

# Science Center and STEM at the Ethiopian Academy of Sciences

## IAP Webinar: Building Trust in Science Through Education

**Teketel Yohannes (Prof.)**

**Executive Director**

**Ethiopian Academy of Sciences**

**E-mail: [teketel.yohannes@eas-et.org](mailto:teketel.yohannes@eas-et.org)**

**Mar 11, 2025**

# Ethiopian Academy of Sciences





- Autonomous, Non-Profit
- **Launched in 2010**
- **Recognized by Act of Parliament in 2013  
(Proclamation No. 783/2013)**

General  
Assembly

222  
Regular  
Fellows



88  
Associate  
Fellows



0  
Honorary  
Fellows



310 Fellows

Executive  
Board

EAS  
Secretariat

Working  
Groups

Agriculture

Engineering  
&  
Technology

Fine Arts

Health

Natural  
Science

Social  
Science and  
Humanities

# Institutional; Capacity Building

- ▶ Established centers for the promotion of the knowledge and appreciation of the sciences and arts:

- ▶ Creative Arts Center



- ▶ EAS Library



- ▶ Ethiopian Academy Press



- ▶ Science Center (STEM, Children Center, Science Exhibits)





# Science Center

The Science Center of EAS was established in 2017



## Units of the Science Center

- Interactive Science Museum
- STEM Unit



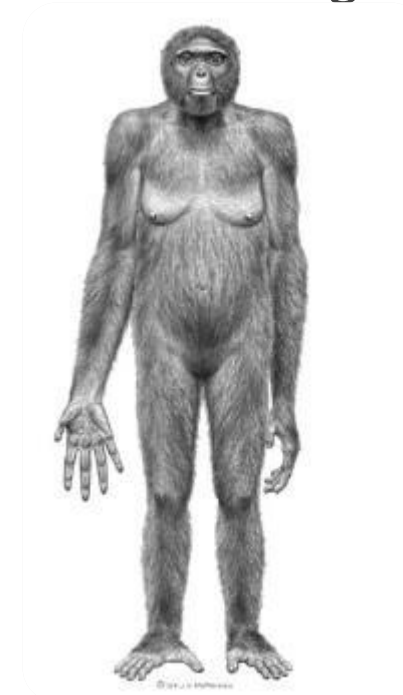
# Interactive Science Museum

The Museum has sections dedicated to the various disciplines of science:

1. Ethiopian Geography, Geology and Paleoanthropology
2. Aquarium
3. Industry and Engineering
4. Natural sciences
5. Children's Science Center

# Ethiopian Geography, Geology and Paleanthropology

- ▶ This unit is used to display evolution of the earth and its inhabitants, with a special emphasis given to showcasing collections from Ethiopia
- ▶ Exhibits include:
  - ▶ Earth process and landforms
  - ▶ 3D map of Ethiopian landforms
  - ▶ Representative rock samples
  - ▶ A representation of human evolution in Ethiopia





# Lucy Cast



# Aquarium

Room where various species of fish of Ethiopia are kept and displayed live in an enclosed and transparent area



# Industry and Engineering

- ▶ **The section will have exhibits that illustrate a wide variety of concepts relating to:**
  - ▶ **Engines,**
  - ▶ **Manufacturing process,**
  - ▶ **Information technology,**
  - ▶ **Aviation industry etc.**



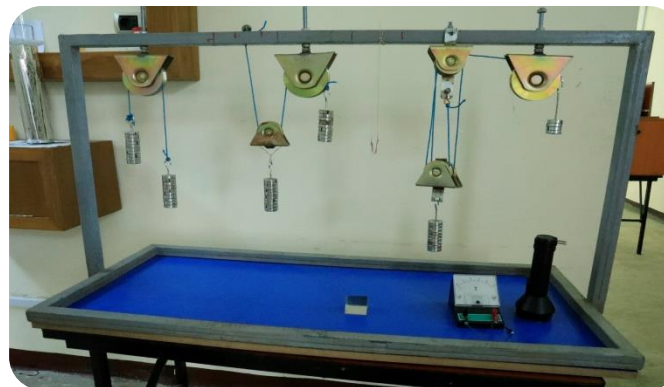


# Natural Sciences

Currently the Natural Science unit has 16 interactive physics exhibits

- ▶ Students learn physics in a simple interactive way
- ▶ Makes students become interested in physical phenomena
- ▶ Lets students directly experience surprising phenomena by providing them practical learning of physical concepts
- ▶ Students become curious to find an explanation for the observed phenomenon

# Physics Exhibits

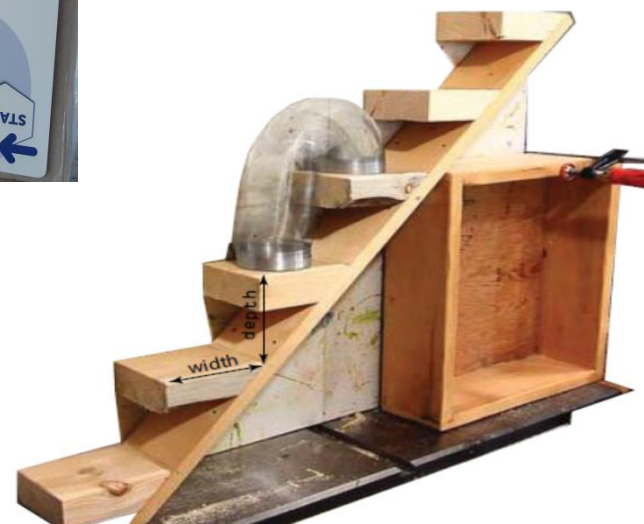




# Children's Science Center

- ▶ **Plays a key role as a catalyst of STEM interest and ideas**
- ▶ **Children can explore STEM concepts through fun, engaging hands-on exhibits and activities**
- ▶ **Provides experiential learning opportunities and problem solving challenges that spark interest in STEM**

# Exhibits at the Children's Science Center



# Partial View of Exhibits at the Children's Science Center





# STEM Center

- ▶ The STEM Center was established under the Science Center in 2019
- ▶ **Mission:** to instill a passion for science in students thereby spurring curiosity, kindling innovation, and driving exploration

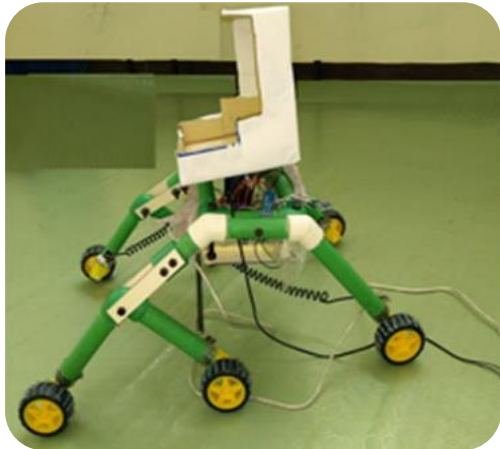


# Activities of the STEM Center

Students designed and showcased practical solutions to technical problems in:

- Engineering
- Robotics
- Environment
- Agriculture

## Stairs Climbing Balanced Wheelchair



## Density Based Traffic Signal System



## Multi-platform Security System



# Way Forward

- ▶ **Tailoring curricula to encourage STEM education**
- ▶ **Co-organizing national STEM education programs**
- ▶ **Developing standards and implementation of national science fairs**
- ▶ **Conducting professional development programs for science and mathematics teachers**
- ▶ **Building the technical capacity of STEM Centers in the regions**
- ▶ **Establish a FabLab**



# Fab Lab (Fabrication Laboratory)

- ▶ Will be equipped with computer controlled tools
  - ▶ Digital design
  - ▶ 3D Printers
  - ▶ Laser cutters
  - ▶ Other advanced technological means
- ▶ Will Provide STEM students with the resources to fully design, prototype, and test products for their projects
- ▶ Entrepreneurs also can turn their ideas into products and prototypes

# Professional development training for science and mathematics teachers

## Objectives of the training

- ▶ Teaching teachers how to deliver STEM education
- ▶ Encouraging a move to inquiry based science education that invites students to explore academic content
- ▶ Building capacity of teachers to take better advantage of ICT in STEM education

# Practical training programs for professionals in selected areas where needs are highest

- ▶ **Potential areas where the beneficiaries of the Center's training could focus on:**
  - ✓ **Operation and maintenance of solar power systems**
  - ✓ **Repair and maintenance of laboratory equipment and scientific instruments etc.**

# Building capacity of STEM Centers

- ▶ **Reproduce interactive science exhibits and distribute to different schools in the regions**
- ▶ **Train staff working in the STEM centers**
- ▶ **Coordinate STEM Center activities**

# Thank You