

The Road to National Science Week 2017

Pre-launch Programme

“Advancing Science Tourism”

WELCOME MESSAGE

The Nelson Mandela University is the proud host of the Department of Science and Technology's (DST) 2017 National Science Week (NSW) that is being convened at our campuses as from 1st June – 5th August 2017.



National Science Week, under the theme, *“Advancing Science Tourism”* aims to promote public awareness of and engagement with science, technology and innovation. The primary goal of this initiative, is to promote science and technology literacy, as well as their pivotal role in addressing issues affecting people on their day to day life.

The NSW 2017 programme focusses on 12 Core Themes, namely: Touring the Human Body; Discoveries at the Frontier of Science; Diversity & Inclusion in Science; Science Education, Outreach & Communication; Ocean Science; Indigenous Knowledge Systems & History of Science; Earth Stewardship; Art & Science; from Basic Science to Technology & Its Application; and Exhibitions and Science Show.

Nelson Mandela University therefore wishes to extend a warm welcome to the Minister of Science and Technology and local government leaders; international speakers; exhibitors; officials and participants that will be visiting our campuses during this important period.

Prof Azwinndini Muronga

EXECUTIVE DEAN: FACULTY OF SCIENCE

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THEME 1: TOURING THE HUMAN BODY	
<i>Activity 1: Fun Run/Walk: Touring the Human Body</i>	
Date	29 July 2017
Time	8am
Presenter(s)	DST, SAASTA & Nelson Mandela University
Participants	Public, Athletes, Students (incl. Health Sciences), Academics, & Professionals
Venue	Missionvale Campus & Surrounds
Event Code	FUN00

A fun run/walk on Saturday 29 July 2017. The fun run/walk under the theme “Touring the human body” will culminate in an interactive talk between people and human physiologists, health professionals and students.

The physiological and chemical changes during the fun run/walk would be among focal issues of the interactive engagement. Stop points along the run with physiological tests and health information and questions relating to science more generally.

There is going to be a Zanempilo Mobile health clinic.

THEME 2: DISCOVERIES AT THE FRONTIERS OF SCIENCE	
<i>Activity 1: Seminar and Virtual Tour: SA-CERN Programme & Virtual Tour to CERN</i>	
Date	1 August 2017
Time	1-4pm
Presenter(s)	Dr Claire Lee (CERN) & Prof Jean Cleymans (UCT)
Participants	Grade11 learners, Educators, Students & Academics
Venue	North Campus Goldfields Auditorium
Event Code	SVT01

The Large Hadron Collider (LHC) is the world's largest particle accelerator. Its 27 km ring is buried 100 meters below the French and Geneva countryside. The LHC was designed to explore the biggest mysteries of our Universe: The Faculty of Science is planning a one hour Virtual Visit which is primarily an opportunity to learn about particle physics.

One (or more) virtual guides will introduce themselves and their role, and then briefly explain what CERN, LHC and the ATLAS experiment is; followed by a description of their location. The most important part of the visit is when participants interact with the virtual guide, a physicist from South Africa, thanks to a tool called Vidyó.

The Virtual Tour will follow just after the seminar on SA-CERN Program by Emeritus Professor Jean Claymans who is the head of the SA-CERN program.

THEME: DISCOVERIES AT THE FRONTIERS OF SCIENCE	
<i>Activity 2: Public Lecture : Touring the Universe – A Journey Through Space, Time, and Beyond</i>	
Date	4 August 2017
Time	2-3pm
Presenter(s)	Prof Azwinndini Muronga (Nelson Mandela University)
Participants	School learners, Students, Educators, Academics & Public
Venue	Missionvale Campus block 508 0006 (A5)
Event Code	JST02

Faculty of Science is planning a public lecture on “Touring the Universe” – a hitchhiker’s guide to the Universe. The lecture will take you on a wonder-filled journey through the past, present and the future of the Universe. The lecture will explore some of the most profound and amazing ideas of our times – Quantum Mechanics, General Relativity, Parallel Relativity and Multiple Universes.

The lecture will be presented from the cutting edge of today’s technology, including the latest research on gravitational waves. The lecture is the perfect primer for anyone curious about our extraordinary Universe. The lecture is well suited for the general public with little or no prior knowledge of science.

The participants will walk away with a deeper understanding of how modern physics has brought us closer to an ultimate understanding of reality. You are about to start a journey through the universe as it is understood by science today. Destination: the Universe, immediate departure.

THEME: DISCOVERIES AT THE FRONTIERS OF SCIENCE	
<i>Activity 3:Public Lecture: Understanding the Universe: From Quarks to the Cosmos</i>	
Date	28 July 2017
Time	5pm
Presenter(s)	Prof Azwinndini Muronga (Nelson Mandela University)
Participants	Students, Academics,Grade11 learners & Public
Venue	North Campus Conference centre
Event Code	FQC03

Humanity's curiosity about nature has driven us to explore the unknown, discover new worlds at the two extremes of the universe – the very large and the very small, push the frontiers of our scientific and technical limits, and has provided benefits to our society for centuries. We are at a special moment in our journey to understand the universe and the physical laws that govern it by connecting quarks with the cosmos.

The lecture will focus on the opportunities for breakthrough discoveries in understanding the fundamental nature of energy, matter, space, and time, and to apply that knowledge to understand the birth, evolution and fate of the universe.

THEME: DISCOVERIES AT THE FRONTIERS OF SCIENCE	
<i>Activity 4: Seminar: Black Holes and Some Recent Work of Stephen Hawking</i>	
Date	19 July 2017
Time	1 – 1:40pm
Presenter(s)	Dr Martin Weigt (Nelson Mandela University)
Participants	Students, School learners and Public
Venue	South Campus (05- 0 -0003)
Event Code	MAT12

Black holes are stellar objects from which nothing can escape, not even light, and are a mathematical consequence of Einstein’s general theory of relativity.

The theoretical physicist Stephen Hawking is well known for his work on black holes, and in this talk, we review Hawking’s work on this topic.

We also look at some of his most recent work on black holes, which is perhaps not that well known.

THEME 3: DIVERSITY AND INCLUSION IN SCIENCE	
<i>Activity 1: Symposium: Diversity and Inclusion in Sciences</i>	
Date	31 July 2017
Time	1-7pm
Presenter(s)	Faculty of Science: Diversity, Equity & Inclusion Task Team
Participants	Academics, Students, Policy Makers & University Management
Venue	South Campus Science Auditorium
Event Code	DIS04

Greater diversity in science's workforce and ideas is long overdue. The symposium will explore connections between diversity and the rigor of teaching and learning, research and innovation including how marginalization affects study design and discusses persistent, misguided assumptions.

There is growing evidence that embracing diversity (in all its senses) is key to doing good science. But there is still work to be done to ensure inclusivity as the default, not the exception.

The Diversity & Inclusion in Sciences Symposium will be a collaborative symposium for the Students, researchers, academics and diversity and inclusion advocates to discuss diversity and inclusion in the sciences.

The symposium will focus specifically on the latest trends, challenges, opportunities and best practices of implementing strategies and tactics to make the sciences more diverse and inclusive, as well as understand how to better serve different student groups. Attendees will learn the newest insights and ideas, discuss practical solutions.

THEME 4: SCIENCE EDUCATION, OUTREACH, COMMUNICATION	
<i>Activity 1: Workshop: Science Communication</i>	
Date	2 – 3 August 2017
Time	8am – 5pm
Presenter(s)	Jo-Ann (Nelson Mandela University) & Zamuxolo (SAASTA)
Participants	Academic Scientists, Students & Media
Venue	Missionvale Campus block 509 0006 (B5)
Event Code	SCM05

2 August 2017: Academics, Scientists & Students Workshop

3 August 2017: Media, Journalists & Journalism Students Workshop

The communication science workshops, within the Science Education, Outreach and Communication program of the Faculty of Science are specifically designed to address the needs of scientists to communicate scientific or technical information in a variety of public and professional interactions, such as media interviews, writing grant proposals, discussing ideas with students, or participating in public forums.

Workshop goals include building scientist's communication skills and confidence in engaging with public audiences and providing best practices for use of different communication methods and mechanisms.

THEME: SCIENCE EDUCATION, OUTREACH, COMMUNICATION	
<i>Activity 2: Workshop: Educators Development Workshop in Eastern Cape</i>	
Date	29 July 2017
Time	8am – 5pm
Presenter(s)	Mr Thembinkosi Dyeyi (WSU) Mr Beginner Mapuranga (WSU) Miss Vuyo Matiwane (Rhodes University) & Prof David Wolfe (University of Mexico)
Participants	Eastern Cape Educators
Venue	Missionvale FP Lecture hall
Event Code	EDW06

STEM has become a major buzzword in the NSW, and this year we are planning to have dedicated workshops for STEM educators. A major complaint from teachers has been the lack of quality training and curriculum.

To support the STEM educators, the Science Education, Outreach & Communication programme within the Faculty of Science at Nelson Mandela University will be organizing workshops across the Eastern Cape.

The workshop on the 29 July 2017 will be facilitated by the South African Institute of Physics and will be aimed at Physical Sciences educators. This workshop includes teacher training, effective STEM leadership, collaborating with Science Education, Out-reach and Communication program at Nelson Mandela University and the South African Institute of Physics.

This workshop includes the latest research and practices of STEM education in the classroom.

THEME: SCIENCE EDUCATION, OUTREACH, COMMUNICATION	
<i>Activity 3: Workshop: Physical Science Teacher Skills Enhancement</i>	
Date	24 – 28 July 2017
Time	8am – 5pm daily
Presenter(s)	Prof David Wolfe (University of Mexico), Dr Eric Maluta (University of Venda), Mr Netsianda Makonde (University of Limpopo), Mr Nemakhavhani, Thendo (UJ), Mr Ali Letsoal (University of Limpopo)
Participants	Vhembe District Physical Science Educators
Venue	Vhembe District, Limpopo
Event Code	PSE27

Vhembe District performance in Physical Science has declined from 81% in 2013 to 74.3% in the last three years. The decline is occurring while teachers' commitment is increasing.

The SAIP has discussed the improvement of science educators' skills through the SAIP Physics Teacher Development Initiative, with the Vhembe Physical Science Division.

Key topics will include Electricity and Magnetism; (Electrodynamics), 2D / 3D Wave-fronts, Optical Phenomena and Electrochemical Reactions, Mechanics, Work Energy and Power.

Sessions will be led by Physics Education Experts and include research-based STEM education practices, and training physics pedagogy.

THEME 5: OCEAN SCIENCE	
<i>Activity 1: Public Lecture: Advancing Marine Science Tourism</i>	
Date	1 August 2017
Time	1 – 2pm
Presenter(s)	Dr Lorien Pichegru (Nelson Mandela University)
Participants	Nelson Mandela University Staff & Students, Public & Stakeholders
Venue	South Campus, Council Chamber
Event Code	CMR07

The Coastal and Marine Research (CMR) is planning a public lecture during the week before NSW (31 July – 4 August) as part of the *Road to NSW 2017*. This will be an interactive public lecture by one of the CMR’s leading academics, and will cover the topic of Advancing Marine Science Tourism.

The lecture will be aimed at a more “mature” audience (Nelson Mandela University staff and students, the public and stakeholders), but school groups will be welcome to attend.

The aim of this public lecture will be to discuss the importance of science in advancing tourism, and explaining how communicating science on different platforms can assist in drawing tourism while maintaining healthy ecosystems.

The lecture will be roughly 60 minutes long, followed by a questions/discussion session of about 30 minutes. This session will give those in attendance the opportunity to ask questions, engage and find out how they can become involved in marketing science tourism, with the emphasis on conservation awareness.

THEME: OCEAN SCIENCE	
<i>Activity 2: Presentation: How to Work With Stranded Marine Animals</i>	
Date	20 July 2017
Time	3-4pm
Presenter(s)	Tracey Meintjes (Nelson Mandela University)
Participants	Public, Students & Learners
Venue	George Campus
Event Code	SMA24

- Introduction to how to deal with live strandings of marine animals. What deems a stranding and proper protocols
- General anatomy of the animals that are generally dealt with on stranding
- Personal and public safety when working with the animals
- The do's and don'ts of working with marine animals.

THEME 6: INDIGENOUS KNOWLEDGE SYSTEMS & HISTORY OF SCIENCE

Activity 1: Presentation: Indigenous Games and Presentations On Scientific Landmarks of Africa

Date	29 July 2017
Time	9am- 3:30pm
Presenter(s)	Sci-SA Members (Nelson Mandela University)
Participants	Learners, Students, Academics & Public
Venue	STEM LAB
Event Code	GPL08

This is an activity involving taking learners on a trip around the scientific landmarks of Africa in the comfort of Nelson Mandela University. We will host 100 Grade 8 learners from surrounding high schools.

We will be teaching them about the scientific landmarks of Africa through various stations presentations. Learners will be taught the science behind their favorite indigenous games such as uPuca, taught basic scientific survival tips for their households to make their homes safer and better scientifically.

Furthermore, this will ignite the love for science in learners prior to their FET phase. Learners will arrive on the day and be registered, welcomed, taken to the different stations and then given lunch before being sent home.

THEME: INDIGENOUS KNOWLEDGE SYSTEMS & HISTORY OF SCIENCE	
<i>Activity 2: Seminar: Case Studies for a Decolonized Forestry Curriculum</i>	
Date	27 June 2017
Time	2-5pm
Presenter(s)	Prof Quinton Johnson, Dr Keith Little (Nelson Mandela University) Prof Coert Geldenhuys (Stellenbosh University) Mr Jan-Willem de Jager (Eden District Municipality)
Participants	Post graduate students, Academic staff, Public (members of the southern Cape branch of the South African Forestry Institute)
Venue	George Campus, Lecture Theatre
Event Code	DFC22

Four case studies will be presented:

1. Alternative knowledge systems with specific reference to the use of indigenous medicinal plants (Prof Quinton Johnson)
2. Protect or utilize Miombo Woodlands in Southern Africa to sustain biodiversity and productivity. What are the criteria (Prof Coert Geldenhuys)
3. Eucalypt coppice management for rurally based small scale timber growers in South Africa (Dr Keith Little)
4. The business of eco-labelling: who benefits and who pays the bill? A case study of the Kenyan coffee industry.

THEME: INDIGENOUS KNOWLEDGE SYSTEMS & HISTORY OF SCIENCE	
<i>Activity 3: Lecture Series: Albert Einstein: Physicist, Scientist, Humanitarian Touring the Mind of a Genius</i>	
Date	31 July-12 August 2017
Time	12-2pm
Presenter(s)	Prof Azwinndini Muronga (Nelson Mandela University)
Participants	Grade 9, 10 & 11 Maths & Science Learners, Educators, Students & Academics
Venue	South Campus Science Auditorium
Event Code	APH30

In May 1905, an unknown 26-year-old Swiss patent clerk wrote to a friend about four scientific papers he had been working on in his spare time. He casually alluded to one as "revolutionary," and he confidently asserted that another would modify the "theory of space and time."

He had not yet started on a fifth paper that would also come out in 1905 and that would propose a surprising and earth-shaking equation, $E=mc^2$.

This industrious young office worker was Albert Einstein, and with these papers he irrevocably changed the face of physics.

The lecture series will explore Einstein the whole man, putting Einstein's scientific discoveries into the context of his personal life, his philosophical views, and his outlook on the world.

THEME 7: EARTH STEWARDSHIP	
<i>Activity 1: Seminar: Investigation and Illustration of Geomorphological Processes Associated with the Inter-tidal Zone and Directly Beyond at Cape Recife</i>	
Date	1- 3 August 2017
Time	10am-1pm
Presenter(s)	Mr Gideon Brunsdon & Dr Anton de Wit (Nelson Mandela University)
Participants	Students, School learners & Public
Venue	South Campus Room 0380
Event Code	GSS13

Investigation and illustration of geomorphological processes associated with the inter-tidal zone and directly beyond at Cape Recife.

Target group will become familiar with the role that science and relevant technology plays to understand, describe and predict the impact of human activity on coastal geomorphological processes in order to facilitate sustainability.

THEME: EARTH STEWARDSHIP	
<i>Activity 2: Public Lecture: “Amanajeu”</i>	
Date	1 June 2017
Time	10am
Presenter(s)	Dr Bruno Bonte (SRV)
Participants	Public, Students & Educators
Venue	George Campus
Event Code	AMJ11

“Amanajeu”: a serious game to analyse together multi-scale and multi-sectorial adaptation to global change in coastal areas. (MAGIC programme). An experience in Southern France.

The targeted audience is the general public, students and educators, they will become familiar with the consequences of global warming in coastal areas.

The guest speaker will be Dr Bruno Bonte he is a water management specialist and research associate at Irstea-G-EAU and the sustainability research unit Nelson Mandela University.

THEME: EARTH STEWARDSHIP	
<i>Activity 2: Public Lecture: Earth Stewardship Science - Quests to Mimic Nature with Everyone a Stakeholder</i>	
Date	28 July 2017
Time	3pm
Presenter(s)	Prof Maarten de Wit (AEON, Nelson Mandela University)
Participants	Learners, Students, Academics & Public
Venue	Missionvale Campus
Event Code	ESQ32

Earth Stewardship Science, or Iphakade, is by its very definition rooted in Ubuntu, and therefore has power to ferment into an ‘Out of Africa Science’ and stimulate leadership for a sustainable future of the planet and its people, as we travel further into the Anthropocene.

How do we learn from nature’s complexity? We cannot understand any of these complex problems, let alone solve them, in isolation.

Uptake will depend on a mix of unbalanced growth amongst science, economics, regulation, policy, behaviour, and so forth at a variety of scales, and with plenty of bottlenecks and tipping points along the way. But ultimately it will rely on appropriate data and how these can be best interpreted by, and for, a new generation of earth stewardship researchers and wider social participation through citizen science.

THEME: EARTH STEWARDSHIP	
<i>Activity 3: Understanding terrestrial vertebrate persistence with changing land use and climate change.</i>	
Date	2 August 2017
Time	TBC
Presenter(s)	Prof. Colleen Thelma Downs (University of KwaZulu-Natal)
Participants	Learners, Students, Academics & Public
Venue	TBC
Event Code	TVP40

Prof. Downs' work as a biologist has been focused on understanding terrestrial vertebrate persistence with changing land use and climate change. Prof. Downs is a biologist with broad and interdisciplinary research interests, including conservation, ecology and physiology, especially the behaviour of terrestrial vertebrates (reptiles, birds and mammals) with changing land use and climate change. She is well known for her work with the Cape Parrot, as well as other rare and threatened species (such as the blue swallow and the Nile crocodile). Another interest is science education and the development of research capacity, at both undergraduate and postgraduate levels, where she has made important contributions.

THEME 8: ART MEET SCIENCE	
<i>Activity 1: STEAM – Geogebra Conference: Experience Workshop’s Science-Technology-Engineering-Arts and Mathematics Playground @ Geogebra Conference Pre-Event</i>	
Date	28 June 2017
Time	10 -12pm, 2- 4pm
Presenter(s)	Dr. Kristóf Fenyvesi (University of Jyväskylä, Finland), Govan Mbeki Maths Development Centre (Nelson Mandela University)
Participants	Educators, Artists, Scholars, Parents
Venue	Nelson Mandela Bay Science & Technology Centre, Uitenhage
Event Code	STG14

Workshop 1: Model with Geogebra and Build with 4dframe: The Giant Dome by Dr. Kristóf Fenyvesi (10am to 12pm)

Workshop 2: Geogebra, Soccer and Basketball with Giant Molecules by Dr. Kristóf Fenyvesi (2-4 pm)

Experience Workshop experiments with various educational approaches to give opportunity to learn mathematics through the arts, and to do art through mathematics.

The aim is to involve the children, teachers, and families into a vibrant and creative dialogue between the mathematical and artistic way of looking at our world.

THEME: ART MEET SCIENCE	
<i>Activity 2: Presentations/Panel Discussions: Re-connecting: Art – Science-People-Place</i>	
Date	25 July 2017
Time	8am-2pm
Presenter(s)	Prof Richard Cowling, Dr Alastair Potts, Dr Kathija Yassim, Mrs Mary Duker, Adjunct Prof Marcus Neustetter & 2 Students (Nelson Mandela University)
Participants	Academics & Students
Venue	Bird Campus
Event Code	RPP28

Art meets Science meets Place encounters - an ongoing exploratory interdisciplinary project.

Working in cooperation, a range of academics and students drawn from the humanities and the sciences have participated in a number of site-specific bi-annual ‘encounters’ with the intention of ‘seeing the world’ through one another’s eyes.

THEME: ART MEETS SCIENCE	
<i>Activity 3: Point of Human Origin/ A Palaeoscience Exhibition</i>	
Date	29 July 2017
Time	08:30am- 12:00pm
Presenter(s)	Nelson Mandela University Archives and Exhibition Centre
Participants	Learners, Students, Academics & Public
Venue	2 nd Avenue Campus
Event Code	HOP44

The Point of Human Origin Exhibition is a palaeoscience exhibition – displaying, in a contemporary and engaging way, the ground-breaking findings of researchers from 20 universities worldwide (co-led by Nelson Mandela University, who have been recreating the “ancient landscape” (palaeoscape) through their findings at the Pinnacle Point caves near Mossel Bay.

The exhibition focuses on the archaeological findings along the Cape south coast, with a focus on the Pinnacle Point caves, and includes artefacts, photographs and panels of information, gathered through supervised visits to the caves, existing articles and interviews with the researchers themselves.

Curated by Christelle Grobler

An initiative of Nelson Mandela University’s Archives and Exhibition Centre, Communication and Stakeholder Liaison.

THEME 9: FROM BASIC SCIENCE TO TECHNOLOGY & ITS APPLICATIONS

Activity 1: Seminar: Applications of Mathematics to Industry and Careers in Data analysis.

Date	26 July 2017
Time	1 – 1:40pm
Presenter(s)	Mr Dillon Snyman (Nelson Mandela University)
Participants	Students, Learners & Public
Venue	South Campus (05- 0- 0003)
Event Code	MAT15

“Mathematics has a threefold purpose. It must provide an instrument for the study of nature. But this is not all: it has a philosophical purpose, and, I daresay, an aesthetic purpose.” – Henry Poincaré.

The demand for mathematicians in industry has grown exponentially over the years. In this talk we discuss why this is true by emphasizing a few industry fields where the use of mathematics has become a necessity.

We discuss how (pure and applied) mathematics as well as statistics is the key to unlocking new, evolutionary insights in the fields of finance, data science, mining and engineering by providing some examples of problems that have been dealt with in the industry.

We give students a glimpse of the career opportunities that mathematics exposes them to.

THEME: FROM BASIC SCIENCE TO TECHNOLOGY & ITS APPLICATIONS	
<i>Activity 2: Guest Lecture: The Challenge of the Very Small: Nanoscale Science</i>	
Date	12 June 2017
Time	3-4pm
Presenter(s)	Prof Edwin Constable (University of Basel), Switzerland
Participants	Students, Academics & Public
Venue	Council Chambers
Event Code	NSS19

Professor Edwin Constable has been involved in supramolecular chemistry since its inception and has published over 500 research papers and many books. Prof Constable was the Research Dean of the Faculty of Sciences until 2011 when he was appointed Vice Rector for Research.

Although his interests and expertise lie in metallo-supramolecular and materials chemistry, especially in the use of metal ions for the assembly of novel architectures incorporating specific electronic or photophysical properties, he has a broad interest in multidisciplinary research cutting across conventional boundaries.

He recently received the 2011 Sustainable Energy Award of the Royal Society of Chemistry.

THEME: FROM BASIC SCIENCE TO TECHNOLOGY & ITS APPLICATIONS	
<i>Activity 3: Tour: A Microalgae Technical Demonstration</i>	
Date	2 August 2017
Time	10 am
Presenter(s)	Dr Carla Kampman & Mr Brian Tait (Nelson Mandela University)
Participants	Students, Educators, Learners & Public
Venue	InnoVenton (1-11 Gomery Avenue)
Event Code	MET26

InnoVenton, has been developing a suite of microalgae technologies over the past several years. A Microalgae Technical Demonstration Facility is housed at InnoVenton and forms the basis for the DST-funded Microalgae-to-Energy Technologies project that includes a Microalgae Technologies Research Centre.

InnoVenton's novel, patented microalgae cultivation system has achieved improved productivities compared to conventional raceway systems, which in turn lowers the cost of production. household fuel, as well as liquid fuels.

Several other technologies are being explored, with the research, development and commercialization focused on three broad themes, namely (1) microalgae cultivation, (2) renewable energies, and (3) biomass processing.

The high protein content of microalgae means the product is an attractive animal feed ingredient, and the protein can also be extracted for food application.

THEME: FROM BASIC SCIENCE TO TECHNOLOGY & ITS APPLICATIONS	
Activity 4: <i>Using mathematical models to study transmission dynamics and prevention strategies of sexually transmitted diseases.</i>	
Date	2 August 2017
Time	1-2pm
Presenter(s)	Ms Tresia Holtzhausen
Participants	Students, Learners & Public
Venue	05-0-0003
Event Code	UMM43

Using mathematical models to study transmission dynamics and prevention strategies of sexually transmitted diseases.

A brief overview of some of the benefits of using mathematical models to study transmission dynamics of sexually transmitted diseases and challenges involved. Some basic concepts behind the model formulation and interpretation will be discussed to what you can and cannot learn from these models, and what their uses are in regards to prevention strategies.

THEME 10: STATISTICS AND THE BENEFITS TO TOURISM	
<i>Activity 1: Presentation: Statistics and How it Impacts Tourism in South Africa</i>	
Date	24 July 2017
Time	6pm
Presenter(s)	Prof Paul Fatti (University of Witwatersrand)
Participants	Public, Students & Academics
Venue	South Campus, New Science Building Auditorium
Event Code	STC17

Professor Paul Fatti is currently Emeritus Professor and Honorary Research Professor at the School of Statistics and Actuarial Science and the Dental Research Institute of the University of the Witwatersrand.

During his academic career he has co-authored a book, contributed a chapter to a book, published over 90 peer-reviewed papers; for one of which he received both the Tom Rozwadowski medal (1981) and the Goodeve Medal (1984).

Professor Fatti will be giving a 45 minute presentation on Statistics and how it impacts tourism in South Africa. This lecture will be open to the public and no advanced knowledge of statistics is required. A 15 minute presentation will also be given by the Nelson Mandela University statistics department on current research field.

THEME 11: YOUNG AFRICAN WOMEN IN COMPUTING (YAWiC)	
<i>Activity 2: Appreciation Lunch with Keynote Speeches, Inspirational Talks, Business Speed-Dating and Award Ceremony</i>	
Date	4 August 2017
Time	13:00 – 16:00
Presenter(s)	TBC
Participants	Attendance by invitation
Venue	The Club at 12 Bird Street
Event Code	ALK39

The HOD of the Nelson Mandela University Computing Sciences’ department is launching the Young African Women in Computing (YAWiC) initiative to highlight and address the demand for skills in the field of Computing Sciences, the misrepresentation of women in the sector, and to dispel the false perception regarding the careers in Computing Sciences.

Come and learn from successful woman in the industry such as the CIO of Barloworld Group, and from other young women studying Computing Sciences. Be inspired by the challenges they have encountered, how they overcame them and the successes they have achieved. Learn about how a CS or ICT qualification can help you to make a difference in the communities in which we live and work, by providing technological solutions for social issues such as water, agriculture, waste, energy and health. If you want to be a city girl or work in rural areas, we will tell you how your career in Computing Sciences can help you reach your dream.

THEME 12 : TOURING THE POINT OF HUMAN ORIGIN	
Activity : Point of Human Origin A Palaeoscience Exhibition	
Date	4 August 2017
Time	17:00pm- 19:00pm
Presenter(s)	Nelson Mandela University Archives and Exhibition Centre
Participants	Exhibitors and DST Delegates
Venue	2 nd Avenue Campus
Event Code	PHE49

The Archives and Exhibition Centre will be open to all Exhibitors and DST delegates for viewing after the daily proceeding of the 4 August 2017. This will take place at 17h00-19h00, wine and finger foods to be served.



Curated by Christelle Grobler

An initiative of Nelson Mandela University's Archives and Exhibition Centre, Communication and Stakeholder Liaison.

THEME 13: EXHIBITIONS AND SCIENCE SHOW	
<i>Activity 1: Hands-on Experiment: Rocket Design and Launch</i>	
Date	19 & 20 July 2017
Time	9am – 3pm
Presenter(s)	Prof Venter (Nelson Mandela University)
Participants	Learners
Venue	South Campus
Event Code	RDL09

Learners from schools in the metro and nearby rural areas will be identified and invited to attend the enrichment and science marketing exercise presented in the form of a competition.

The learners would be exposed to the theory of rocket design and propulsion and the simulation of the rocket trajectory (of rocket launch) considering specific fuel load and burn time.

Microsoft Excel will be used to simulate the effect of fuel mass and burn time on the acceleration of the rocket. The learners (in groups of 5) will then build a rocket, which will be launched in the afternoon.

THEME: EXHIBITIONS AND SCIENCE SHOW	
<i>Activity 2: Competition: Photographic Competition</i>	
Date	1 June – 25July 2017
Time	10am
Presenter(s)	Dr Alastair Potts (Nelson Mandela University)
Participants	Public, Students, Learners & Scientists
Venue	South Campus
Event Code	BPC10

A photographic competition based on the following themes:

- Amazing plants and/animals
- Natural landscapes of the Eastern Cape
- Scientists in action
- Biotic (e.g. Plant-animal) interaction

Submission will undergo a pre-screening and 140 photos will be selected and printed for the exhibition.

THEME: EXHIBITIONS AND SCIENCE SHOW	
<i>Activity 3: Exhibition & Science Shows: Touring Science Exhibitions</i>	
Date	4 August 2017
Time	2-5pm
Presenter(s)	Exhibitors
Participants	Learners & Educators
Venue	Missionvale Campus
Event Code	ESS31

Between 1000 – 2000 learners will be visiting different stalls to experience science demonstrations and to engage with the exhibitors. Some of the exhibitors will be the learners who are the regional winners of the Eskom expo.

Learners will also be able to attend a public lecture and role modelling sessions.

THEME: EXHIBITIONS AND SCIENCE SHOW	
<i>Activity 4: Career Guidance: Role Modelling in STEMI</i>	
Date	4 August 2017
Time	2-5pm
Presenter(s)	Segomotso Kelefetswe; Akani Hlongwane; Boitumelo Katsi & Tiyani Mahori (SAASTA)
Participants	Learners
Venue	Missionvale Campus block 509 0001,0002 &0006 (B1,2,3 &5)
Event Code	RMS32

STEMI Careers Role modelling aims to expose learners and educators to career opportunities in science, technology, engineering, mathematics and innovation (STEMI). The focus is on highlighting careers in engineering, chemistry, biotechnology, space science and agricultural sectors. Participants are given an opportunity to interact with appropriate role models in these fields for about four hours and educational resource materials on careers, as well as bursary information, are handed out to all participants.

THEME: EXHIBITIONS AND SCIENCE SHOW	
<i>Activity 5: Health Education</i>	
Date	4 August 2017
Time	2-5pm
Presenter(s)	Faculty of Health Science (Nelson Mandela University)
Participants	Public, Students, Learners & Scientists
Venue	Missionvale Campus
Event Code	ZHE33

Zanempilo truck which means “bringing health” is a mobile health education platform in the faculty of Health Sciences at Nelson Mandela University.

It delivers primary health care services while serving as teaching and learning platforms to health care students from across different disciplines.

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