

AFRO QUIZ 2014 **SCIENCE AND TECHNOLOGY** **16-18**

THE SCIENCE OF GIRL POWER

The Doctor of Many Firsts



Birth Date: November 4, 1972

The "Firsts" Facts:

- Her **father** was the **first black motor-man** to work for the New York City Subway system.
- In 1973, she became the **first African-American** to complete a residency in ophthalmology.
- In 1975, she became the **first female** faculty member in the Department of Ophthalmology at UCLA's Jules Stein Institute.
- In 1983, she became the **first U.S woman** to serve as the chair of an ophthalmology residency training program.
- In 1988, she became the **first African-American female doctor** to receive a patent for a medical invention

Dr. Patricia Era Bath is an exemplary African-American woman who despite the barriers that might have been put in her way due to her race or sex has achieved greatness throughout her life and career. The daughter of an exemplary man, she is not only a medical doctor, and an inventor, but she is also a pioneer and has been the first to break many grounds.

Born to Rupert and Gladys Bath in Harlem, New York, Patricia was blessed with parents whose example would be the foundation in achieving her dreams.

Her father, the first black man to become a motorman for the New York City Subway system, encouraged in his daughter an interest in the wonders of travel, and the value that could be obtained from exploring different cultures.

Her mother, a domestic worker, used her salary to save up for children's education; instilled an interest in science in her daughter by buying her a chemistry set.

These interests that were piqued by her parents resulted in Dr. Bath being one of a few students selected to attend a cancer research workshop which was sponsored by the National Science Foundation. She was only 16 at this time, but her discoveries and findings during the research project greatly impressed Dr. Robert Bernard, the program head, that he included them in a paper which he presented at a conference. The publicity from these findings led to her receiving the 1960 Merit Award in *Mademoiselle* Magazine.

After having spent only two years in High School, Patricia graduated and went on to receive a Bachelor's degree

from Hunter College in 1964. Four years later, she graduated from Howard University with honours and received her Medical Degree. She then went on to do an internship at Harlem Hospital. In 1967, she pursued a fellowship in ophthalmology at Columbia University.

During her fellowship, she discovered that African-Americans were twice as likely to go blind as any of her other patients; and they were also eight times more likely to suffer from glaucoma. These discoveries spurred Dr. Bath to develop a community ophthalmology system. This system increased the amount of eye care given to those who were not able to afford it.

Once she completed her ophthalmology residency in 1973, she moved to California the next year and started work as an assistant professor of surgery at two universities: the University of California and Charles R. Drew University.

The table below shows Dr. Bath’s timeline leading up to her great achievement of the invention of the *Laserphaco probe*. The probe used laser technology to create a more precise and less painful way to treat cataracts. With this invention, she helped restore the sight of people who had been blind for over 30 years.

EVENT	YEAR
<i>Becomes the first female faculty member</i>	1975
<i>Co-founded the American Institute for the Prevention of Blindness. This Institute established “eyesight as a basic right”</i>	1976
<i>She starts work on the Laserphaco probe</i>	1981
<i>Helped create the Ophthalmology Residency training program at UCLA- Drew and also became the first woman to chair said program.</i>	1983
<i>The Laserphaco probe was completed</i>	1986
<i>She receives a patent for the probe.</i>	1988
<i>She retires from her position at the UCLA medical centre and becomes an honorary member of the medical staff.</i>	1993
<i>In the same year, she was named a “Howard University Pioneer in Academic Medicine”.</i>	

The Jack of Many Trades

In 2007, Ricky Neckles graduated with a Bachelor of Applied Science in Mechanical Engineering;



but a mechanical engineer is not the only occupation that he can list on his resume. He is also a public speaker, a community servant, and an entrepreneur who not only started his own investment company, but went on to co-found a company which supplied and distributed on-site paging services.

Ricky's inspiration comes from his mother Yvonne, who immigrated to Canada when Ricky was very young from the country of his birth, Grenada.

*"I then pause and contemplate the fact that I was supposed to be "at risk." I agree that I was at risk, just like everyone else from my community, **at risk of being extraordinary.**"* – Ricky Neckles

Ricky the Entrepreneur

Ricky's business acumen and leadership qualities put him on the top of the recruitment lists of companies across Canada. One such company was Accenture, a global management consulting, technology services and outsourcing company. Ricky would become one of Accenture's youngest recruits and the youngest to be appointed to the position of Management Consultant Analyst. In this position, he was consulting with companies such as Sears, Loblaw's, and various other multi-billion dollar corporations.

Despite his success at Accenture, Ricky decided to pursue his entrepreneurial passion after only one year with the company. In 2008, Ricky Founded Neckles Global Enterprise Inc. (NGE), a privately held investment company which owns a collection of diversified businesses operating in sectors that include real estate, trade and manufacturing. With the success of NGE, and using it as an umbrella, Ricky co-founded TNTech Canada Inc. It is a Canadian company which is a leader in the supply and distribution of on-site paging services. Effectively guided by Ricky, TNTech has helped maximize the efficiency and communication for its clientele that includes: Jack Astor's, The Keg Steakhouse, Baton Rouge and Shoppers Drug Mart.

Ricky the Community Servant

Ricky is just as passionate about promoting academic excellence and doing his part to serve the community as he is about his entrepreneurial side. Both are given great dedication.

Having been raised in the Mount Dennis area of Toronto, a community that has been called "at risk" by local government, Mr. Neckles has first-hand insight into the challenges that youth growing up in such communities can face. This gives Ricky unique insight into these challenges and gives him the motivation to serve his community.

He served as the president of the National Society of Black Engineers (NSBE) the University of Toronto Chapter. While he was president, membership tripled, and financial support for the organization grew exponentially by over 500%. Ricky's most notable accomplishment is the launch of the Youth Legacy Program, an initiative aimed at developing the academic and leadership skills of students in elementary and secondary schools, as well as to stimulate

interest in science, technology, engineering and mathematics. Ricky's vision has always been to ambitiously raise the standard of excellence for our future leaders.

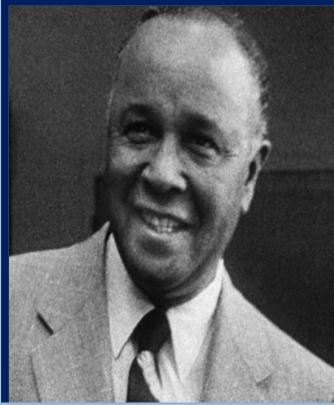
Please follow this URL to a TV interview where Ricky talks about the mandate and goals of the NSBE and elaborates on the Youth Legacy Program. <http://vimeo.com/22879677#t=27>.

Website: www.rickyneckles.com

INVENTORS

A Millionaire Scientist

Percy Lavon Julian was born on April 11, 1899 in Montgomery, Alabama. Percy was only able to attend school until eighth grade, and was not able to get a high school education because there were no high schools in his hometown that would admit black students. In spite of this hardship, Julian enrolled himself and was accepted to De Pauw University in Greencastle, Indiana. While attending University, he had to take high school night courses in order to be on the same level playing field as his peers and catch up. Even with all this, he graduated first in his class, with Phi Beta Kappa honours.



Birth Date: April 11, 1899

Death Date: April 19, 1975
from lung cancer.

Upon completion of his college degree, he was offered a teaching position at Fisk University and then left in 1923 to attend Harvard University and obtain his Masters on a scholarship.

However, Harvard did not allow

Percy to continue with his education and pursue a doctorate degree. So he travelled for the next few years teaching at Black Colleges. Then in 1931, he got his PhD from the University of Vienna in Austria.

Once he had returned from Vienna, with his Doctorate, he went back to his *alma mater*, De Pauw and continued his research. Shortly after, in 1935, he earned international acclaim for synthesizing physostigmine from the **calabar bean** to create a drug treatment for glaucoma. However in spite of this success, the university refused to make him a full professor because of his race.

Facing this constant rejection, Julian decided to leave the world of academia and tried to apply for jobs at chemistry companies. However, here too, he met resistance and rejection due to the colour of his skin, but he did not stop.

Eventually, he got a job as a lab director at a Glidden company, and here, he invented Aero-Foam, a product that uses soy protein to put out oil and gas fires and was widely used in World War II, as well as other soybean-based inventions.

He continued in this line of biomedical research and discovered how to extract sterols from soybean oil and synthesize the hormones progesterone and testosterone. He was also given acclaim for his synthesis of cortisone, which became used in the treatment of rheumatoid arthritis.



The Calabar Bean

It is the seed of the leguminous plant shown above. The plant is from the genus *Physostigma*, with the species name *P. venenosum*.

It is a tropical plant which is native to tropical African countries.

After leaving Glidden in 1953, Julian established his own laboratory, Julian Laboratories, in 1954. He sold the company in 1961; and following in the footsteps of Madame C.J Walker, became one of the first black millionaires. As a result of this, he then founded Julian Research Institute, a non-profit organization that he ran for the rest of his life.

Julian was the first black chemist elected to the National Academy of the Sciences, in 1973. In 1990 he was elected to the National Inventors Hall of Fame, and in 1999 his synthesis of physostigmine was recognized by the American Chemical Society as “one of the top 25 achievements in the history of American chemistry.”

Please watch this short video homage to Percy L. Julian

http://www.youtube.com/watch?v=Fhgxq1vjBqY&feature=player_detailpage#t=66

THE SCIENCE OF ECONOMICS

The Entrepreneur Nurse

A native of Barbados, retired Registered Nurse **Gloria Baylis** immigrated to Canada in 1952. She is seen today not only as an award winning business woman and entrepreneur, but as a pioneer and spokesperson for employment right of Black Canadians. When the colour of her skin was being used to put her in a difficult economic situation, Gloria's tenacity helped her find a way to meet this impediment head on.

In 1964, Gloria first attracted public attention when she took the Queen Elizabeth Hotel in Montreal to court for discrimination. In this year, she applied for a nursing position at the hotel which at the time, was operated by the Hilton chain. Once she had applied, she was told that all the nursing positions had been filled; but this was not the case. Despite her undeniable qualifications, she was refused employment because she was Black.

Outraged by the blatant injustice that she had just experienced, Gloria sought assistance and support from the Negro Citizenship Association and filed a complaint with the Minimum Wage Commission. This brought on a high profile court case against the Queen Elizabeth Hotel. The case alleged employment discrimination on the basis of race.

"In October 1965, in the first case of its kind, Hilton of Canada was convicted of "illegally and knowingly refusing employment to Mrs. Gloria Clarke Baylis, committing thereby an offence provided by the Discrimination Act of 1964." This Act was the first piece of legislation in Canada that defined discrimination and made explicit reference to exclusion or preference on the basis of race."

Although it might seem like a small price to pay for their discrimination, the Hilton Canada group was fined \$25 and had to pay the costs of the court case, i.e. all lawyer fees and other costs that might have been incurred. The fine amount was the minimum at the time, with the maximum being \$100. The conviction of the Hilton Canada group stood for a moral victory for all Black people in Canada. It is a testament to Mrs. Baylis' tenacity and willingness to stand up for her right to make a living regardless of the circumstance she has been placed in. For the



*In recognition of her entrepreneurial accomplishments, Gloria was awarded the **1999 Jackie Robinson award for the Business Person of the Year.***

Gloria Baylis retired from active participation in the business in 2004. She remains a member of the Board of Directors.

She left Barbados at the age of 16 and went to England to be trained as a nurse. In 1952 she then moved to Canada where she continued her training and became a Registered Nurse.

next eleven years, the Hotel appealed the decision so as to attempt to re-establish their credibility, but to no avail. In 1977, the original conviction was upheld by the Court of Appeal.

Following the case, Gloria and her husband moved their family to Toronto and there, she continued with her nursing career. In 1983, this inspiring woman founded the Baylis Medical Company (BMC). She ran the company from a home office and it imported and distributed a range of medical products with a focus on devices for neurosurgery. Over time, with ample hard work, this small distribution company became a leading developer and manufacturer of high-technology medical products in cardiology and pain management reaching international clients. She incorporated the company as a Canadian Corporation in 1986.



FRANK BAYLIS
President of BMC

Gloria's hardworking and determined and caring heritage was passed on to her children and this is most evident in her first born daughter Dr. Françoise Baylis. Dr. Baylis is Dalhousie University's Canada Research Chair in Bioethics and Philosophy. She is internationally known for her work which explores fundamental philosophical questions of justice as they apply to healthcare and health research. More specifically, her work probes ethical issues in women's reproductive health, stem cell science, research involving humans, public health, and novel technologies.



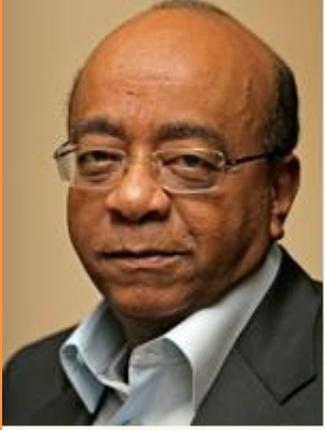
DR. FRANÇOISE BAYLIS

Gloria's son, Frank Baylis, an electrical engineer, became the first employee of Baylis Medical Company and is currently the President of the company and has been instrumental in its expansion into the world. Please visit the company website learn more about the history of this economically successful endeavor which started out of Gloria's home and is now making in excess of \$15M annually. Company website:

<http://www.baylismedical.com/ca/corporate-information/history/>.

MEDIA AND TECHNOLOGY

From Technology to Philanthropy



Mohamed was born in Sudan, Africa in 1946, but has British citizenship.

AWARDS

- ❖ *Honourary Doctrate by the University of London's School of Oriental and African Studies*
- ❖ *Honourary Fellowship Award from the London Business School*
- ❖ *Chairman's Award for Lifetime Achievement from the GSM Association in 2007*
- ❖ *Also in 2007, he received the Economists Innovation Award for Social & Economic Innovation.*

Dr. Mohamed "Mo" Ibrahim is the founder of Celtel International. He is a global expert in mobile communications technology and holds a BSc in Electrical Engineering from the University of Alexandria in Egypt. He has a Master's degree in Electronics and Electrical Engineering from the University of Bradford and a PhD in Mobile Communications from the University of Birmingham. His impressive education led him to many business ventures within this technological industry.

In 1989, Dr. Ibrahim founded Mobile Systems International (MSI), a technology consultancy and software company. This was after he was responsible for the launch of UK's first cellular service in his position as Technical Director with British Telecom's subsidiary company Cellnet. In 2000, he sold MSI for \$900million.

He founded Celtel in 1998 as a way of building and operating mobile networks in Africa. It became one of Africa's most successful companies, now operating in 23 countries. In 2005, he sold the company for \$3.4billion.

In 2004, Dr. Ibrahim established the **Mo Ibrahim Foundation**. This is an African initiative to recognize achievement in African leadership and stimulate debate on good governance across sub-Saharan Africa and the world. The foundation is the birth place of the African Leadership Award which is the largest prize in the world. The award entails the receipt of \$5million over the span of 10 years to a retired African leader who has left his/her country materially better off.

The foundation also publishes the Ibrahim Index of African Governance which ranks the performance of the nations. Using a number of different indicators, the countries are statistically ranked.

Please follow this link to learn more about the award, its criteria and those leaders who have been recipients:

<http://www.moibrahimfoundation.org/ibrahim-prize/>.

The website will also give you more information on the Ibrahim index.

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