STUDENT SUMMER RESEARCH 2015

MAY 27TH 2015

RCSI DEVELOPING HEALTHCARE LEADERS WHO MAKE A DIFFERENCE WORLDWIDE
Programme

• Welcome
  – Dr. Paul O’Farrell

• Opening remarks
  – Prof. Davinder Sandhu

• RCSI Bahrain Research Committee and the summer research programme
  – Dr. Paul O’Farrell

• Laboratory research at RCSI Bahrain
  – Dr. Michael Keogh

• Tips for data collection
  – Dr. Hussain Ali Nasaif

• A word about Ethics
  – Dr. David Misselbrook

• Closing and Q&A
Opening remarks

Prof. Davinder Sandhu
Head of School of Postgraduate Studies and Research
RCSI Bahrain Research Committee and the RCSI Bahrain summer research programme

Dr. Paul O’Farrell
Senior Lecturer in Biochemistry
Chair, Research Committee
Why Undergraduate Research?

- Career development
- Develops research skills
  - Write a grant
  - Ethics application
  - Technical laboratory skills
  - Record keeping
  - Communication skills
  - Data analysis, statistics, data presentation
- Fosters innovative thinking
- Understand the literature, how to read and critique it
- Appreciate the role of research in healthcare
- Student publications
- Helps staff to pilot new projects
RCSI Bahrain Research Committee
remit

1.1. General
To encourage research within the University and oversee research activity.

1.2. Specific
• Oversee structures and procedures aimed at promoting world-class research at RCSI-
MUB
• Oversee disbursement of funds for research equipment, research projects, attendance at conferences and research collaborations.
• Encourage student research, oversee student applications for summer research grants
• Publicize RCSI Bahrain research through research days, communications and
• Prepare an annual report.
• Prepare an annual research budget
Ongoing Research at RCSi Bahrain
# Main Grants Awarded 2014 - 2016

<table>
<thead>
<tr>
<th>Principal Investigator(s)</th>
<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tim Doubell</td>
<td>An Investigation of Stimulus Specific Adaptation and Novelty Detection in Sound Evoked Muscle Reflexes</td>
</tr>
<tr>
<td>Robin O'Sullivan; Ameera Radhi</td>
<td>A Quantitative Study of Hunter-Schreger Bands in the Tooth Enamel of Camelus dromedarius</td>
</tr>
<tr>
<td>Michael B. Keogh; Amos Matsiko; Khalifa Elmusharaf; Fergal J. O'Brien</td>
<td>Adipose derived stem cells: tissue engineering and clinical applications in the middle east</td>
</tr>
<tr>
<td>Fryad Henari ; Seamas Cassidy</td>
<td>Development of a method for the estimation of glucose levels in solution based on nanoparticle assisted silver mirror test using the Z scan technique.</td>
</tr>
<tr>
<td>Paul O'Farrell ; Salim Fredericks</td>
<td>Genetic polymorphisms associated with sickle cell disease in the Bahraini population and their association with foetal haemoglobin, inflammation, and clinical outcomes</td>
</tr>
<tr>
<td>Fiza Rashid-Doubell; Seamas Cassidy; Fryad Henari</td>
<td>Exploring the effects of increasing bioavailability and photostability of curcumin derivatives on breast cancer cells</td>
</tr>
</tbody>
</table>

**Total amount awarded : BD 35,730**

**Additional : Capital Requisition - BD 6,512 (fluorimeter, F. Henari)**
# Main Grants Awarded 2013 - 2015

<table>
<thead>
<tr>
<th>Principal Investigator(s)</th>
<th>Project Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Azra Mahmud</td>
<td>Relationship between objective measures of life style including physical activity, sleep duration and dietary profile with arterial stiffness, wave reflection and aortic blood pressures in a healthy Bahraini population</td>
</tr>
<tr>
<td>Aneta Hayes, Edwina Brennan et al.</td>
<td>Describing Thoughts Can Tell Us Lots : A Pilot Study into How English Language Learners Solve Problems in Science</td>
</tr>
<tr>
<td>Claire Donnellan et al.</td>
<td>Cognitive impairment including metacognitive function and associated correlates in stroke patients and age-matched healthy volunteers</td>
</tr>
<tr>
<td>Edwina Brennan</td>
<td>5-ALA and MAL: in vitro effects as photosensitising agents for antimicrobial photodynamic inactivation of opportunistic fungi.</td>
</tr>
<tr>
<td>Eman A. Tawash</td>
<td>Nursing as a career choice in Bahrain</td>
</tr>
<tr>
<td>Michael Keogh, Khalifa Elmusharaf</td>
<td>Community acceptable approaches for safe clean drinking water</td>
</tr>
<tr>
<td>Fatima Al Hannan, Latifa Al Buainain</td>
<td>BRCA1 and BRCA2 mutations in breast cancer patients from Bahrain</td>
</tr>
</tbody>
</table>
Research This Summer
## Summer research projects

<table>
<thead>
<tr>
<th>Principal Investigator</th>
<th>students</th>
<th>project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tim Doubell</td>
<td>Abubaker Jadalla; Ali Alsetrawi; Ahmed Mahmood Daibes</td>
<td>Measuring the posterior auricular muscle response to different binaural acoustic stimuli</td>
</tr>
<tr>
<td>Edwina Brennan</td>
<td>Sayed Mohamed Jawad Moosa Jawad Alwedaie; Mohamed Qasim Toorani</td>
<td>5-ALA: in vitro effects as photosensitising agents for antimicrobial photodynamic inactivation of opportunistic fungi.</td>
</tr>
<tr>
<td>Fatima al Hannan</td>
<td>Batool Almosawi; Fatema Ahmed Hamza Ahmed Ali</td>
<td>Identifying BRCA mutations in breast cancer patients in Bahrain</td>
</tr>
<tr>
<td>Khalifa El Musharif</td>
<td>Diandra Bastawrous; Madona Bastawrous</td>
<td>Bahrain Health system response to non-communicable diseases</td>
</tr>
<tr>
<td>Husain Ali Nasaaif</td>
<td>Maryam Abdulla; Noora Munther; Zainab Jaffer; Walaa Alhameedi</td>
<td>Men’s awareness of Prostate Cancer</td>
</tr>
<tr>
<td>Orla Merrigan</td>
<td>Sajida A. Ali Salman Ali; Amnah A. Ali Salman Ali</td>
<td>What is the knowledge of healthcare professionals about risk assessment tools for patients at risk of diabetic foot ulcers in primary health centers in Bahrain?</td>
</tr>
<tr>
<td>Salim Fredericks</td>
<td>Manal Zainaldeen; Nebras Ebrahim; Fatema AlMadhoob; Manaf Yusuf</td>
<td>Evaluation of the knowledge and practice of lactose intolerance among undergraduate students at RCSI-BAHRAIN</td>
</tr>
<tr>
<td>Frank Cunningham</td>
<td>Maan Abdulrahman; Rand Abdulrahman</td>
<td>Pre-operative Antibiotic Colon Preparation: A survey of general colorectal surgeons practice in Bahrain</td>
</tr>
<tr>
<td>Ali Ebrahim</td>
<td>Moeen Aboabdo</td>
<td>Needle stick injuries and compliance among doctors and nurses</td>
</tr>
<tr>
<td>Principal Investigator</td>
<td>students</td>
<td>project</td>
</tr>
<tr>
<td>-----------------------</td>
<td>----------</td>
<td>---------</td>
</tr>
<tr>
<td>Hana Kadom</td>
<td>Hala Fathi Suliman; Hooriya Jaffer Mahdi; Huda Sayed Ali Sharaf; Ayman Abduljalil Abdullah Ahmed Almuqamam; Jaydeep Justin Singh Johal</td>
<td>Assessment of knowledge and attitudes to cervical cancer screening amongst trainee healthcare professionals in RCSI-Bahrain</td>
</tr>
<tr>
<td>Fryad Henari</td>
<td>Zahraa Abdulla Isa; Basil Othman; Abraham Kayal</td>
<td>The interaction of nanoparticles with red blood cells</td>
</tr>
<tr>
<td>Fryad Henari</td>
<td>Ferial Al Issa; Karthikaikumar Sivakumar</td>
<td>Comparison of Lung Capacity in Smokers Versus Non-Smokers within the age group 18-25.</td>
</tr>
<tr>
<td>Seamas Cassidy</td>
<td>Maryam Alzeerea</td>
<td>Synthesis of Curcumin Conjugates with Acetal, Mannitol, and Silver Nanoparticles</td>
</tr>
<tr>
<td>Seamas Cassidy</td>
<td>Aieshah Ismael</td>
<td>Synthesis of β-methylglycopyranoacid</td>
</tr>
<tr>
<td>Seamas Cassidy</td>
<td>Maryam Jameel Ahmed Naser</td>
<td>Synthesis of metal complexes of 1.7-Bis-[3-methoxyphenyl]-1,6-heptadiene-3,5-dione</td>
</tr>
<tr>
<td>Maryam AlAradi</td>
<td>Melanie Garrett; Ayman Abduljail Almuqamam; Amna Al-Muhandes; Manpreet Kaur Dadwal; Zainab Abdul Aziz Al-Ismail; Hana Ali Jaafar Mohamed Almoosawi</td>
<td>Awareness of Testicular Cancer and Testicular self-examination among men in Bahrain</td>
</tr>
<tr>
<td>Ghufran Jassim</td>
<td>Ali Aqeel AlModawab; Zahraa Ali Mansoor</td>
<td>What Causes premature birth in Bahrain?</td>
</tr>
</tbody>
</table>
Summer research projects 2015 overview

• 17 projects
• 15 Principal investigators
• 43 Students

• Research Areas: Chemistry, biochemistry, physiology, health systems, public awareness of health issues etc
RCSI Bahrain Summer Research Programme

• Under development

• Research Programme provides
  • Organization
  • Funding
  • Research ideas/projects
  • Academic support and guidance

• Developing cooperation with Dublin research Summer School
Dublin RSS Programme

Skills Workshop Programme 2015

- An opening series of lectures and workshops looking at research methods, research design, interpreting results and some more detailed, specialized techniques
- Weekly meetings and workshops

- Materials from these activities will be uploaded to RCSI Bahrain VLE as they become available

What do you need to do?

1. Do the research!

2. Provide a final report on each project to include any research findings and a budget statement. This report should be forwarded to the chair of the research committee no later than February 31, 2016 (but earlier is better!)

3. Students are required to present - either a poster or oral presentation - at RCSi Bahrain research day 2015. (late October/early November). Details of how to submit your abstract will be released in the near future.
Publication?

- Consider publishing your work – great for your CV!

- You must acknowledge to support of the RCSI Bahrain Research Committee in any publication

- (the decision on if, when and where to publish lies with the Principal Investigator)

Good Luck!
Laboratory Research

Dr. Michael Keogh
Lecturer in Human Biology
Research Laboratory Manager
MULTIPURPOSE LABORATORY

Biology
- microbiology
- cell culture
- molecular analysis (DNA, RNA, Protein)
- microscopy & chemical staining

Chemistry
- Chromatography
- rotatory evaporation
- fluorescence

Physics:
Non-linear optical lasers
Fluorometry
Research Lab

- Manager
- Technician
- PI's
- Nominated personnel

Research lab technician: Ms Fatima al Hannan
LAB SAFETY INDUCTION AND RULES

- Induction day
  - Lab safety induction manual
- Housekeeping: PPE, waste disposal, fume hoods, sharps...
- Good lab practice GLP
- Access/egress
- MSDS
- Risk assessment
- Emergency: First aid and fire safety procedures
- Sign off
Dr. Hussain Ali Nasaif
Lecturer in Nursing
Convener, Research Committee
Tips For Data Collection

Husain Nasaif, RN, MSN, CANP, Doctor of Nursing Practice

Date: May 27th 2015
Research Process

1. The Problem
2. The Methodology
3. Data Gathering
4. Data Analysis
5. Report Writing

ELEMENTS OF A RESEARCH DESIGN

Husain A. Nasaif, School of Nursing & Midwifery
Data Collection Procedure

- Methods of selecting the participants
- Procedure of data collection
- Methods of collecting the data
- Study settings
Data Collection Procedure

- Always go back to the aim of the study and research questions
Sampling Criteria

- Sampling criteria determine the target population
- Need to be considered when recruiting participants
Selecting Participants (Sampling Plan)

- Probability (Random) sampling methods
- Non-Probability sampling methods
  - Convenience
  - Quota
  - Purposive
Methods of data collection

- Questionnaires (Survey)
- Interview
  - Structured interview
  - Unstructured interview
Questionnaire

- It is a printed self-report form designed to elicit information that can be obtained through the written responses of the subject (Burn, 2005)
Questionnaire

- Reliability & validity
- Subject’s language
- Modification of questionnaire
- Length of questionnaire & time
- Type of questions
  - Demographic
  - Open versus close ended
Questionnaire

Factors effect response rate

- Length of the questionnaire (Time)
- Distribution time
- Missing information in the cover letter
- Clarity of the questionnaire
Interview

- Verbal communication between researchers and subjects

Structure interview

- Asking the same questions to all subjects
- Used when factual information is needed
Tips for Interview

- Training for Interviewers
- Need to take an appointment
- Settings & quite place
- Privacy
- Instruction about the study
- Recording (audiotapes)
Study Setting

- Training for Interviewers
- Make a visit
- Equipment
- Peak time
- Permission
- Using roll up stand
- Leaflet of information
Study Setting

Husain A. Nasaif, School of Nursing & Midwifery
Study Setting

Aims:
To assess public knowledge and levels of awareness of risk factors and early symptoms of Colorectal Cancer in the kingdom of Bahrain.

Target Population:
The study targets individual both citizens and residents living in Bahrain, those aged 25 years and above.

The findings from this study will inform the development of a National Health strategies to increase public knowledge and Colorectal Cancer and its early detection.

Your participation will make a difference.

Public Knowledge and Awareness of Risk Factors for Colorectal Cancer Among general population in Bahrain

How much do you know about Colorectal Cancer?

Aims:
To assess public knowledge and levels of awareness of risk factors and early symptoms of Colorectal Cancer in the kingdom of Bahrain.

Target Population:
The study targets individual both citizens and residents living in Bahrain, those aged 25 years and above.

The findings from this study will inform the development of a National Health strategies to increase public knowledge and Colorectal Cancer and its early detection.

Your participation will make a difference.
A word about Ethics

Dr. David Misselbrook
Senior Lecturer in Family Medicine
Convener, Research Ethics Committee
Closing and Q&A