JASSYM 2017

THE JAMAICA STATISTICAL SOCIETY
CONFERENCE PROGRAMME
3RD BIENNIAL STATISTICS SYMPOSIUM

Statistics for Success: Ethics, Data Security and Quality

October 24 – October 27, 2017
Main Library Multifunctional Room, UWI Mona
The Grand Caribbean Suite, Knutsford Court Hotel

Kingston, Jamaica

CONTENTS

The Jamaica Statistics Symposium

The Jamaica Statistics Symposium was conceived in 2011 at the Sixth Biennial meeting of the Central American and Caribbean Region of the International Biometric Society (IBS-RCAC) where it was noted that there was a local need for additional exposure to training in and appropriate use of statistical methodology. In addition, it was felt that more needed to be done to promote the use of evidence provided by data, for decision-making and policy development. At the 2011 meeting, there was also a positing of the belief that a formal professional body was needed in Jamaica to facilitate the efficient use of statistical applications to interpretation of various types of data. This professional body, The Jamaica Statistical Society (JSS), was launched on Friday, November 1, 2013 during the closing ceremony for the first Biennial Jamaica Statistics Symposium and functions as the organisation committed to providing support for valid and reliable data analysis services to aid more informed decision-making in both industry and academia.

The Biennial Jamaica Statistics Symposium and Pre-Conference Workshop Series is the flagship event of the JSS. These activities provide an opportunity for persons concerned with data management and analysis to benefit from the shared experiences of colleagues in the field, through oral and poster presentations as well as short course presentations.

This year, the Third Biennial Jamaica Statistics Symposium and Pre-Conference Workshop Series (JASSYM 2017) is being staged October 24-27, 2017. This event represents the continued growth and expansion of the offerings of the Symposium and Workshop Series. The audience for the workshops and symposium consists of individuals from varied backgrounds - academia, governmental and non-governmental agencies. The abstracts for submitted for presentation at this year's meeting cover use of data in a variety of fields including health, education, the environment and taxation policy. Regrettably, due to various personal challenges encountered by some of the authors, there will not be the actual presentations for some of the abstracts, but they have been retained in the programme booklet for your perusal.

Another indication of the growth of the Symposium and Pre-Conference Workshop Series is the increased opportunity to offset the cost of student participation due to sponsorship from the following institutions:

Texas A & M Statistical Services
The American Statistical Association
The Caribbean Institute for Health Research–Epidemiology Research Unit
Kansas University Medical Center

The Kansas University Medical Center is a new partner for JASSYM 2017 while the other three institutions provided sponsorship for JASSYM 2015 and, through their support for JASSYM 2017, are continuing their commitment to seeing the advancement of sound and ethical statistical practice in Jamaica and the Caribbean.

The Jamaica Statistical Society

Message from the President

As President of The Jamaica Statistical Society, it is with immense pleasure that I look forward to the staging of The Third Biennial Jamaica Statistics Symposium and Pre-Conference Workshop Series (JASSYM 2017). Under the theme, "Statistics for Success: Ethics, Data Security and Quality", a number of intellectually stimulating events are slated this four-day period. The combination of workshops and scientific presentations are aimed to hone further the data management and analysis skills of professionals from all sectors of society including researchers, data analysts, policy makers, and students.

The Society continues to work to fulfil its mandate to equip persons in Jamaica and the Caribbean region, to use statistics and statistical methodology to guide decision making that leads to national development and improved human welfare. Thus, in order to expand the cadre of statisticians and data analysts available to the Jamaican workforce in the future, we have used sponsorship support to offset the cost of registration for students who wish to attend the symposium. In so doing, we have offered a number of full scholarships to undergraduate students in the Applied Statistics and Statistical Sciences degree programmes at the University of Technology, Jamaica and the University of the West Indies. Students in other degree programmes also submitted applications for and obtained partial scholarships to attend the Statistics Symposium.

I wish to thank, publicly, our sponsors, The University of Kansas Medical Center, The Caribbean Institute for Health Research–Epidemiology Research Unit, The Texas A & M Statistical Services and the American Statistical Association, for their support that has enabled our accommodation of students at reduced cost.

I also take this opportunity to thank all supporters and participants – workshop and symposium attendees and presenters, session chairs, and our hard-working team of clerical assistants - for their efforts at making this year's staging of The Third Biennial Jamaica Statistics Symposium and Pre-Conference Workshop Series (JASSYM 2017), a successful one. I wish for all an intellectually stimulating sitting that will be rewarded by the desired career advancement as a consequence of your participation in this 4-day event.

Sincerely,
Novie Younger-Coleman Ph.D.

Message

American Statistical Association

The American Statistical Association enthusiastically supports the 3rd Biennial Jamaica Statistics Symposium and Pre-Conference Workshop Series. We have been pleased and honored to support previous symposia, and they just keep getting better! The program covers vital topics in statistical science, and the pre-conference workshops will help build statistical capacity in Jamaica.
Scientific societies like JSS play a key role in the advancement of knowledge. Efforts like this symposium are at the core of this role, and you all are much to be commended for your leadership. The ASA heartily endorses the symposium, and is delighted to support the JSS in all its work.

Sincerely,
Ronald Wasserstein
Executive Director
The American Statistical Association

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Workshop Presenters

Mr Andrew Diedrick

Andrew F. Diedrick is an exceptional and multi-talented trainer and IT Consultant. His passion for Information Technology started very early and today is at the top of his art with a distinction in a Master in Business Administration/MIS which he obtained from the Mona School of Business in 2012, a post graduate diploma in Business Administration, a Bachelor's degree in Computer Science, a diploma in Computer Applications and numerous certifications including Microsoft Office User Specialist (MOUS) from Microsoft, Computer Assembly and Repairs and AutoCAD both from ComAid. He has a plethora of computer skills which gives him his outstanding edge in his profession.

Diedrick began his career in 1997 as a computer trainer/marketing representative at Software Training Centre Ltd after discovering his ability to teach in high school. Between 2000 and 2001, he served as Assistant Computer Training Coordinator at the Jamaica Broilers Group Ltd., returned there in 2008 and has been serving since as Technical Training Officer. In this latest position, he holds multifarious roles and responsibilities including developing, coordinating and delivering classroom and Virtual Instructor-Led Training (VILT) in Enterprise Resource Planning (ERP) software; developing and publishing content online for staff in Jamaica, Haiti and the USA. He also runs his own computer training outfit that provides IT training, consultation services to corporate and private clients as well as software development and business solution services. He is highly proficient in his field and very passionate in empowering others to assume their full potential. In December 2016, Mr. Diedrick conducted a session on Data Manipulation in Microsoft Excel as part of the Jamaica Statistical Society workshop series. This was well received by all participants and so we are pleased to welcome him back to deliver a session on **Ensuring Data Quality and Security** with Microsoft Excel.

Dr Rochelle Tractenberg

Dr. Rochelle Tractenberg is Chair of the American Statistical Association (ASA) Committee on Professional Ethics and Director of the Collaborative for Research on Outcomes and Metrics, Georgetown University Medical Center, Washington D.C., USA. A highly accomplished woman, she concurrently followed and completed two undergraduate degree programmes over the period 1987 -1991 leading to her being awarded a Bachelor of Arts in Philosophy Analytical Reasoning and a Bachelor of Science in Biopsychology both from the University of California, Santa Barbara. Her graduate education led to her acquisition of two Master's level degrees, majoring in the Social Sciences and in Biometry and Biostatistics.

Higher degree education subsequently led to her being awarded two Doctor of Philosophy degrees, one in Measurement, Statistics and Evaluation and the other Psychology/Cognitive Sciences. She has also completed post-graduate education in ethics and educational affairs. She has taught extensively and is widely published in the area of ethics in statistical practice and has given multiple presentations aimed at promoting the ASA Ethical Guidelines- to ASA and international audiences. Her wealth of experience and enthusiasm for the subject of ethics in statistical practice makes her well placed to lead our workshop on **Ethical Reasoning in Statistical Practice**.

Mr Anthony Juehne

Anthony Juehne, MPH is the Chief Information Scientist at Ripeta, LLc and a Biomedical Informatician within Washington University with specialty skills in epidemiology and biostatistics. He has over eight years of experience within the field of healthcare informatics supporting Principal Investigators to define population criteria and research design to capture prospective and retrospective clinical data accurately and efficiently. Within the Center for Biomedical Informatics at Washington University, Anthony managed multiple research and quality-control projects simultaneously requiring extensive understanding of the electronic medical record and the regulatory protocol guiding ethical and confidential research. These projects required querying large-scale interoperable databases across diverse clinical domains and the creation of datasets using multiple statistical and programmatic software applications. His current work focuses on developing best-practices for conducting and reporting clinical research to enhance reproducibility, transparency, and accessibility.

Workshop Programme

Data Management Using MS Excel - Ensuring Data Quality and Security

Date: October 24, 2017

Duration: 8:30 a.m. – 12 noon (Half day)

Target Audience:

This course is geared towards advanced users of Excel including persons in the field of accounting and finance, sales and marketing and business intelligence.

Course overview:

Microsoft Excel is the leading spreadsheet application in the world today and is utilized for a wide range of business related functions. Accounting, Finance, and Inventory Management are just a few areas where Excel is used extensively. Still Excel is used increasingly as an analytical tool. Without a doubt Excel plays a crucial role in business and for this reason it is very important to ensure consistency and accuracy of the information entered and processed therein. Confidentiality and security are also very significant considerations as we work with the Microsoft Excel application. In this workshop we explore best practices in ensuring data quality and security such as file level security, document management tools and spreadsheet auditing. We will also explore analysing data with Microsoft Excel using tools such as flat and pivot tables and advanced functions.

Ethical Reasoning in Statistical Practice

Date: October 25, 2017

Duration: 8:30 a.m. – 4:30 p.m.

Target Audience:

All persons who carry out data analysis or need to have data analysis done for them. The workshop will apprise participants of what is expected of data analysts and statisticians and what the recipients and end users of data analysis reports should expect from those who carry out data analysis for them.

Workshop Title:

Ethical Reasoning with the ASA Ethical Guidelines for Statistical Practice: methods, analysis, interpretation and use.

Abstract:

This daylong workshop will comprise two sessions. The first one will focus on current/prior experience with "training in the responsible conduct of research", and its strengths and weaknesses, and introduce an alternative paradigm that may be better suited to statistics and data science as well as to modern scientific practice. The second session will discuss ethical statistical practice and Stewardship, a model for professionalism that prioritizes the discipline over the individual practitioner's career, to support ethical practice and to promote the "vigour, quality, and integrity of the field". With these sessions we will consider the dominant paradigm for ethics training and explore a new paradigm that emphasizes reasoning and decision making instead of familiarization with rules. We will use case studies in small- and whole- group discussion, to learn about ethical reasoning and to see how it works. The ASA Ethical Guidelines for Statistical Practice will be introduced and then we will explore ethical reasoning with the ASA Ethical Guidelines with two examples. After our lunch break we will learn about the stewardship construct and explore how our everyday engagement in statistical practice can represent opportunities to demonstrate and grow our stewardship roles. Finally, at the end of the first session we will have a discussion about whether (and why) statisticians may, or may seem to, be held to "a higher ethical standard". At the end of the second session we will discuss how participants can continue to build on these introductory materials, how to promote ethical statistical practice in our home departments/institutions, and how to promote stewardly statistical practice (including the use of statistics by others).

Main Feature Lecturer

David Smith, Ph.D.

Dr Smith has worked in academia, civil society, the private sector and the United Nations; focussing on Sustainable Development, Biodiversity Conservation, Climate Change, and Disaster Risk Reduction. He is currently Director of the Centre for Environmental Management in the Institute for Sustainable Development at the University of the West Indies (UWI), the Caribbean Chair for the Sustainable Development Solutions Network[1] and a member of the Independent Group of Scientists preparing the UN Global Sustainable Development Report 2019. The Institute researches Sustainable Development Governance and Policy, Disaster Risk Management and Environmental Management. My current work focuses on the Green Economy and mapping disaster risk and hazards and helping SIDS achieve the SDGs.

While working with the Jamaica Office of the United Nations Development Programme he managed UNDP's Environment, Energy, Climate Change and Disaster Management programme in the Bahamas, Turks and Caicos Islands, Cayman Islands and Jamaica. He was also responsible for programme execution and resource mobilization. His work has had far-reaching influence ion national and international policy development, having served as Regional Councillor for North America and the Caribbean and the Chair of the Business Committee of Council for IUCN, The World Conservation Union; functioned as a member of the Board of the Caribbean Conservation Association[2]; and filled the role of Executive Director of the Jamaica Conservation and Development Trust. He has also sat on two Government tribunals that dealt with physical planning and environmental offences and several policy development committees of the Jamaican Government. In addition, he has assisted in designing environmental financing mechanisms in Trinidad and Tobago, Jamaica, Uganda and Guyana.

He also has a background in media and mass communication as he, at one time, was an opinion journalist for the *Jamaica Herald* newspaper and acted in an award-winning commercial; advised on the technical aspects of an award-winning documentary on watershed management for CVM-TV*;* and co-hosted a live radio call-in programme 25 feet underwater in the Montego Bay Marine Park for KLAS-FM.

[1] http://unsdsn.org/
[2] http://www.ccanet.net/

Other Feature Lecturers

Shelly McFarlane, Ph.D.

Dr. Shelly McFarlane is a mental health epidemiologist and a member of the team of researchers within The Caribbean Institute for Health Research (CAIHR) , formerly The Tropical Medicine Research Institute. She has a wealth of experience as project coordinator, health researcher, and project manager for a number of large and small studies, including clinical trials. She has been a member of the investigator and management team for large national surveys such as the Jamaica Health and Lifestyle Surveys II and III and the Jamaica Youth Risk and Resiliency Behaviour Survey 2006. She has been member of the team of investigators for multi-country studies such as the "Development and Implementation of Culture Sensitive Peer /Lay Diabetes Education Program for Adults with Type 2 Diabetes in Six English Speaking Caribbean Countries", and "Congregations Taking Action Against NCDs". More recently, she has had to meet the rigorous standards for good clinical practices as project coordinator/manager for clinical trials carried out under the aegis of the Caribbean Institute for Medical Research. She has a history of successful acquisition of grant funding to carry out research.

Dr. McFarlane has been with the CAIHR for more than 10 years and has served as workshop facilitator for a number of basic and advanced research skills training workshops aimed at equipping health professionals and other persons seeking development of careers in research. She is an expert trainer in Effective Project Planning and Evaluation and, in addition to proving training locally, has been called to provide training for persons in the wider Caribbean region, North and Central America and in Africa. Dr. McFarlane will share with us in her feature presentation the practical experience and expertise at safeguarding data quality, developed over the years, and will further equip us to ensure that data gathered as part of our research processes will redound to improved human welfare by virtue of the high standards of quality met by the data gathered.

Other Feature Lecturers

Tamika Royal-Thomas, Ph.D.

Dr. Tamika Royal-Thomas is an Assistant Professor in the department of Mathematics and Statistics at The College of New Jersey, Ewing, New Jersey. She previously worked as a Lecturer & Biostatistician at Tropical Metabolism Research Unit (TMRU) at the Caribbean Institute for Health Research at The University of the West Indies (UWI), Mona Campus. Prior to that she worked at Winston-Salem State University, North Carolina. She received from The UWI, Mona, a B.Sc. degree in Mathematics and Biochemistry (Hons.), a post graduate diploma in Mathematics Education and a Master of Science in Biostatistics. Dr. Royal-Thomas received a Ph.D. in Biostatistics from Florida State University (FSU). She has vast teaching experience in the fields of Mathematics and Statistics to secondary and tertiary level students. She has also been employed in the pharmaceutical industry (at Sanofi Pasteur, a leading vaccine company worldwide), while at FSU.

Dr. Royal-Thomas has received numerous awards, including the UWI Principal's Research Award for the Best Research Publication, Faculty of Medical Sciences' for 2010 and 2017, Runner up of the R.A. Bradley Award 2011 at FSU, WSSU O'Kelly Scholar, Cavell Brownie Scholar at the Joint Statistical Meeting (JSM) in 2011 and she won the award for best oral presentation at the Jamaica Statistical Pre-conference workshops and Symposium (JASSYM) held in October 2015. She is the current First Vice President for the Jamaica Statistical Society (JSS) and is the chair of the planning committee for JASSYM 2017.

Dr. Royal-Thomas has several research publications and has done several oral presentations at international statistical conferences, including JSM and Eastern North American Region/International Biometric Society (ENAR) meetings. Her research interests include longitudinal data analysis, early life predictors of cardiovascular disease, factor analysis, principal component analysis, survival analysis and meta-analysis.

Other Feature Lecturers

Rochelle Tractenberg, Ph.D.

Dr. Rochelle Tractenberg is the Chair of the American Statistical Association (ASA) Committee on Professional Ethics and Director of the Collaborative for Research on Outcomes and Metrics, Georgetown University Medical Center, Washington D.C., USA. She is a woman of very high intellect, having completed multiple undergraduate and graduate level degrees, along with additional postgraduate certification, from a number of universities including the University of California, Santa Barbara, The University of Maryland and the California State University. She has taught extensively and is widely published in the area of ethics in statistical practice and, more recently, has been promoting the concept of stewardship to/through the ASA in an effort to heighten the capabilities of practitioners to carry out ethical statistical practices. As our feature presenter for the topic "Stewardship and Ethical Statistical Practice", she comes to introduce us to and engage us in reviewing the concept of "stewardly" statistical practice. The ultimate goal of her work is to equip all professionals to become practitioners to whom their respective fields can be entrusted.

Presentation of Papers & Symposium Activity Schedule

Thursday, October 26, 2017
Venue: Grand Caribbean Suite, The Knutsford Court Hotel

Time	Activity
8:00 - 8:30am	Registration
9:00 - 9:30am	**Opening Ceremony** Chair: Tamika Royal-Thomas Ph.D., First Vice President/Chair, JASSYM 2017 Planning Committee
9:30am - 10:30am	**Welcome and Opening Remarks:** Tamika Royal-Thomas Ph.D., First Vice President/Chair, JASSYM 2017 Scientific Committee **Greetings** Statistical Institute of Jamaica **Feature Lecture: Can Data Help to Achieve the Development Goals?** Dr. David Smith, Coordinator, Institute for Sustainable Development
10:30am - 11:15am	Coffee Break and Poster Viewing ***Session A*:** **Statistics for Success– Improving Human Welfare** Session Chair: Christine Walters Ph.D., Office of the Dean Faculty of Medical Sciences, University of the West Indies ***Abstract being featured:*** **An Investigation of the Factors that Contribute to the Likelihood of Recidivism in Jamaica: A Cross-Sectional Study of Tower Street and Fort Augusta Correctional Centres.** Patrico Tyrell, B.Sc. Applied Statistics Graduate, University of Technology

11:15am - 12:15pm	**Session 1:** **Statistical Practices using Health Data Analysis and Education** Session Chair: Rochelle Tractenberg Ph.D. Department of Neurology, Georgetown University **Zero-Inflated Predictor Variables in Regression of Environment Variables on Obesity Indices: Secondary Analysis of the Jamaica Health Life Style (JHLS) II** Dr. Colette Cunningham-Myrie, Department of Community Health and Psychiatry, University of The West Indies **Assessing the Views of Students in Selected Tertiary Institutions in Jamaica on Ethical Considerations in Data Analysis** Cynthia Onyefulu Ph.D. Faculty of Education and Liberal Studies, University of Technology **The Misleading Effects of Cumulative Data: A 2 Year Review of HIV Data** Dr. Geoffery Barrow, Department of Medicine Faculty of Medical Sciences, University of The West Indies
12:15 - 1:15pm	Luncheon
1:15pm - 2:00pm	**Session 2A: Feature Presentation** Session Chair: Jonathan Mahnken Ph.D., Kansas University Medical Centre **Safeguarding Data Quality in Large and Small Studies** Shelly McFarlane Ph.D., Caribbean Institute For Health Research, University of the West Indies
2:00pm - 2:45pm	**Session 2B: Short Course Presentation** Session Chair: Jonathan Mahnken Ph.D., Kansas University Medical Centre **Case Studies & Hands-on Training Using Jupyter Notebook and R for Reproducible Research (Part 1)** Anthony Juehne MPH, Ripeta, LLc & Washington University Lorinette Saphire Wirth MPH, St. Louis University
2:45pm - 3:30pm	Coffee Break & Poster Viewing ***Session B*:** **Statistics for Success in Policy Development** Session Chair: Cynthia Onyefulu Ph.D. Faculty of Education and Liberal Studies, University of Technology ***Abstract being featured:*** **Will a Sweetened Drink Tax give Jamaican MSEs a Relative Competitive Advantage?** Shana-Kaye Thelwell, Research and Analysis Unit, Ministry of Finance and the Public Service

3:30pm - 4:30pm	Session 3: Safeguarding Data Quality and Data Security **Session Chair: Edward Jones Ph.D., Texas A & M Statistical Services** Managing Research Data: Navigating the Landscape of Planning, Storage and Sharing Data at the UWI Centre for Marine Sciences **Marcia Creary Ford, Caribbean Coastal Data Center Center for Marine Sciences, UWI** Overcoming Data Management Challenges Using Stata **Novie Younger-Coleman, Caribbean Institute for Health Research, University of the West Indies** Ensuring Data Security **Moniphia O. Hewling Ph.D., Cyber Crimes Security Consultant Ministry of Science, Energy and Technology**

Presentation of Papers & Symposium Activity Schedule

Friday, October 27, 2017
Venue: Grand Caribbean Suite, The Knutsford Court Hotel

Time	Activity
8:00 - 8:30am	Registration
9:00 - 9:45am	**Session 4A: Becoming a Steward of the Discipline of Statistics** Session Chair: Natalie Guthrie-Dixon M.Sc. Caribbean Institute for Health Research, University of the West Indies **Feature Presentation** **Stewardship and Ethical Statistical Practice** Dr. Rochelle Tractenberg, Director, Collaborative for Research on Outcomes and Metrics, Georgetown University Medical Center
9:45 - 10:30am	**Session 4B: Short Course Presentation** Session Chair: Richard Plummer M.Sc., AMIMA, Grad.Dip, Department of Mathematics, University of West Indies **Case Studies & Hands-on Training Using Jupyter Notebook and R for Reproducible Research (Part 2)** Anthony Juehne MPH, Ripeta, LLc and Washington University Lorinette Wirth MPH, Saint Louis University Center for Outcomes Research, St Louis University
10:30 a.m. -11:15 a.m.	Coffee Break & Poster Viewing ***Session C*:** **Statistics for Success in Education** Chair: Paulene Gayle-Betten Ph.D., Northern Caribbean University **Examining the Impact of Implementing Token Economy on Adolescents Classroom Behaviour and Classroom Productivity** Alesha Wright, Church Teacher's College
11:15-12:00pm	**Session 5A: Feature Presentation** **Statistical Practices in Handling Longitudinal Data** Session Chair: Olusegun Afis Ismail M.Sc. School of Mathematics and Statistics, Faculty of Science & Sport University of Technology, Jamaica **Data Quality in Longitudinal Data Analysis: An Empirical Case** Dr. Tamika Royal-Thomas**,** Biostatistician & Lecturer The College of New Jersey, The Department of Mathematics and Statistics, Ewing, NJ, USA.

12:00 p.m. – 1:00 p.m	**Session 5B:** Session Chair: Shelly McFarlane Ph.D., Caribbean Institute for Health Research, University of the West Indies **Panel Discussion: Career Advancement Opportunities in the Field of Statistics** Panelists: *Olusegun Afis Ismail*, M.Sc. School of Mathematics and Statistics, Faculty of Science & Sport, University of Technology, Jamaica *Edward Jones*, Texas A & M Statistical Services *Anthony Juehne*, MPH, Ripeta, LLc and Washington University *Jonathan Mahnken*, Ph.D., Kansas University Medical Centre *Marshall Tulloch-Reid*, MBBS, MPhil, DSc, FACE, Caribbean Institute for Health Research, University of the West Indies
1:00 p.m. – 2:00 p.m.	Luncheon
2:00p.m.-3:00 p.m.	Closing Exercises

Poster Presentations

- **Examining the Impact of Implementing Token Economy on Adolescents Classroom Behaviour and Classroom Productivity**
  Alesha Wright, Church Teacher's College, Jamaica.

- **Will a Sweetened Drink Tax give Jamaican MSEs a Relative Competitive Advantage?**
  Shana-Kaye Thelwell, Senior Economist, Research and Analysis Unit, Ministry of Finance and the Public Service.

- **An Investigation of the Factors that Contribute to the Likelihood of Recidivism in Jamaica: A Cross-Sectional Study of Tower Street and Fort Augusta Correctional Centres**
  Patrico Tyrell, Georgia Mullings, Renee Reid, Shantol Brown & Donovan Palmer, Faculty of Science and Sport, University of Technology, Jamaica.

- **An Investigation of Dietary Supplement Usage in Young Jamaican High School Athletes Ages 14-19 In The Kingston And St Andrew Metropolitan Area**
  J. Smith & S. Turfus, University of the West Indies

- **An assessment of nurses' knowledge attitude and practice (KAP) of pharmacovigilance at the University Hospital of the West Indies Mona.**
  Obi U., MSc & Campbell J. E., MD PhD, University of the West Indies

- **Whither A Jamaican Carbon Tax? Issues to Consider**
  Derron M. Currie, Research and Analysis Unit, Taxation Policy Division, Ministry of Finance and the Public Service, Jamaica

- **CODATA-RDA School for Research Data Science: Building Data Foundations for Future Researchers**
  Robert Quick, Lorinette Wirth, Kyle Gross, Simon Hodson, Leslie McIntosh, Vince Neal, Elizabeth Prout, & Hugh Shanahan, Research Technologies, Indiana University

- **Evaluation of Summer Employment Worker: Analysis of ratings**
  Mikhael Donaldson, Novie Younger-Coleman, Shelly McFarlane, Damian Francis

Abstracts

I. Abstract (Feature Lecture)
David C. Smith, Ph.D.

Data and evidence may assist countries to achieve the Sustainable Development Goals (SDGs) in different ways.

1) Setting indicators to monitor progress
2) Determining effectiveness of actions and policies
3) Diagnosing problems
4) Suggesting solutions
5) Providing evidence on which to base policy and action

Global aggregations of data often omit SGDS because of lack of data. This may be because data are not made public or are outdated or because the data have not been collected. A recent survey of CARICOM countries carried out by the Caribbean Policy Research Institute with the Sustainable Development Solutions Network and the Institute for Sustainable Development at the UWI found that barriers to data collection included the large number of datasets to be collected, insufficient staffing and budget and lack of capacity to keep up with all the indicators to be measured among other factors. Some data were not collected by any CARICOM countries.

Data are vital to achieving the SDGs, for Jamaica to make the best use of data to drive human development, attention should be paid to

1) Building a culture of evidence-based policy
2) Closing data Gaps in in time and space
3) Building capacity to analyse and estimate future trends

Innovation in the use of "big data", anonymized cellphone data, remote sensing and GIS may be useful to under-resourced governments for collecting development data and keeping it current. Recent advances indicate that a lot of socially-relevant and SD Goal-related information can be gathered from cellphone data. Satellite imagery can also assist in development planning and measuring demographics and aspects of human behaviour. Working with academia and the private sector can build capacity for data analysis. Improving collaboration between government departments, and committing to open data policies will improve data quality, help to improve human development and achieve the Goals.

II. 'Safeguarding data quality in large and small epidemiologic surveys'
Shelly McFarlane, Ph.D.

The quality of data must be safeguarded in epidemiologic studies of any scale if the results and findings from the work are to be use to improve processes and make decisions. Such data will be of interest and value to all stakeholders. Good data management practices should be adhered to from the conceptual phase of the study and the reason for collecting the data should be based on ethical research practices. The goals of the data collection help to shape the quality standards. Optimizing the quality of the data requires careful systems for monitoring data collection, data entry and data cleaning process. The work being presented highlights the various steps that should be taken to ensure that data gathered in small and large epidemiological studies meet the desired standards of quality and produce data required for ethical data analysis. The work involved in training, retraining and monitoring of data collection and data entry staff; methods that can be used to assess and quantify data quality; steps that can be taken to circumvent and mitigate flaws in the data collection and management process; and possible guidelines for declaring gathered data unusable, will be presented.

III. 'Assessing the Views of Students in Selected Tertiary Institutions in Jamaica on Ethical Considerations in Data Analysis'

Cynthia Onyefulu, Ph.D.

Aims. Despite the significant progress made in the field of bioethics to put in place some policies, regulations, or guidelines for research ethics, only a few middle and high-income countries have active ethical review system to regulate ethical issues in research. Most research misconduct occurs during the data collection, and analysis stages and this area continues to pose a challenge for research ethics committees around the world. There are little or no studies on ethical considerations in data analysis, especially in low-income countries. The purpose of this paper is to summarize ethical concerns in data analysis and the need to encourage students to apply ethical principles in the different stages of the research process. It is hoped that this paper will fill the gap in the existing literature.

Methods. An explanatory mixed methods research design was used to examine the views of 56 participants on ethical considerations in data analysis. A questionnaire, semi-structured interview, and document reviews were used to collect data. Furthermore, a comprehensive search of the literature was conducted using online databases (Ebsco Host, Emerald, & First Search), and internet search engines such as Google and Google Scholar. Descriptive statistics were used for the analyses.

Results. The findings showed that all the participants knew about basic ethical principles such as respect for persons, beneficence, and justice. However, there was evidence of research misconduct (6 or 11% fabrication & 30 or 54% plagiarism). Other ethical issues were misinterpretation and misrepresentation of findings, and wrong use of data analysis methods. Common reasons for these actions were pressure to complete assignment/project, and ignorance of citation rules.

Conclusions. In other to adequately prevent research misconducts such as the ones mentioned above, there is the need to properly educate persons about the ethical issues in research.

Keywords: Ethical issues, fabrication, plagiarism, data analysis

IV. 'Using Life History Calendars to Improve Measurement of Lifetime Experience with Alcohol Use Disorder and related Mental Disorders' (**WITHDRAWN)**

William Axinn & Stephanie Chardoul

Accurate life time measurement of general population experience with Alcohol Use Disorder (AUD) and related disorders (such as major depressive disorder (MDD), generalized anxiety disorder (GAD) and post-traumatic stress disorder (PTSD)) poses a significant challenge. However, these life time measures are crucially important to establish population prevalence and to enable population-level research on a wide-range of topics including, long-term consequences of AUD, service needs for AUD, and causes of AUD. This study uses life history calendars (LHCs) with a design derived from cognitive science of memory retrieval to dramatically improve life time measures of AUD. The study features a large scale, general population experiment using the WHO's Composite International Diagnostic Interview (CIDI) to measure AUD, MDD, PTSD and GAD and randomly assigning respondents to conditions with and without a LHC preceding the CIDI. Analyses of that experiment demonstrate that careful use of the LHC produces nearly twice the reports of AUD experience. The LHC operates to increase rates of both screening and diagnosis for AUD and other disorders. The LHC increases measurement in both men and women, and though the increases in life time reporting are greater among older respondents, the LHC also produced increased reports among younger respondents. Finally, additional experiments demonstrate that the LHC also produces accurate reports of age at onset, which is valuable for analyses of causes, consequences and service needs.

V. 'An Investigation of Dietary Supplement Usage in Young Jamaican High School Athletes Ages 14-19 in the Kingston and St. Andrew Metropolitan Area.'
Johanna Smith & S. Turfus

Aim and Objectives: This study sought to identify dietary supplementation habits among high school athletes ages 14-19 in the Kingston and St. Andrew Metropolitan Area; through identifying: (i) the supplements are taken (ii) the rationale (iii) frequency of use (iv) source of influence (v) the existence of age and gender correlations.
Method: A 28-item questionnaire gathered data from athletes ages 14-19 from various high schools in the Kingston and St. Andrew Metropolitan Area. Data analysis provided descriptive summaries and Fisher's Exact tests were used to determine associations. Microsoft Excel 2013 and SPSS Version 20 were used and P values < 0.05 were considered statistically significant.
Results: A total of 87 respondents were in this study, 54 males, 33 females, with average age 15.79 ± 1.105 years. The most commonly used supplements - Amino Acid Preparations, Protein Products, Vitamin C, Iron, Echinacea, Calcium and Caffeine were used by more than 57% of the respondents (*n*=50, 32 males and 18 females). Health improvement was the primary reason for supplement use and information about supplements mostly came from parents/guardians. The supplements were primarily obtained from parents and coaches. More males than females and more of the older respondents used supplements (P=0.014)
Conclusion: Prevalence of supplement use amongst high school athletes is high with use more common amongst males (females) and older (younger) adolescents. There is need for education of high school athletes regarding use of dietary supplements.
Keywords: Dietary supplement, High School Athletes

VI. 'Toward Classifying Urban and Rural Spaces in Trinidad and Tobago: A Mixed Method Approach' (**WITHDRAWN)**
Godfrey St. Bernard & Donnel Cuffie

Urban and rural spaces are real phenomena in Trinidad and Tobago. Nonetheless, there is no formal means of operationalizing urban and rural spaces in Trinidad and Tobago except in cases where administrative area classification makes reference to the cities and boroughs as clearly defined urban spaces. Within the remaining regional corporations in Trinidad and in the island of Tobago, rural spaces complement urban spaces, yet there does not exist any objective mechanism to classify differences in such spaces within the regional corporations in Trinidad and in the island of Tobago as a whole. This paper seeks to establish an objective mechanism using attributes pertaining to communities in all of the regional corporations and in Tobago and relying specifically on data from the 2011 Population and Housing Census in Trinidad and Tobago. The attributes relate to a host of demographic, economic and ecological characteristics at the community level. The community will be the unit of analysis and multivariate statistical techniques such as factor analysis and cluster analysis are used to discriminate between urban and rural spaces in the regional corporations in Trinidad and in the island of Tobago. These empirically determined spaces will be assessed in conjunction with interpretive nuances of regional planners who have been presented with opportunities to subjectively map urban/rural spaces in accordance with their respective yardsticks. In conclusion, the paper reflects the power of statistics and its scientific function in verifying and contesting the subjective character associated with the operationalization of urban/rural differences in Trinidad and Tobago. Moreover, it will provide a more reliable and valid basis for the determination of processes akin to gauging urbanization and urban growth in Trinidad and Tobago.

VII. 'Temporal Trends in Road Traffic Crashes and Implications for Road Safety Promotion Evidence for Trinidad and Tobago Fatal Road Traffic Crash Data 2005-2015' (**WITHDRAWN)**
Melissa Nesbitt & Godfrey St. Bernard

Globally millions of people succumb to fatal road traffic crashes while using roadways each year. This problem affects families and places heavy financial burdens on them. Road safety promotion seeks to highlight these events which are preventable. Accordingly, this study attempts to conduct research to better understand and describe the magnitude of fatal road traffic crashes in Trinidad and Tobago between 2005 and 2015 on the understanding that there are other underlying factors deemed critical in treating with the problem and thus ought to be considered in further studies. The paper seeks to examine a variety of temporal trends whether annual, monthly, quarterly, weekly or hourly to discern consistent patterns of outcomes as a means of informing ameliorative processes. The data are obtained from records pertaining to fatal road traffic crashes collected, stored and managed by CAPA – the Crime and Problem Analysis Branch in the Police Service of Trinidad and Tobago. A range of descriptive and multivariate statistical techniques generate results that provide useful cues and insights to inform ameliorative interventions. Preliminary results reveal that more than one hundred people died annually in each year, during the period under review. Despite variations in the number of fatal crashes during the period 2005-2015, a downward trend was evident with the highest number of fatalities occurring annually being observed during the period 2005 to 2008. The weekend stood out as having a higher concentration of fatal crashes especially in pre-dawn and dawn hours of the morning. The highest frequency of fatal crashes was in the month May, followed by April. As expected, there were variations in the hours of the day when crashes occurred though the majority were observed in the late evening and night time hours. The findings from this study are useful in informing initiatives for greater enforcement, public education and environmental modification as prevention measures.

VIII. 'Plugging Swiss Cheese: Data-Driven Curricula Interventions at the University of Technology, Jamaica' (**WITHDRAWN)**
Paul W. Ivey

Jamaica and other countries in the Caribbean region are highly dependent on imported petroleum to meet their energy needs. Therefore, it is of paramount importance that they diversify their energy mix with renewable sources such as biomass, geothermal, hydro, solar, and wind. Having the right set of relevant skills available among personnel working in the energy sector is necessary for achieving this objective. In this paper, the results of a needs analysis survey conducted using a mixed method (quantitative and qualitative) approach among final year students at the University of Technology, Jamaica (UTech), to ascertain their knowledge of energy innovation, entrepreneurship, and related thematic areas are reported. The respondents reported knowledge gaps in most of the key innovation, entrepreneurship, and related thematic areas, such as knowledge and technology transfer; intellectual property (IP) rights; IP evaluation; IP commercialization; innovation management; and use of patent databases. These results were used to inform curricula interventions to address the knowledge gaps, so that graduates of the University will have the capacity for effective knowledge transfer and the capability to generate and apply innovative solutions and modern technologies to diversify the energy mix of Jamaica and other Caribbean countries.
Keywords: Entrepreneurship, innovation, intellectual property, knowledge transfer, renewable energy.

IX. 'Will a Sweetened Drink Tax give Jamaican MSEs a Relative Competitive Advantage?'
Shana-Kay Thelwell

Based on their relative effectiveness in reducing consumption of *inter alia* sweetened beverages and the prevalence of non-communicable diseases (NCDs), taxes on such products are rapidly gaining popularity globally. NCDs, especially diabetes, not only contribute significantly to the growth of obesity but account for several deaths annually. Notwithstanding, only few countries have formally adopted taxes on sweetened beverages as part of a targeted public health policy. In this research we explore for the first time to our knowledge, the possible effects that an implementation of a sweetened drink tax would bring in the Jamaican context. A second innovation of our paper is that we examine the potential impact of that such tax would have on Micro and Small Enterprises (MSEs) producing sweetened drinks mainly in the informal sector.

Overall, we argue that for a suitable tax regime to be implemented, key consideration must be given to its overall design in order to ensure that some local MSEs are not only brought into the tax net but also that they do not enjoy a relative competitive advantage over their formal counterparts.
Keywords: Public Policy; Sweetened Beverages; Non-Communicable Diseases

X. 'An assessment of nurses' knowledge attitude and practice (KAP) of pharmacovigilance at the University Hospital of the West Indies Mona.'
U. Obi, M.Sc. & J.E. Campbell, M.D. Ph.D.

Purpose: The objective of the study is to assess nurses' knowledge, attitude, and practice (KAP) of pharmacovigilance.
Materials and Methods: This is a cross-sectional study that utilizes a questionnaire to evaluate nurses' KAP of pharmacovigilance at the University Hospital of the West Indies, Mona. A sample size of 234 nurses was selected using a 95% confidence level with the *Raosoft* online sample size calculator. Data obtained from filled questionnaires were analysed using the SPSS 20 using descriptive and inferential measures. The chi-square test was used to test the association between two attributes at a $P< 0.05$ significant level.
Results: 209 responses were received from 260 distributed questionnaires, giving an 80% response rate. 13.5% of the nurses had heard of the term pharmacovigilance prior to the study. 58.4% correctly stated the functions of pharmacovigilance. Results for attitude towards pharmacovigilance revealed 93.7% of the nurses felt it was a professional obligation to report Adverse drug reactions (ADR). 55.3% of nurses indicated they had reported an ADR. A χ^2 test of independence was performed to determine an association between nurses who noted ADRs in clinical practice and nurses who reported ADRs. Results showed a significant association between these two groups, $\chi 2\ (1) = 86.642$, $P < 0.05$.
Conclusion: This study concludes that the registered nurses at UHWI had good attitude towards pharmacovigilance, although their knowledge and practice was limited. Recommendation from the study include to institute pharmacovigilance training programs that will improve nurses' knowledge, and hopefully impact their practice.
Keywords: Knowledge, attitude, practice, Registered Nurse, adverse drug reaction, pharmacovigilance.

XI. 'Whither A Jamaican Carbon Tax? Issues to Consider.' (**WITHDRAWN**)
Derron M. Currie

Concomitant with growing concerns about emissions and global warming, carbon taxes have increased in popularity worldwide. A common desire by many practitioners is to design appropriate tax policy to curtail such emissions and simultaneously raise employment/economic output in their respective economies. Notwithstanding the unrelenting spread of carbon taxes, as far as we are aware, there is relatively little research that focuses on such taxes in Latin American and Caribbean countries. Consequently, the main contribution of this research is that we explore the potential of introducing a carbon tax in the Jamaican context. Using descriptive techniques, we find inter alia suggestive evidence that a carbon tax might produce the desired double dividend albeit only in the long-term. Simultaneously, we document various experiences of implementing carbon taxes in selected countries. Hitherto, this has been a relatively unexplored issue and our paper attempts to narrow this gap.

XII. 'Case Studies and Hands-on Training using Jupyter Notebook and R for Reproducible Research.'
Lorinette Saphire Wirth, MPH; Connie Zabarovskaya, MITM, MBA;
Cynthia Hudson Vitale, MLIS; **Anthony Juehne, MPH**; Thomas Burroughs, PhD;
Leslie D. McIntosh, PhD, MPH

Reproducibility is an essential component of the scientific method; yet, irreproducible research is common in Science. The paucity of reproducible research raises questions of validity, quality, and overall transparency in scientific research, in addition to potentially influencing the public's perception and trust of science. Reproducible research ensures access to the data and code associated with scientific methods adopted and results produced within disseminated research to fully reproduce the entirety of the represented scientific workflow. However, limited conceptual knowledge and programmatic training are leading barriers to achieving reproducible research. Computational notebooks may be utilized to reduce barriers to reproducible research by allowing multiple pieces of the scientific compendium to be written, shared, and re-executed within the same file and programmatic language. Jupyter Notebook is an open-source, web-based environment for writing text, executing code, and displaying output creating a clean 'publication' of a research project's entire scientific workflow and associated documented methods. As a case study in reproducible research, we utilize the R software to predict breast cancer survivability using data science techniques in an attempt to reproduce an earlier study (bit.ly/2ovDfEq). We aim to: 1) Illustrate Jupyter Notebook as a tool to make text, code, and results transparent; and 2) Understand current breast cancer survivability using public data.

The work being presented in the 2 x 45-minute tutorial sessions will include:
- A basic introduction to Jupyter Notebook and its components
- A discussion about the benefits of using Jupyter Notebook compared to other tools
- Hands-on Exercises in Running R in Jupyter Notebook

XIII. 'Examining the Impact of Implementing Token Economy on Adolescents Classroom Behaviour and Classroom Productivity."

Alesha Wright

Objectives: The purpose of this research was to assess the effect that students' behaviours have on classroom management and classroom productivity. In addition, the study evaluated and analysed the impact of implementing token economy as a behaviour modification strategy to improve students' behaviours and classroom productivity.

Methods: A mixed method qualitative action study was conducted over the period of 6 weeks at May Day high School Mandeville, assessing the impact of token economy pre- and post-intervention. Teacher's observation of the implementation of token economy pre, during and post implementation was assessed along with teacher and students journals; students' pre and post interview results and students grades. The statistical software Statistical package for the Social Sciences (SPSS) version 17 was used to assess the difference between students grades while Nvivo version 11 was used to code teachers and students primary sources.

Results: 7 students were sampled at May Day High School in rural Jamaica. 51% were male while 43% were females. The average age of the pupils were 14.71 years. The data illustrated that prior to the implementation of token economy negative behaviours and Lack of interest were the most prevalent maladaptive behaviours affecting classroom productivity. Following the implementation of token economy it was found that students' grades, interest, perception of the class and attitude increased.

Conclusion: Token economy is a useful mechanism of behaviour modification as it improves students' behaviour, grades, class perception which is associated with improved classroom productivity.

XIV. 'Managing Research Data: Navigating the landscape of planning, storage and sharing data at the UWI-Centre for Marine Sciences.'

Marcia Creary Ford, M.Phil.

Aims & Objectives: The designed and implementation of a data management protocol for the UWI-Centre for Marine Sciences (CMS) to ensure that data collected under various research projects were appropriately inventoried, stored, shared and assigned accreditation.

Methods/Models Used: The Caribbean Coastal Data Centre (CCDC) currently archives data from some local and regional research projects. However, there was no established protocol to send data collected during research projects to the CCDC for quality checks, storage and sharing. Reviews of the UWI policy on data and policies from other local and international institutions formed the framework for the development of the draft CMS Data Management Policy. The draft document was widely circulated for comments and consultations were held. Training in data management was also conducted and researchers assisted in re-formatting their datasets for long-term inclusion in the CCDC database.

Results & Conclusions: The Data Management Policy now guides the handling of research data. The publication of peer-reviewed "data papers" is being pursued and data sharing agreements templates have been developed. There are still challenges in converting existing datasets to the new data format, dealing with missing metadata and the limited capacity to effectively implement the programme.

XV. 'CODATA-RDA School for Research Data Science: Building Data Foundations for Future Researchers'(**WITHDRAWN)**

Robert Quick; Lorinette Wirth; Kyle Gross; Simon Hodson; Leslie McIntosh; Vince Neal; Elizabeth Prout & Hugh Shanahan

The ever-increasing volume and variety of data being generated impacts academia to the private sector. Contemporary research and evidence-based decision making cannot be done effectively without a range of data-related skills, such as, but not limited to, the principles and practice of Open Science, research data management and curation, data platforms and infrastructures implementation, data analysis, statistics, visualisation and modeling techniques, software development, and annotation. We define 'Research Data Science' as the ensemble of these skills.[3] While the international, collective ability to create, share, and analyze vast quantities of data is profound, there remains a shortage of individuals skilled in Research Data Science worldwide, which limits this transformative effect. With the appropriate data training however, the 'Data Revolution' offers great opportunities for students and professionals with modern data skills,such as when entering a job market where these skills are in demand or conducting research.[3] The CODATA-RDA School for Research Data Science brings these concepts and tools to communities that may not have been introduced to the wide range of open resources currently available. This two-week course builds core data science skills and introduces international tools and resources for researchers. We will introduce the foundational schools that will take place this year in Trieste, Italy and Sao Paulo, Brazil to encourage participation from Jamaica and other Latin-American and Caribbean countries. We will also discuss the framework of course materials and structure that allows regional instances of the School for Research Data Science.

XVI. 'Stewardship and Ethical Statistical Practice'

Rochelle E. Tractenberg, Ph.D.

A "steward of the discipline" is someone to whom we can entrust **the vigor, quality, and integrity of the field**. This concept was originally conceptualized for doctoral students and doctoral holders, but *every* practitioner may strive to be that person to whom the field can be entrusted. Engagement with the discipline/professional community can support your scholarship, your stewardship -and the discipline. The stewardship model puts the field first – ahead of the individual's CV. This can seem unreasonable, although it is simply unusual – and difficult to observe. However, it requires only a commitment to practice with integrity, to engage with professionalism, and to actively promote the prioritization of the discipline in decision-making. Stewardly statistical practice is therefore *ethical* statistical practice; engagement with the stewardship construct and the ASA Ethical Guidelines for Statistical Practice can help demonstrate that you are (or intend to be/become) someone to whom the community can entrust the vigor, quality, and integrity of the field.

[3] CODATA School on Research Data Science Task Group

Corresponding Author
Robert Quick

XVII. 'The Perils of Cumulative Data: A 2-year Review of HIV Data'
G. Barrow; K. Pate-Robinson; T. Thompson & E. Barton

Introduction: Monitoring and evaluation are critical components of programme management. Historically, data reporting to central organisations have focused on cumulative data. Use of electronic medical records has made individual–level analysis of programme output less labour intensive and more feasible. This review highlights the value of distinguishing between the sources of the measurements (occurrence vs individual) in presenting results of analyses using cumulative data.
Methods: Data extracted from the SQL HIV treatment database at an HIV/AIDS research and education centre as well as hand collected logs of clinic output enabled a 2-year, retrospective review. A modified HIV continuum of care framework and proportional change models using cumulative data (with repeated occurrences on measurements units) from previous years enabled prediction of estimates for future years and comparison with results from the use of individual-level data. We calculated the differences in output for the two methods of data reporting.
Results: The cumulative data for Viral Load (VL) sample collection, return and suppression rates varied across the two years. Proportions of total population for these indicators for 2014 were 0.833, 0.768, 0.605 for cumulative data and 0.590, 0.556, 0.476 for individual-level data; and for 2015, 0.880, 0.775, 0.607 for cumulative data and 0.575, 0.492 and 0.400 for individual-level data. The over estimation of each measure was 29.3%, 27.5% and 21.4%, respectively, for 2014 and 34.7%, 36.5% and 34.4% for 2015. Proportional projections for individual-level data representing 2014 and 2015 resulted in better prediction of performance than for cumulative data.
Discussion: Interpretation of cumulative data, without differentiation between measurement of units and measurement of occurrences, can lead to significant over-estimation of programme performance (relative to estimates from use of individual-level data) and failure to identify the programmatic gaps more readily detected by individual-level data.

XVIII. 'Data Quality in Longitudinal Data Analysis: An Empirical Case.'
Tamika Royal-Thomas, Ph.D. , Michael S Boyne, Terrence E Forrester

Longitudinal data involves a myriad of data processing steps and may prove to be complex to manage and analyse. In many cases the data is repeated over time with individuals having multiple data points. Analyses can be technical and requires understanding different aspects of the data. Data processing techniques which address reshaping and cleaning the data, multicollinearity, handling missing data and loss to follow up are necessary. Knowledge of the best practices on managing and analysing longitudinal data is pivotal to obtaining accurate results. This work utilizes a longitudinal data, known as the Vulnerable Windows Study (VWS), which involves collecting data prospectively on a Jamaican cohort from birth to current age. VWS consists of three longitudinal processes: maternal longitudinal process, in utero measurements and children's measurements from birth to present age. The main goal of the study is to examine whether early life determinants such as in utero and birth measurements predicts the future cardiovascular health of the children. Another goal is to show the data processing steps which involve cleaning, managing and analysing this multifaceted longitudinal data. The data has over 12,000 observations on over 81 variables on over 300 children. Analyses of the data utilized linear mixed models. The results indicate that what happens in utero has a stronger relationship than birth measurements at predicting systolic blood pressure over time. The results also indicate that the utilized data processing techniques are pivotal to the quality of the data and impact the analyses and results of the study significantly.

XIX. 'Overcoming Data Management Challenges Using *Stata.*'
Novie Younger-Coleman; Shelly McFarlane & Damian Francis

Serious challenges are encountered early in the data management process as we gather data in search of answers to important research questions. The reliability and, by extension, the statistical ethics of data analysis are dependent on robust controls and validation in data entry. Examples of such robust controls and validation are demonstrated in our data management using Stata software. Through use of Stata programming language, multiple pairs of data sets double-entered using other data-base management systems are merged, compared and edited. Stata is used to rename and modify, efficiently, more than 1000 variable names and display the observations that need correction when comparisons reveal discordance. Stata programming language is also used to modify the format of the variables in order that merging of files can be executed. We conclude that programming algorithms available in Stata software can be used to yield efficient modification of multiple variable names in large data sets, merge and compare data sets, as well as circumvent some data entry errors. These efforts produce clean data sets that can be used for valid statistical data analysis.

XX. 'Zero-Inflated Predictor Variables in Regression of Environment Variables on Obesity Indices: Secondary Analysis of the JHLS II.'
Colette Cunningham-Myrie; Novie Younger-Coleman & Katherine Theall

Aims & Objectives: This study investigated differences in the effects of environment variables when models include between zero-inflated forms versus the continuous form of these predictor variables in models of obesity indices in Jamaica.
Methods/Models Used: Data from 2529 geocoded 15-74-year-old participants in the Jamaica Health and Lifestyle Study 2008 (JHLS II) were subjected to multilevel modeling, using enumeration districts nested within parishes as sources of variation. Obesity-related outcomes included mean BMI, mean WC and obesity (defined as BMI $\geq$ 30 kg/m^2). Zero-inflated (dummy) environment variables were created when the proportion of zero-values for the quantitative measure exceeded 10%. Results of regression analysis using the quantitative versus the zero-inflated form of the environment variables were compared.
Results: Regression analysis revealed no significant relationship between the quantitative form of the environment variable and the obesity-related outcomes. In fully adjusted models, there was significant sex interaction ($p<0.05$) in the relationship between:
a) absence of supermarkets/km^2 and mean BMI;
b) absence of supermarkets/km^2 and mean WC; and
c) absence of supermarkets/1000 people/ED and mean WC.
There was significant socioeconomic status (SES) interaction ($p<0.05$) in both relationships between:
d) absence of supermarkets/1000 people/ED and mean BMI; and
e) absence of crimes/1000/ED/year and mean BMI,
but these relationships did not achieve statistical significance in fully adjusted models.
Conclusions: Zero-inflation in explanatory variables should not be ignored as it has implications for estimates of the effects of these variables on outcomes and the roles these findings may play in policy development.

XXI. 'An investigation of the Factors that contribute to the likelihood of recidivism in Jamaica: A cross-sectional study of Tower Street and Fort Augusta Correctional Centres.'
Patrico Tyrell; Georgia Mullings, Renee Reid, Shantol Brown & Donovan Palmer

The purpose of this study was to examine the factors that influence recidivism in Jamaica. The specific objectives of the study were to highlight factors influencing the re-entry of offenders into Tower Street and Fort Augusta adult correctional facilities. The study adopted a cross-sectional design where the target population comprised of 1,207 offenders from which 418 were sampled, with 277 from the Tower Street Adult Correctional Centre for males and 141 from the Fort Augusta Adult Correctional Centre for females. Chi Square analysis and a Logistic Regression model were used to determine the extent to which socio-demographic factors and the type of crime committed influence the likelihood of an offender reoffending. The study confirmed that factors such as gender, age and type of crime committed are significant predictors of recidivism while place of residency was found to be insignificant. Specifically, males are more likely to re-offend when compared to females as well as older offenders are more likely to reoffend when compared with younger offenders. The researcher also found out that persons who commit violent crimes were less likely to reoffend when compared with persons who commit non-violent crimes.

XXII. Evaluation of Summer Employment Worker: Analysis of ratings
Mikhael Donaldson, Novie Younger-Coleman, Shelly McFarlane, Damian Francis

Background: In order to improve workplace performance, employee evaluations are done periodically, usually yearly, in order to keep employees and employers apprised of areas that may require improvement or that should be maintained. This body of work features analysis of data to identify gaps in the work ethic of summer interns.
Methodology: Questionnaire data collected from supervisors performing evaluation of 2017 summer employees was converted to EpiData and then SPSS data files. Scores were created from the categorical ratings. Descriptive analysis provided frequency distributions within and across categories defined by departments, supervisor level and job title. Fisher's exact and Kruskall Wallis tests were used to compare categorical and quantitative data, respectively, across these groups.
Results: Of the 13 employees 46.15% (6) were placed in 'ERU', 15.38% (2) in TMRU and 38.46% (5) in the FMS Offices. Some 82% (9) of the interns had overall rating of "Good' and 18% (2) "Excellent". Mean scores for work performance and attitude ranged from 2.8 and 2.6 respectively to 4. The distribution of the overall rating was the same for all reviewer, supervisor level, and department categories. The distribution of the scores for work performance and attitude did not differ significantly when the groups were compared.
Conclusion: Most interns received an overall rating of "good" and the distribution of scores when the groups were compared did not differ significantly.

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