pediatric Disability: Any form of long-term physical, mental, intellectual, or sensory impairments that may restrict children's full and equal participation in society, especially when combined with environmental and social **barriers** (*Convention on the Rights of Persons with Disabilities (CRPD)*).

- **Burden of disability in children**
- Globally **291.2 million** children (<20) live with disabilities.
- This represents 11.2% of the global population of < 20 Years
- *Olusanya et al., 2020; Li et al., 2023)*

October 20, 2025

Theme: Transforming Pediatric Rehabilitation Through 3D Technology

Slide 3 of 27

Search





  
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Introduction

- What does Family Centred Approach mean ?
How is it related with holistic treatment approach?
- Family-centred service recognizes that each family is unique; that the family is the constant in the child's life; and that they are the experts on the child's

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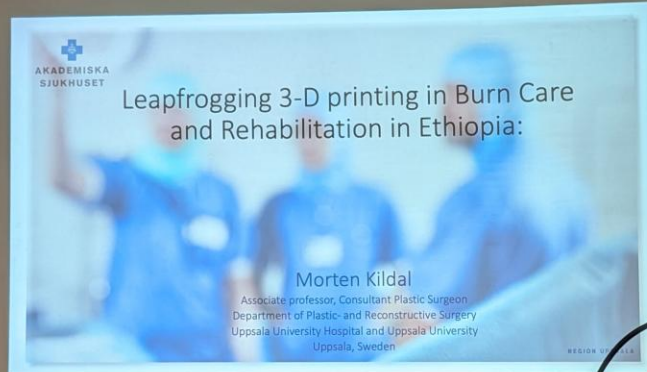
 Challenges of Neurosurgery in Ethiopia 

- Despite huge progress in recent years, it is not without challenges and gaps
- Significant gaps remain in
 - Equitable access
 - Human resources
 - Infrastructure
 - Subspecialty training

  
FDRE MINISTRY OF HEALTH
1st International Conference
3D Pediatric Rehabilitation in Low-Resource Settings (3DP-PR Ethiopia 2025)
3D Pediatric Rehabilitation
3D Technology
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Fundamentals of Burn Care through a Therapist's Lens:

Using an Interdisciplinary Approach for Best
Functional Outcomes after a Burn Injury

Stephanie Schneider, OTR/L, OTD
3D Printing and Pediatric Rehabilitation 2025
Addis Ababa, Ethiopia
October 20, 2025

CHILDREN'S NATIONAL HOSPITAL



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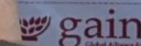
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Practical Points for Clinicians

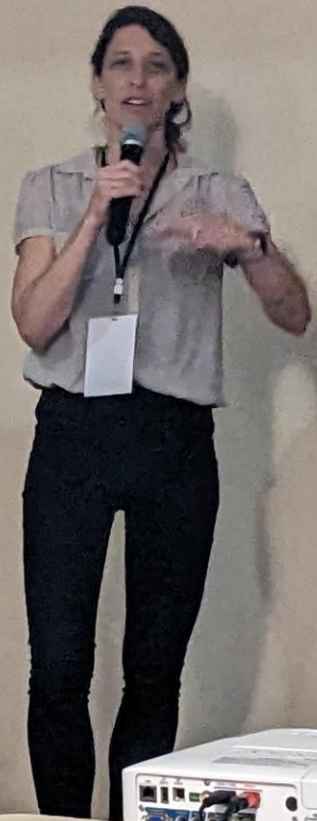
- Assessment and Planning
 - Importance of thorough assessment before intervention
- Surgical Considerations
 - Timing of surgery, choice of techniques based on individual cases
- Long-Term Follow-Up
 - Need for ongoing monitoring and support

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Improving Pediatric Rehabilitation
with 3D Technology

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Panel Discussion





2000 Habesha Cultural Restaurant



























Day 2: on Tuesday 10/21/2025 (Training for Burn Care)

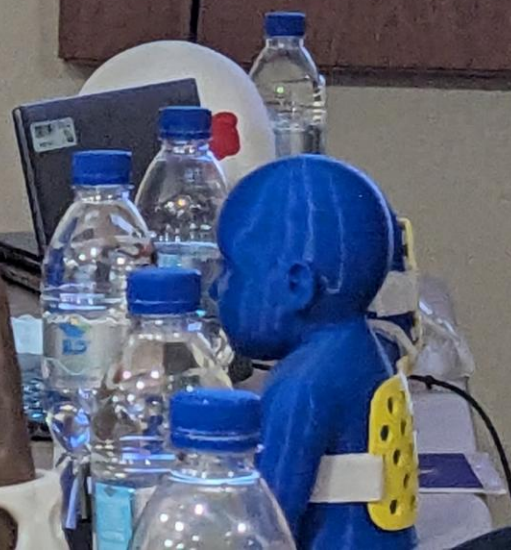








Three Burn Teams working together









Inpatient Therapist Roles

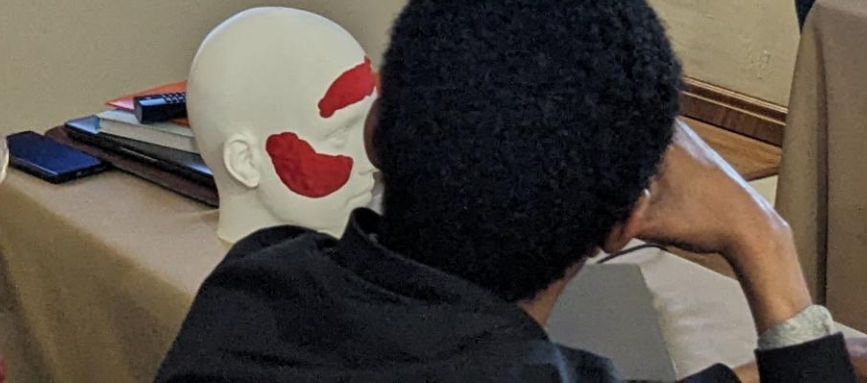
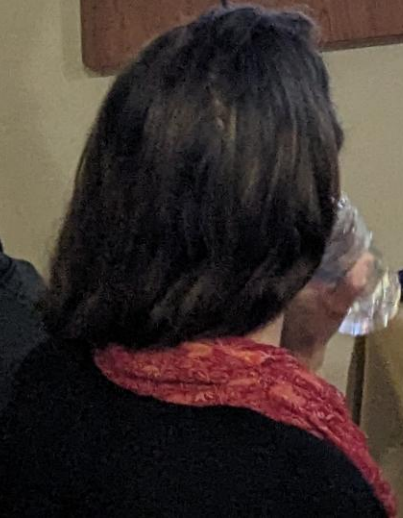
- Edema management
- Maintain range of motion
- Maintain mobility of joint, skin, fascia
- Splinting and positioning
- Maintain function
- Patient, caregiver, and RN education
- Address psychosocial needs
- Discharge planning and community reintegration

Overall goal = Reduce risk for
scarring and contractures



Start thinking about scar management in the first
few days of burn healing!



















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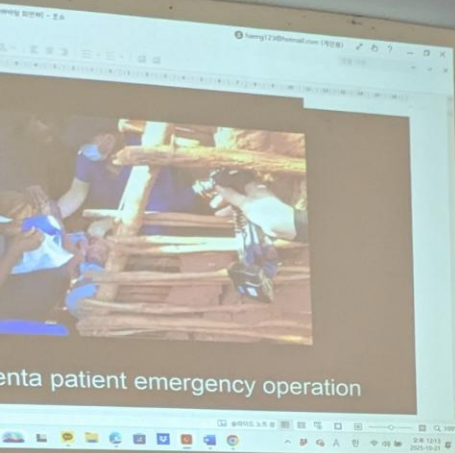




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Building a Curriculum from 15 Years of Frontline Medical Service in Remote Regions

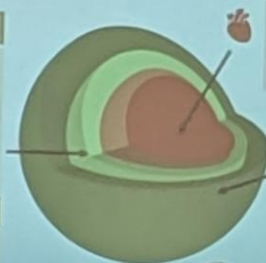
Training Program Tailored to District Hospital Conditions in Madagascar

7 Essential Surgical Skills

- Cesarean section
- Appendectomy
- Laparotomy
- Hernia repair
- Hysterectomy
- Peritonitis surgery
- Central line insertion

2 Management Skills

- Open fracture management
- Trauma

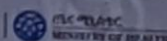


Character Development

- Patient-centered care
- Respect for life
- Spirit of sacrifice
- Creative thinking

Diagnosis and Treatment

- Infectious diseases (e.g., febrile illnesses, STD)
- Chronic diseases (e.g., hypertension, kidney disease)



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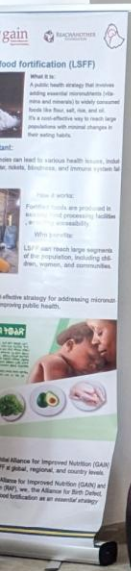
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Conferring Ceremony of Adjunct Professorship







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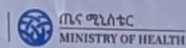
   
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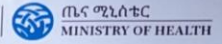
 **REACH ANOTHER**
FOUNDATION



The First International Conference

3D Printing and Pediatric Rehabilitation in Low-Resource Settings (3DP-PKR) Addis Ababa 2025

Theme: Transforming Pediatric Rehabilitation through 3D Printing



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Theme: Transforming Pediatric Rehabilitation through Technology





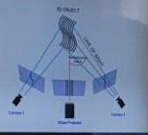






1. Brief Introduction to 3D Scanning

- 3D Scan: Capturing the shape and geometry of real-world objects to create 3D Virtual models.
- It collects data about an object's **surface structure, size, and texture**.
- 3D scans enable to increase quality of life by creating custom **assistive devices** and even **implants**.



Method	Principle
Laser Scanning	Measures distance using laser reflection
Structured Light	Projects light patterns and captures distortion
Photogrammetry	Uses overlapping 2D images
Contact Scanning	Physically touches surface points













Day 3-5: 10/23-25/2025 (Training for Neurosurgery in Zewditu Memorial Hospital)

Daniel Donoho
Children's National Hospital



Performed 7 Procedures



➤ Spina Bifida and Congenital Malformations (4):

- myelomeningocele,
- split cord malformation decompression,
- myelomeningocele tethered cord release,
- tethered cord release

➤ Hydrocephalus (2): ETV, VP Shunt

➤ Brain Tumor (1): Pituitary Adenoma

ETV: Endoscopic Third Ventriculostomy
VP (ventriculoperitoneal) shunt

Kibruyisfaw Zewdie

Head of pediatric neurosurgery unit,
Addis Ababa university
President of society of Ethiopian
neurosurgical society

Day 3: on Wednesday 10/23/2025 (Training in Zewditu Memorial Hospital)





ROOM 3
PEDIATRIC ICU

































Training for Clean Intermittent Catheterization (CIC)













OF EXCELLENCE ou



Visit to H.E. the Ambassador of the Republic of Korea





주 에티오피아 대한민국 대사관
주 아프리카연합 대한민국 대표부
KOREAN EMBASSY TO ETHIOPIA
KOREAN MISSION TO AU



Dinner in the highest building in Addis Ababa

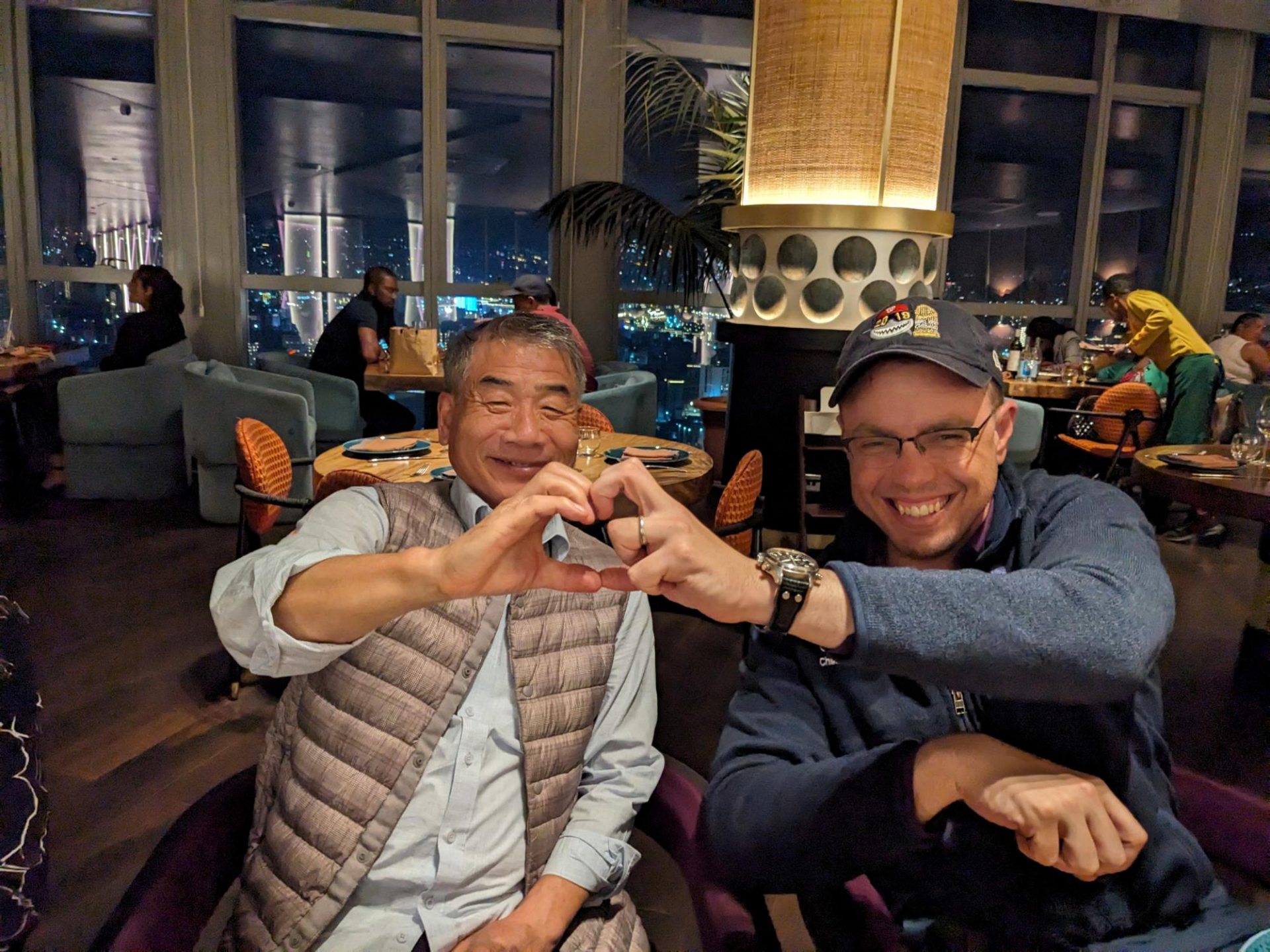




























Day 4: on Thursday 10/24/2025 (Training in St. Peter's Specialized Hospital)



































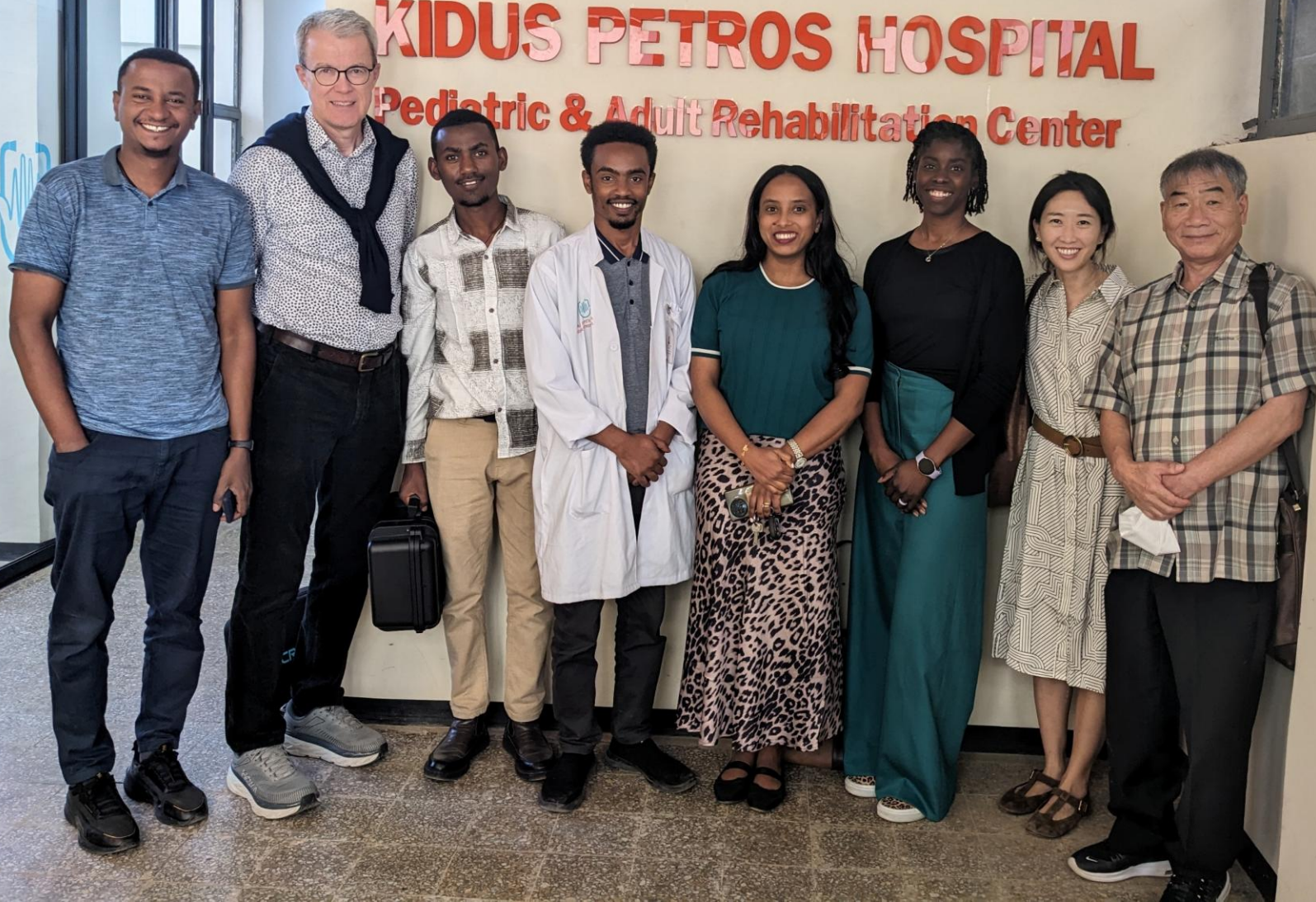






KIDUS PETROS HOSPITAL

Pediatric & Adult Rehabilitation Center





Training in Paulos Mekibib Memorial Specialized Physiotherapy Clinic



















Get-Together for Dinner with German Beer













Farewell for Prof. Thor Returning to Sweden



Day 5: on Friday 10/25/2025 (Training in St. Paul's Millennium Specialized Hospital)





PD

2018

Apr May Jun Jul Aug

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Pediatrics OPD

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OFFICE OF THE DIRECTOR OF PUBLIC
HEALTH AND CHILD HEALTH SERVICES



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Conferring of Certificates — Pediatric Rehabilitation











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Administration Building





Reunion after one year



































INTERNATIONAL DEPARTURES

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PACKING TIPS FOR AIR



CHECK-IN BAGGAGE



See you all at 3DP-PR Ethiopia 2026 in Bahir Dar!

