



# THE UNIVERSITY OF THE WEST INDIES

MONA, JAMAICA, WEST INDIES

## DEAN'S OFFICE

### FACULTY OF SCIENCE AND TECHNOLOGY

Dean's Office, Mona Campus, Kingston 7, Jamaica

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## OPEN CALL: The Jamaica Interactive "Fi Wi Science" Mural

### - Popularising Jamaica's Science Heritage & Culture

The University of the West Indies (UWI), Faculty of Science and Technology (FST), Mona has launched the Fi Wi Science Initiative to popularize Jamaica's science heritage and culture through the arts and technology inclusive a "Heritage Trail of Scientists": a series of murals (and artwork) throughout the Faculty.

There will be a three-step participation process:-

1. **APPLY BY Monday, 24<sup>th</sup> February: Open Call Application** – if you are interested and want to get more information to make a final decision, please use the following link to complete the application form for the: Open Call for Fi Wi Science Mural - <https://forms.office.com/r/N9hu3uD8DN>
2. **ATTEND A LIVE INFO SESSION:** Viewing of Spaces and Presentation on Science & Scientists – individuals and groups who fill the Open Call Application form will be invited (Proposed Dates: Saturday 8<sup>th</sup> March at 9:30am OR Thursday 13<sup>th</sup> March – 3:30pm)
3. **SUBMIT YOUR PROPOSAL:** by 14<sup>th</sup> April, 2025 (we will provide a link for submissions when you apply for the Open Call).

### Background

The literary, performing, and culinary arts dominate the mind when one thinks of Jamaican culture. Many don't know that Jamaica has a rich, science heritage. Although STEM (Science, Technology, Engineering and Mathematics) is integral to Jamaica's development, the Jamaican STEM student (or potential student) must search to find evidence of a Jamaican science culture with which they can identify, and which can inspire them. There is no public site or entity consistently capturing Jamaica's science heritage and culture including scientists, institutions, breakthroughs and innovation. There is no national monument dedicated to Jamaica's science culture and heritage ... How will our youth be motivated and inspired to study the STEM subjects and help solve our nation and region's problems, if they have no role models ?

To promote and popularise Jamaica's science heritage, The UWI-FST, Mona (which has produced many Caribbean scientists) has embarked on the:

**Fi Wi Science Initiative** aimed at **Popularising Jamaica's Science Heritage & Culture** through:-

- The FiWi Science Portal
- The Jamaica Interactive "FiWi Science" Mural
- 75 Years of Jamaican Science – The UWI Book

**Of note for this Open Call for Proposals are:-**

1. **Fi Wi Science Portal:** aims to revolutionize the science landscape by becoming the premier online portal for making Jamaican science visible and accessible and for linking students, science enthusiasts, scientists, industry, and government. It will include a searchable data-base for Jamaican scientists and a showcase of Jamaican Science and Science Icons in addition to relevant events and articles. Eventually it should be self-

sufficient with a commercial component in the form of a market-place for scientists and science and technology companies. The website will have the information on the scientist(s). **The Portal was launched on 30<sup>th</sup> January, 2025** ( <http://74.207.233.103/> OR <http://fiwiscience.org.jm> ) - the domain name was just registered and we are in the process of attaching the name to the existing website.

- 2. The Fi Wi Science Mural :** There are iconic monuments around Jamaica celebrating Jamaica's literary, artistic, musical and sports heritage e.g. the Bob Marley statue at the National Arena; Miss Lou statue in Gordon Town, Water Lane murals, athlete's statues at the National Stadium and political leaders at National Heroes' Park. There are no similar iconic artistic monuments celebrating the legacy of science accomplishment in Jamaica, notwithstanding that Jamaica has a rich scientific heritage.

The Faculty of Science and Technology (FST) is an excellent location for a series of murals and artwork – the Ring Road is well traversed by many people from all walks of life in addition to visitors on guided tours. The corridors and spine of the FST are awash with over 3,000 tertiary level students annually. In addition, the Faculty hosts hundreds of secondary and primary level students and teachers annually during our CSEC and CAPE training, science competitions and Science Festival. In addition to depicting the legacy of science achievements, all the murals and artwork will have QR codes embedded to enable viewers to interact with the piece and learn more about Jamaica's scientific heritage, including by linking to the FiWi Science portal.

Through the mural component and other activities, we will be adding the "A" for Arts to STEM so we can STEAM through the challenges of promoting and popularizing Science, Technology, Engineering and Mathematics.

#### **Criteria for the *Fi Wi Science Murals***

The following criteria should be observed for all categories.

- The mural presented should depict:-
  - scientists (in a way that ensures one can distinguish who they are but using popular formats that will appeal particularly to our youth) and
  - the science, innovation or themes they are associated with.
- The following must be incorporated:-
  - Quick Response (QR) Code to link to the Fi Wi Science Portal so viewers can access information on the scientists

Use of other science and technology e.g. augmented reality (AR) methods that allows users to have an enhanced interaction with the mural is welcome.

- The following components may be incorporated the Artist's Multi-Media Category:-
  - the Incorporation somehow, of the nature - already within the space or that could be added
  - use of recycled materials/components
- Options to involve FST students in the production of the mural are encouraged.
- **See Appendix 1** for photographs of the spaces (and attend the Info Session tentatively scheduled for Thursday, 13<sup>th</sup> March, 2025 for more information and to get a feel for the spaces).
- **See Appendix 2** for a list of key scientists to be considered for inclusion and **website link** for photographs and information of the scientists and their work. You are free to conduct your own research and present other scientists but at least some of the scientists listed should be included in your design.

## Submission

The final date for submission of the mural designs will be on **14<sup>th</sup> April, 2025, having first submitted your application on 24<sup>th</sup> February, 2025**. Mural designs should be presented as a power-point presentation (no more than 8 slides) including at least, the following:-

1. Entry Category (see Appendix 1 below) and Name, Email Address, Phone # and Year (for students)
2. Mural Design – indicating which wall or the size of the wall (should correspond to Appendix 1 below)
3. Description e.g. any AR or other components and any thoughts/concept
4. For Professional Muralists/Artists:-
  - 4.1 An estimated budget for design and production inclusive materials needed
  - 4.2 Work experience and list of murals with locations

As indicated above, an email will be provided for the submission of Proposal Presentations by artists who apply for the Open Call. A live/online presentation of the proposals may be required for the final selection.

**Please see Appendix 1 and Appendix 2 below for more details.**

## Selection

The final selection will be made by a panel of judges and you will be notified of your selection by email. We will then be in touch with you to make arrangements for the production of the mural.

If you are interested, please ensure you register so we can invite you to the Live Info Session later this month:-



Best regards,

**Dr. Susan Otuokon, Ph.D.**

Strategic Development Officer

Dean's Office – Faculty of Science and Technology

**The University of the West Indies,**




Mona Campus, Jamaica, W.I.

T: 876-927-1660-9 (Ext 8429)

Email: susan.otuokon@uwi.edu

**Appendix 1**

**1. CATEGORY: Professional Muralists – you may enter proposals for one or all locations**

#	Location	Size
IFLT1	Inter-Faculty Lecture Theatre (IFLT) – facing Ring Road 	18.5' x 14.5'
IFLT2	Inter-Faculty Lecture Theatre (IFLT) – facing entrance road to Physics Dept 	16' x 15'
CHEM1	Chemistry Dept entrance wall 12' x 10' 	12' x 10'

The following categories will also be open to tertiary level students and other artists and selections will be awarded prizes with arrangements made later for production.

CATEGORY	LOCATION	SIZE	PRIZES
<b>Student (Tertiary level)</b>	TBD (SLT & Other Spaces)	8 feet x 8 feet	1 <sup>st</sup> : \$100,000 2 <sup>nd</sup> : \$75,000 3 <sup>rd</sup> : \$50,000
<b>Artist's Multi-Media</b> incorporating nature, recycled materials and/or other components	Location of Choice (suggest a location)	No more than 10 feet x 10 feet	\$200,000

**Note:** The UWI – FST, Mona will own the designs/artwork which are awarded prizes. Production of the murals will be paid for separately.

**Appendix 2 – Key Scientists to be depicted (this is not a definitive list – other persons will be highlighted at the Information Session)**

Name (& timeline if deceased)	Brief information – see the Fi Wi Science website for photographs and more details.
Francis Williams (c. 1690 – c. 1770)	Francis Williams was a Jamaican polymath, scholar, astronomer and poet who was one of the most notable free black people in Jamaica. Born in Kingston, Jamaica into a slaveholding family, Williams subsequently travelled to England where he officially became a British subject. After returning to Jamaica, he established a free school for free people of colour in Jamaica. His portrait is considered to be the earliest known example in the canon of western art to have been commissioned by a known Black person to record their own intellectual achievements... from: Wikipedia
Dr. Thomas (TP) Lecky (1904 – 1994)	Dr. Thomas Phillip Lecky, OM, OBE affectionately known as “TP” is one of Jamaica’s earliest science icons and considered the Father of the Jamaican Dairy Industry. ... he was born in Portland and attended Swift River Primary. He later attended the Government Farm School (Jamaica School of Agriculture) before going abroad to study in Canada. He eventually received his Ph.D. in Genetics from the University of Edinburgh, Scotland. ... Dr. TP Lecky was responsible for the development of three breeds of cattle suited to our tropical climate: the Jamaica Hope, Jamaica Red and Jamaica Black. The Jamaica Hope was the first breed of cattle indigenous to Jamaica and is a dairy breed whilst the other two breeds are for beef production.
Dr. Manley West (1929 – 2012)	Professor Manley West, OM was a pharmacologist who developed several useful medicines from ganja (Cannabis). Born in Portland, Professor West was a graduate of the Titchfield High School after which he travelled to England to further his secondary level and later tertiary studies. At the University of London, he studied pharmacology eventually earning his Ph.D in this field before continuing his studies and work at a variety of institutions globally. In 1964 he returned to Jamaica as an Assistant Lecturer in Pharmacology in the Faculty of Medical Sciences. ... he collaborated with ophthalmologist, Dr. Alfred Lockhart to develop the drug Canasol® in 1987 and later Cantimol® in eye-drops for the treatment of glaucoma. In the 1990s, Professor West also developed Asmasol®- which treats bronchial asthma, coughs and colds and Canavert®- a drug that stabilizes the part of the brain that controls motion sickness.
Dr. Kenneth Magnus - deceased 2021	<p>Professor Emeritus Kenneth "Ken" Magnus was an applied chemist who made significant contributions to the study of chemistry and STEM subjects. Graduating with a B.Sc. first class honours in 1952, he was one of the first graduates of the then University College of the West Indies. His research was varied from sugar-cane to bauxite processing to the isolation of an antibiotic - Monamycin (together with the first head of the Chemistry Dept. Professor Cedric Hasall, from New Zealand) which was patented in Canada, Germany and the UK. Major work on Monamycin led to development of the drug cilazapril - still widely used to treat hypertension.</p> <p>Between 1969 and 1970, he helped develop the science curriculum for Jamaica's primary and secondary schools contributing to the early development of STEM education in Jamaica. As Head of the Chemistry Department and later the Faculty,</p>

	<p>he was instrumental in promoting the use of technology and the evolution of the Faculty of Pure and Applied Sciences from the Faculty of Natural Sciences, now Faculty of Science and Technology. Not surprisingly, the Chemistry Department's website (<a href="http://wwwchem.uwimona.edu.jm">http://wwwchem.uwimona.edu.jm</a>) became in 1994, the first website in the Caribbean.</p>
<p>Dr. Bertram Fraser-Reid (1934 - 2020)</p>	<p>Dr. Bertram Fraser-Reid was a synthetic organic chemist whose research on sugars improved our understanding of how the immune system fights diseases.</p> <p>He was born in Coleyville, Manchester and enjoyed reading when not attending Bryce Elementary School where his father was principal. He attended Excelsior High School where his love for music and playing the piano and organ were developed. It was at Clarendon College where he also taught science for a few years, that his love for chemistry started ... he migrated to Canada to study at the Queen's University where he obtained his B.Sc. and M.Sc. degrees in chemistry. He received his Ph.D. from the University of Alberta in 1964 following which he did post-doctoral studies at Imperial College London. Dr. Fraser-Reid was on the faculty of the University of Waterloo from 1966 to 1980 ... His work in sugar chemistry has been used in the control of insects that are harmful to agriculture. His discovery that he could copy pheromones, which could be utilized by the forestry service to prevent wood-eating insects from ruining trees, has helped to safeguard forests in Canada and Latin America. ... Dr. Fraser-Reid has received numerous awards from institutions all over the world including the Gold Musgrave Medal from the Institute of Jamaica. He was an accomplished jazz and classical pianist and organist and gave recitals around the world, of note at St. George's Anglican Church in Kingston, Jamaica in 1986.</p>
<p>Joy Spence</p>	<p>Joy Spence is a chemist who specialises in the blending of the perfect Jamaican rums at Appleton Estate, where she is the Master Blender and serves as the Brand Ambassador and Manager of Technical and Quality Services. She was born in Manchester and raised in Kingston where at age 13, she discovered her passion for chemistry. She completed her B.Sc. in Chemistry at The University of the West Indies and earned her M.Sc. in Analytical Chemistry at the University of Loughborough in the United Kingdom. On her return to Jamaica, she worked as a research and development chemist at Tia Maria and was then hired by J. Wray and Nephew Ltd. In 1981, the rum distillery Appleton Estate, which was owned by Wray and Nephew, hired Spence as its chief chemist. ... In 2005, Mrs. Spence was awarded the Order of Distinction, Officer Class by the Government of Jamaica for her service to the rum industry. Spence was instrumental in achieving geographical indication for Jamaican rum, which was awarded in 2016, which is a tool to help protect Jamaica's intellectual property in rum-making. ... In 2018, she was awarded the National Medal for Science and Technology and in 2022, the Musgrave Gold Medal by the Institute of Jamaica. Tours of the Appleton Estate distillery are named The Joy Spence Appleton Estate Rum Experience in honour of her amazing chemistry skills and expertise in rum blending.</p>
<p>Dr. Gerald Lalor - deceased 2021</p>	<p>A Jamaican Science Icon, Professor Emeritus, the Honourable Gerald Lalor was a pioneering geo-chemist, best known for the establishment of the International Centre for Environmental and Nuclear Science. ... Soon after completing his studies at the Mona Campus, he began working with the world's leading producer of logwood dyes at the time (West Indies Chemical Works). While with the company, he did his Masters research on haemotoxilin and hematein (substances extracted from the logwood for the dyes). Later, when the logwood tree became</p>

	<p>endangered, he found a new method to produce synthetic haemotoxilin. In 1960 he returned to The UWI as an Assistant Lecturer and did inorganic chemistry research for this Ph.D. thesis. After further post-graduate studies in the UK and USA, he returned to The UWI as Professor of Chemistry in 1969 and was Head of the Chemistry Department from 1969 to 1972 – the first West Indian to serve in this position. ... he is best known for the establishment of the Centre for Nuclear Sciences in 1984 with the first and only Nuclear Research Reactor (SLOWPOKE-2) in the English-speaking Caribbean. ... A pioneering geochemist, Lalor led a research team from ICENS in the preparation of a geochemical map of the elements in Jamaican soils. The map identifies some of the major and micro elements in Jamaican soils and uncovered elements previously not known to be present. It assists with the identification of contaminated land and provides important information for government planning agencies. Of note was his team’s discovery of lead in the soil in the St Andrew community of Kintyre the source of which was isolated and lead poisoning in children treated and prevented. ....</p>
<p><b>Dr. Arnaldo Ventura</b></p>	<p>A Jamaican Science Icon, Dr Arnaldo Ventura is a retired virologist and renowned Jamaican scientist who guided numerous national and regional science and technology policies and plans. He continues to share his knowledge and experience through consultancies and writing e.g. ‘Memories and Musings: Reflections of a Scientist’ a book of poems published in 2021.</p> <p>Dr. Ventura studied at the University of the West Indies, Mona for both his undergraduate and M.Sc. degrees. During his early career, Dr. Ventura (who studied the spread of viral diseases in humans, through a variety of pests e.g. mosquitoes) came across situations of poverty which touched him deeply. This sparked a desire to use science as a tool to solve social and economic problems. His Ph.D. was awarded by Cornell University, New York and ....</p> <p>He was the Science and Technology Adviser to four Jamaican Prime Ministers from 1989 to 2009, a founder of the National Commission on Science and Technology and the instigator and drafter of many of Jamaica’s science policies and strategic plans....</p>
<p><b>Professor Marcia Roye</b></p>	<p>A Jamaican Science Icon, Dr Arnaldo Ventura is a retired virologist and renowned Jamaican scientist who guided numerous national and regional science and technology policies and plans. He continues to share his knowledge and experience through consultancies and writing e.g. ‘Memories and Musings: Reflections of a Scientist’ a book of poems published in 2021. Dr. Ventura studied at the University of the West Indies, Mona for both his undergraduate and M.Sc. degrees. During his early career, Dr. Ventura (who studied the spread of viral diseases in humans, through a variety of pests e.g. mosquitoes) came across situations of poverty which touched him deeply. This sparked a desire to use science as a tool to solve social and economic problems. His Ph.D. was awarded by Cornell University, New York and he worked abroad for several years before returning to Jamaica. He was the Science and Technology Adviser to four Jamaican Prime Ministers from 1989 to 2009, a founder of the National Commission on Science and Technology and the instigator and drafter of many of Jamaica’s science policies and strategic plans. His work as a virologist and science and technology specialist has gained him national accolades including, the Commander of the Order of Distinction (Jamaica) and the Silver Musgrave Medal for science from the Institute of Jamaica.</p>

<p><b>Professor Dale Webber</b></p>	<p>Professor Dale Webber is the Director of the Centre for Marine Sciences, UWI, Mona. In January, 2025 he was appointed Jamaica’s first special envoy for climate change, the environment and matters of the ocean and the blue economy. He has had an extensive career as a lecturer, researcher and consultant in coastal ecology, in particular studying coastal wetlands including mangroves to design plans for improved coastal zone management, particularly bearing in mind, the reality of climate change. Between 2018 and 2023 he served The UWI as Principal and between 2015 and 2018 as Pro-Vice Chancellor for Graduate Studies. Professor Webber was awarded the Silver Musgrave Medal by the Institute of Jamaica in 2000. He is also the Chairman of the Environmental Foundation of Jamaica.</p>
<p><b>Professor Paula Tennant</b></p>	<p>Professor Paula Tennant is a biotechnologist with a focus on the viral diseases of fruit and vegetable crops. After earning first-class honours in botany from the University of the West Indies (UWI), her brilliance caught the attention of Cornell University, where she joined ground-breaking research to combat the Papaya Ring-Spot Virus (PRSV). Professor Tennant is credited with the creation of the Solo Sunrise, a genetically modified strain of papaya which is resistant to the Ring Spot disease - she accomplished this during her Ph.D. research studies at Cornell University, which she completed in 1996. Her discovery helped save the local papaya industry which was under threat from the invasive disease. Dr. Tennant was the first person from the Caribbean to ever develop a bio-engineered product. She lectures several undergraduate courses and supervises post-graduate students in biotechnology, working with both the Department of Life Sciences and the Caribbean Centre for Research in BioScience....</p>
<p><b>Dr. Karen Nelson</b></p>	<p>Dr. Karen Nelson is a Jamaican-born American microbiologist who specializes in human microbiome research - that is, the study of the genetic material in the micro-organisms found in different parts of the human body e.g. skin and intestines with a focus on how these microbes impact human health. She was born in Kingston and went to St. Hugh's High School after which she completed her B.Sc. in zoology at the UWI. Dr. Nelson planned to become a veterinarian, but once she took human and animal nutrition classes in college, she became fascinated by microbiology ... This led her to complete her Ph.D. in Microbiology at Cornell University and she is now an expert in microbial ecology, physiology and genomics. ... Dr. Nelson and her team were responsible for the publication of the first human metagenomics study, that is a study of the structure and function of entire nucleotide sequences isolated and analyzed from all the organisms in a bulk sample from a human. She has been listed as one of the Top 25 Women Leaders in Biotechnology for 2022 by the Healthcare Technology Report.</p>
<p><b>Dr. A. Anthony Chen</b></p>	<p>Professor Anthony Chen's career started at Boston College where he earned a BSc in Physics and Mathematics. He went on to further his education at Harvard where he earned a MA in teaching and after teaching high school, he studied physics and astronomy at the University of Maryland, College Park, where he earned an M.Sc. and soon returned to Jamaica to The UWI. He continued work in astronomy and study of the upper atmosphere for his Ph.D. work but also started investigating wind and solar energy feasibility in Jamaica during the 1970's before it was considered the norm. In carrying out stochastic simulations and forecasting weather patterns he became interested in the study of climate. In 1994 he formed the Climate Studies Group, Mona (CSGM) along with now Professors - Michael Taylor and Tannecia Stephenson.</p>



	In 2007, Dr. Chen was jointly awarded the Nobel Peace Prize (along with the other members of the Intergovernmental Panel on Climate Change (IPCC) and United States Vice President, Al Gore) for valiant efforts made to increase and greater knowledge of man-made climate change and to set the critical groundwork for the action required to address and counteract these changes.
Professor Daniel Coore	Prof. Daniel Coore is a Professor of Computer Science in the Department of Computing, Faculty of Science and Technology, UWI, Mona. Born and raised in Kingston, Jamaica, he attended Campion College before completing one year at The UWI after which he transferred to the Massachusetts Institute of Technology (MIT) where he obtained in 1994, both the S.B. in Computer Science and Engineering and the S.M. in Electrical Engineering and Computer Science. In 1999 he earned his Ph.D. in Computer Science, also from MIT. He is a co-inventor of the UWI Cardiac Surgery Simulator: a high-fidelity simulator that has had significant impact across the US in the training of cardiac surgeons. His primary research interests include robotics and automation and computer science education....
Dr. Tyrone Grandison	Dr. Tyrone Grandison is a computer scientist, entrepreneur and philanthropist employed by Microsoft, for the past 3 years, as a Chief Technology Officer. He attended Duhaney Park Primary School and Jamaica College and obtained his B.Sc. in Computer Sciences & Economics in 1997 and his M.Sc. in Software Engineering in 1998 from UWI, Mona. He earned his Ph.D. in Computer Science from the Imperial College of Science, Technology & Medicine, University of London in 2003. Dr. Grandison has over 25 years experience in software engineering, security and privacy and has been internationally recognized for his achievements. Dr. Grandison is the founder and director or advisor of several organisations aimed at providing IT support to a variety of not-for profit or small business entities. health He is an adjunct professor at UTECH and set up a scholarship for computer science at the UWI, Mona. Dr. Grandison has co-invented over 47 patents and written numerous books and papers.
Daisy McFarlane Coke	Daisy McFarlane Coke is the Caribbean's first female actuary and the first Caribbean member of the Royal Institute of Actuaries. She was born in Clarendon to a farmer and home-maker and attended Spalding Primary and later Happy Grove High School in Portland. Doing well at high school, particularly in mathematics, she was moved to Kingston to attend St. Hugh's High School for Sixth Form. Ms. McFarlane returned to Happy Grove High as a teacher and applied for a scholarship to study at The UWI. She earned her B.Sc. in pure and applied mathematics (and Latin) and taught in the Department of Mathematics before moving on to the University of Toronto where she earned her M.Sc. in applied mathematics. On returning from Canada, Ms. McFarlane worked at the Ministry of Finance where she gained a government scholarship to study for a post-graduate certificate in statistics at Oxford University. Whilst there she was inducted into the Institute of Actuaries, becoming the first Caribbean person to become a member. She started her actuarial career on secondment to the UK Government's Actuary's Department in London and later returned to Jamaica to work as an actuary for the Government of Jamaica before starting her own consultancy. She served on several national public and private and international boards and became the founding president of the Caribbean Association of Actuaries. Mrs. McFarlane Coke was conferred with the Order of Jamaica in 2002 and in 2018, the Max Lander Award - a lifetime achievement award from the International Association of Consulting Actuaries.