

Major Contributions of Black People in the Development of the Global Pool of Knowledge in Science, Technology & Engineering

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The Problem

- General low public participation in S&T communication
- Decline in Maths & Science participation
- Decline in school achievement standards
- “Frozen demographics” for R&D
- Arrested R&D output level

The Heart of the Problem

- African contribution to R&D human capital especially low and not improving much
- Blacks seem to face peculiar barriers to entry into science and technology
- Special attention needs to be focused on this segment of our population

Why Specific Focus on Blacks

- SA Statistical reality
- Apartheid legacies still persist
- Need to break the vicious cycle:





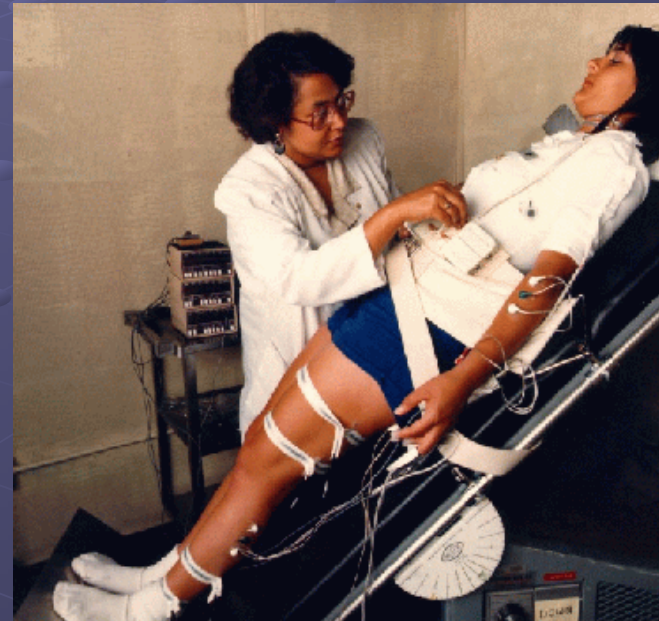
Major contributions by Blacks in Scientific Disciplines

BLACK SCIENTISTS

- Female Scientists
- Great Mathematicians
- Inventors
- Medical Practitioners
- Engineers

Patricia Cowings

- First woman trained as Scientist Astronaut
- Autogenic-Feedback Training Exercise (AFTE)
- Never made it to Space



FEMALE SCIENTISTS

- Patricia Cowings
- Mae Jamison

Mae Jamison

- Physician
- First black female Astronaut in Space
- Member of SPACELAB J in 1992



GREAT MATHEMATICIANS

- David Blackwell
- Adegoke Olubummo

David Blackwell

- Ph.D at age 22
- Prolific Writer
- Hired permanently after 13 years
- *“Theory of Games and Statistical Decisions”*
- 12 Honourary Doctorates



Adegoke Olubummo

- Pioneer of Mordern Mathematics Research in Nigeria
- Started University at age 13
- Initiated the Nigerian Mathematical Society
- Established *Forum for Functional Analysis and its Applications*



INVENTORS

- Garret A. Morgan
- Frederick Jones
- Elijah McCoy

Garret A. Morgan



- Invented first Gas Mask – 1912
- Engineered first functional Traffic light



Frederick Jones

- Prolific Inventor with over 60 patents
- Invented first automatic Refrigeration System for long-haul
- Outstanding authority in refrigeration
- Expertise utilised by USBS and Department of Defence



Mounted underneath the trailer, the Thermo King Model A was the first workable, mechanical transport refrigeration system.

Elijah McCoy

- Born in Canada
- Son of former slaves
- Studied mech. Eng. in Scotland
- Could not find work as engineer in US
- Hired as fireman/oilman on the Michigan Central Railroad
- He invented automated lubrication
- Filed 57 patents
- Applied in naval vessels, steam engines, oil-drilling rigs, mining equipment, in factories and construction sites
- The “Real McCoy”



MEDICINE

Ben Carson



- Paediatric Neurosurgery Director at John Hopkins Hospital
- Separated German conjoined twins in 1987
- Separated **Zambian vertically conjoined twins**
- Refined techniques for Hemispherectomy



ENGINEERS

- David Blanding
- Philip Emeagwali

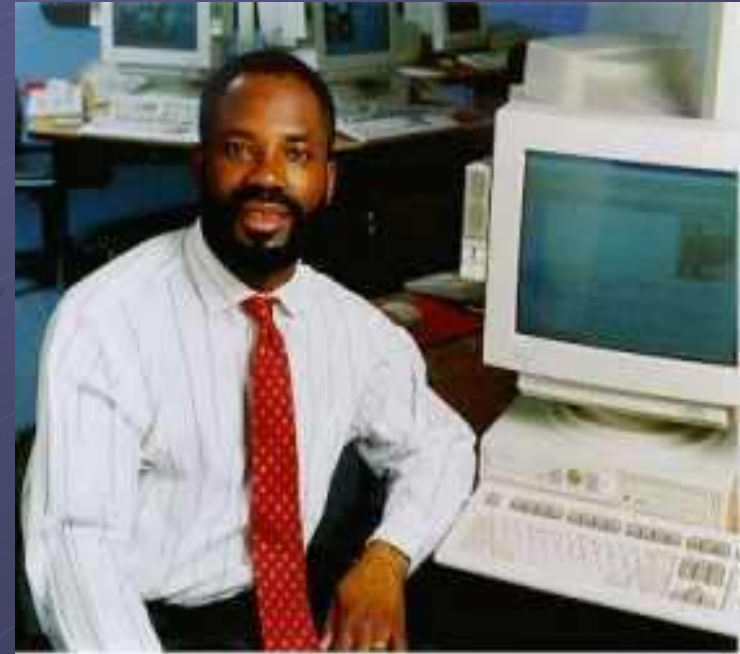
David Blanding

- Boeing Engineer and authority in Electrically powered and Fluid Sub-Systems
- Helped develop Electric Actuators for:
 - v Advanced Unmanned Air Systems
 - v Space Vehicles
 - v Commercial Planes
- Worked on Programmes such as:
 - v Space Shuttle Vehicle
 - v Apache attack Helicopter
 - v National Aerospace Plane



Philip Emeagwali

- “Father of the Internet”
- Devised Theoretical Scheme for Weather Forecast
- Processor Programming





Thank You