



Monday, March 25, 2024



جامعة حائل - كلية الطب

University of Ha'il –College of Medicine

وكالة كلية الطب

وحدة البحوث

Research Skill Development

### **Biomedi-Informatics and Clinical Statistics initiatives**

The Research Unit in the College of Medicine, University of Ha'il, strives to provide the best in the development of an ideal infra-structure that hosts all types of knowledge transfer programs, skill development programs, Conferences, symposiums, training, and workshops. The following is an initiative that introduces Bioinformatics and Biomed-Informatics initiative. This course fulfils a short-term objective as part of an ambitious long-term initiative introduced by the Research Unit. The long-term plan is to eventually establish a fully accredited graduate program on "Bioinformatics and Biomed-Informatics". These efforts are intended to develop skills and expose faculty members to different types of user-friendly research approaches that would ensure high quality productivities including publications. At present, The Clinical Biostats course is a pilot program that starts early with a series of structured courses over a few weeks' time. The long-term plans of these initiatives are all under final stages of development pending endorsements, clearances, and acquisition of a few more computational programs. They include but not limited to the following disciplines described here.

Dr Ahmed Aljadani, VD College of Medicine Dr Kamaleldin B Said, Chair, Research Unit

## **INTRODUCTION:**

In the College of Medicine (COM), University of Ha'il (UoH) there are presently over 500 students registered full time and around a hundred faculty are full time members, many of them conduct research in different areas of interests contributing to the overall outcome. Ha'il College of Medicine's Vice-Deanship is administered and lead by Dr Ahmed H Aljadani (MD-Psychiatrics). The Research Unit is the and a research-intensive hub in the college, led by Dr Kamaleldin B Said. Over the past few years, the Unit introduced several initiatives and current strategic plans for faculty skill development and high-quality research productivity. In-line with the COM strategic planning, the UoH research theme, and Saudi-2023 plan, the Unit develops outstanding research strategies, establishes timely research priorities encompassing. One of the most crucial operating plans of the unit is to initiate and conduct faculty research skill development activities on college campus; these are in the form of lectures, seminars, courses, and workshops. The major content of these activities include conceptualization, manuscript writing, referencing, individual assistance, journal choice, and publication. Awareness activities include provision of funding opportunities, UoH seminars, ads on lectures and activities on and off-UoH campus. Particular emphasis is placed on the awareness of quality research for several reasons; a one of the major emphasis made by the UoH; research plays a major role in the ranking of academic institutions, faculty promotions, and national development for promoting both the quality of health and wealth of Saudi population. The following pages entail the different types of activities carried out by the by the Research unit.

### **Bioinformatics and Biomed-Informatics initiative**

#### **About the course:**

This course fulfils a short-term objective as part of an ambitious long-term initiative introduced by the Research Unit. The long-term plan is to eventually establish a fully accredited graduate program on "Bioinformatics and Biomed-Informatics". These efforts are intended to develop skills and expose faculty member to different types of user-friendly research approaches that would ensure high quality publications. At present, The Clinical Biostats course is a pilot program that starts early with series of structured courses over a few weeks time. The long-term plans of these initiatives are all under final stages of development pending endorsements, clearances, and acquisition of a few more computational programs. They include but not limited to the following disciplines:

**Bioinformatics:** initially using different sets of software packages primarily window-based programs for diverse applications. This will include comparative genomic analysis, theoretical typing, phylogenetic rooting, modeling and predictions, molecular mimicry, drug discovery, and vaccine candidate identifications.

**Biomedical Informatics:** using series of statistical analysis of healthcare information to identify trends and improve healthcare problems and decision-making. This will also include some specialized applications routinely used in healthcare setting.

- Using electronic health records (HER) data to identify patients who are at risk for certain diseases.
- Developing computerized clinical decision support systems, or (CDSS), to help clinicians make better decisions about patient care.
- Clinical decision support (CDS) tools are a potential solution because they provide patient-specific risk assessments and/or management recommendations. This approach is primarily for nongeneticists physicians for patient care involving genetics is challenging for them.
- Using data mining to identify new patterns of disease.

**New potentials of artificial intelligence to improve patient safety:** these apps would

#### **A. Skill development Activities: courses, lectures, workshops, ...etc**

##### **a. Biostatistics course**

الفقره (2) الثانية من نشاطات الهدف الأول (1) من أهداف الخطة التشغيلية لوحدة البحوث بكلية الطب لعام 2023-2022

إقامة دورة تدريبية حول مهارات الإحصاء هي الفقره (2) الثانية من نشاطات الهدف الأول من أهداف الخطة التشغيلية لوحدة البحوث بكلية الطب لعام 2023-2022 والذي ينص على تطوير مهارات البحوث العلمي لأعضاء هيئة التدريس. وعليه فقد قامت وحدة البحوث بإقامة هذه الدورة في 6 ست جلسات بكلية الطب شارك فيها عدد من أعضاء هيئة التدريس. توصيف ومخرجات ومتطلبات حيثيات وشهود الدورة كما موضح في التقرير.

#### **Basic Statistics - Course Description**

This course provides participants with an introduction to the basic concepts and methods of statistics, to help them to understand, interpret and apply basic statistical methods within academic research context. This course covers commonly used statistical inference methods for numerical and categorical data. Participants will learn how to set up and perform hypothesis tests, interpret p-values, and report the analysis results. Practical application activities in the course focus on how statistical software are used in the analysis of data in academic research context. The course is especially conceived for participants who are not professional mathematicians – all the statistical procedures are presented in a simple form, avoiding complex mathematical formulas as much as

possible. The course material is designed for researchers in medical education and health research, examples and projects are all relevant to medical education and health research.

### Learning Outcomes

**By the end of this course the participant should be able to:**

1. Describe a data set including both categorical and quantitative variables to support or refute a statement;
2. Perform statistical inference in several circumstances and interpret the results in an applied context;
3. Use a statistical software package for computations with data;
4. Select an appropriate statistical method for the analysis of simple data sets and perform simple statistical analyses using SPSS;
5. Interpret and present the results of statistical analyses in appropriate displays, summaries, and tables of data.

### Requirements

1. Laptop;
2. SPSS (version 21 or newer recommended).

### Course Cap and mode of delivery

The maximum number of participants who can register for this course is 10 participants.

Course sessions will be held in a meeting room in the College of Medicine.

### Syllabus

This course consists of 6 two-hour sessions. In each session basic statistical concepts will be introduced followed by practical session on SPSS.

	Statistics	SPSS
Session 1	Types of data Data representation	Data Entry. The date file The Data View Spreadsheet. The Variable View Spreadsheet. The output file Manipulating Data in SPSS. Sorting Data Using Functions
Session 2	Descriptive Statistics: location and Variability Descriptive Statistics for numerical variables Frequencies and cross tabulation	Obtaining Descriptive Statistics
Session 3	Principles of statistical inference Point and interval estimation	Graphical Displays and the Chart Editor
Session 4	Hypothesis test for comparison of numerical variables. Test on the difference between two group means Test on differences between more than two group means	Project
Session 5	Comparison of proportions Association between two categorical variables	Project

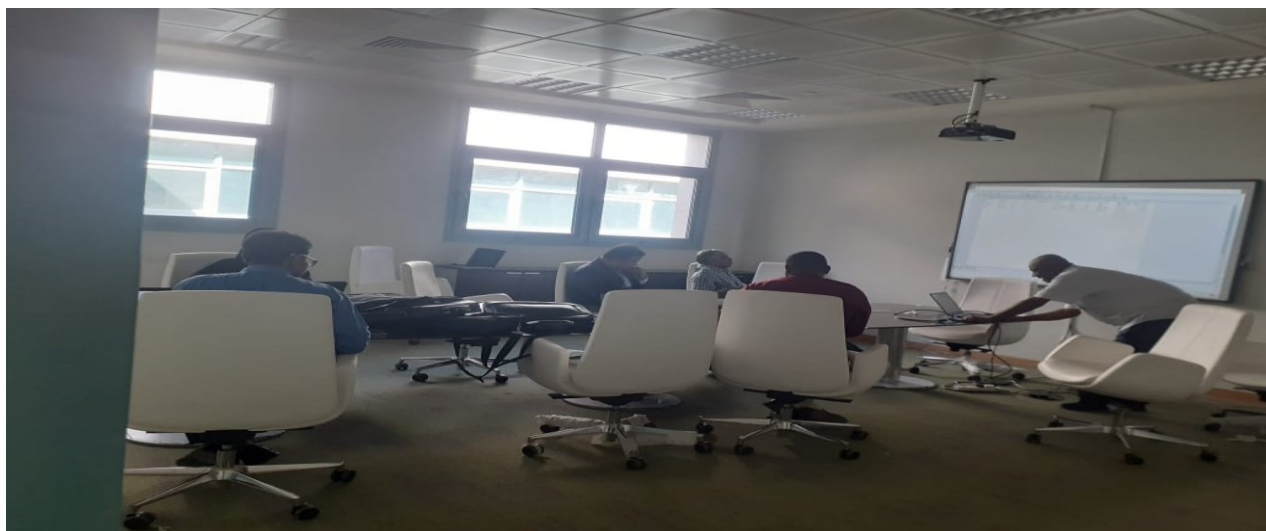
Session 6	Correlation and linear regression	Project
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**Event proceedings: Class-room images: Female class**





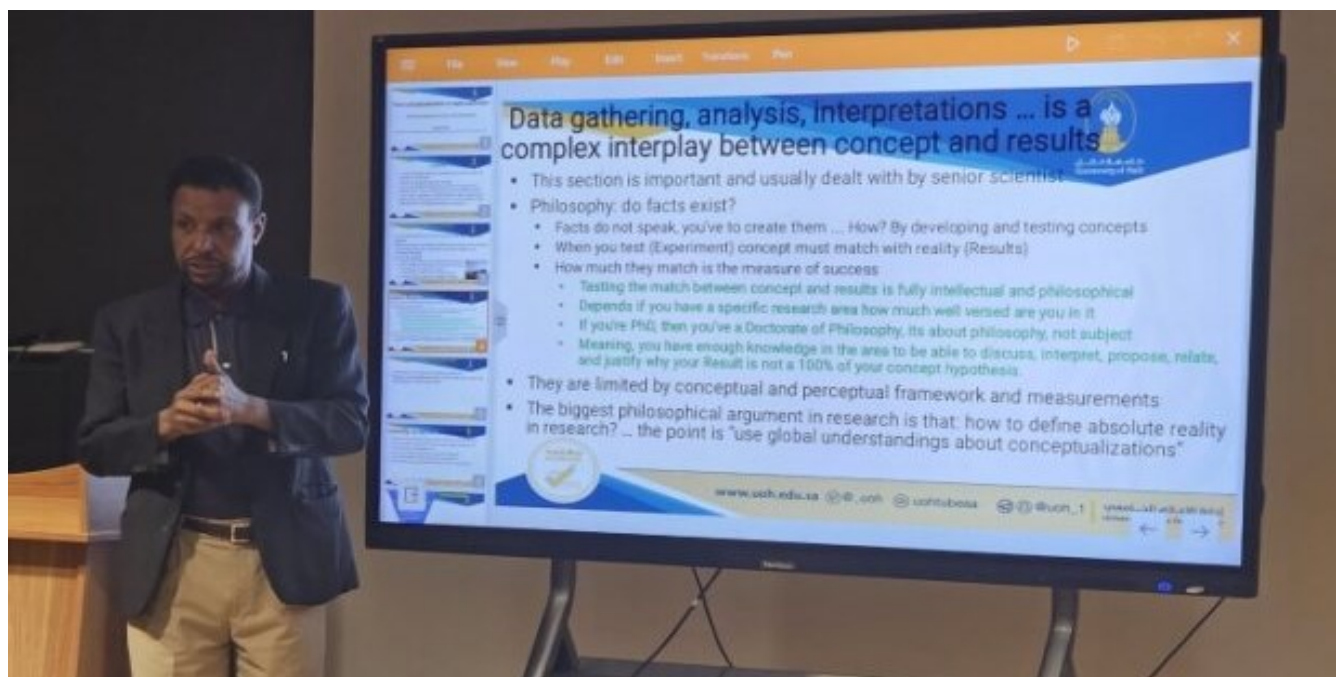




### Participants, instructor and coordinator lists:

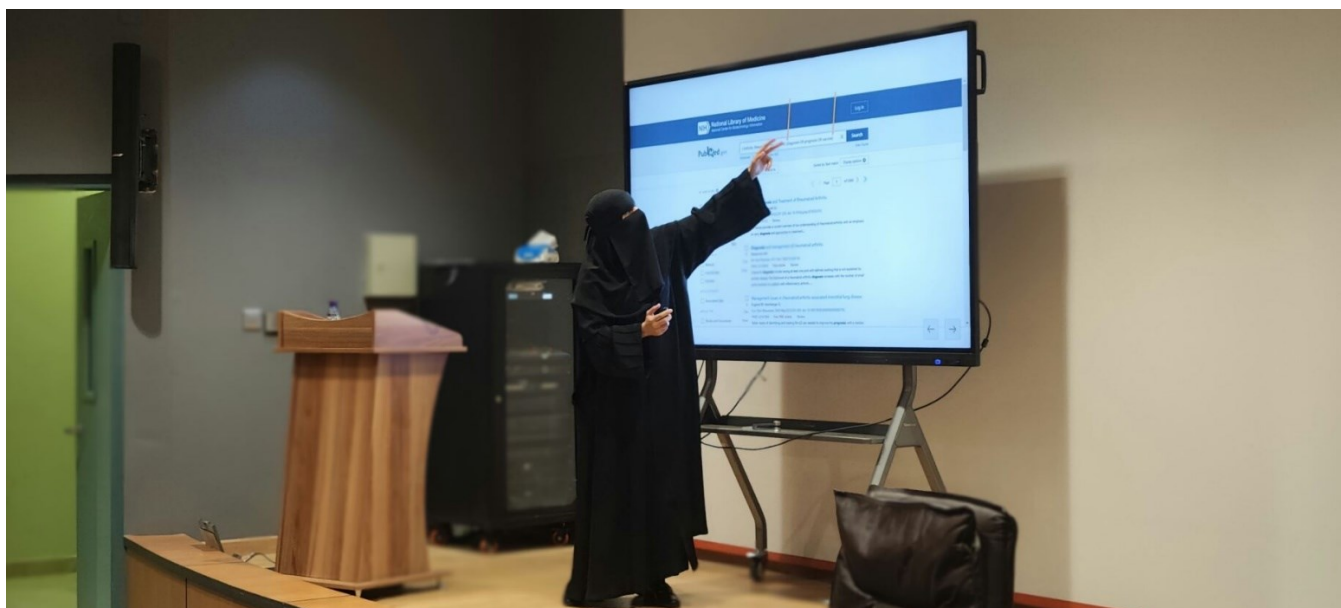
Female Class	Male Class
1. Dr Kamal	Dr Kamal
2. Dr Hafiz	Dr Hafiz
3. Dr Mohamed Alharbi	Dr Anas
4. Dr Ameerah	Dr Abdulaziz
5. Dr Amel Dahir	Prof Abrar
6. Dr Fahmida	Dr Adnan
7. Dr Naveed Iqbal	Dr Fatih
8. Dr Nuha	Dr malik
9. Dr Nuzuha	Dr Gamal
10. Dr Rania	Dr Yusuf Khan
11. Dr Ruba	Dr Azhar
12. Dr Sadaf	Prof Saad
13. Dr Suha	Dr Ahmed Unaizan
14. Prof Madiha	
15. Dr Amani	

**Skill development activities; courses, lectures, and workshops Lecture: “From conceptualization to Rapid Publication” by Dr Kamal Said**





**Skill development activities; courses, lectures, and workshops:**  
**=Literature review and reference management software Delivered by Dr Hind Alquwai**



## **Major Unit Annual activities:**

### **2<sup>nd</sup> College of Medicine Research Day Symposium**

#### **Community Involvement and Research Marketing Programs of the unit**

- A. Coordination, supervision, and mentoring of talent high students from the Ministry of Education

Based on the Deans letter number 34960 dated 11/6/1441 (with 6 item attachment) and that appoints Dr Kamal as a coordinator and contact person for Future Scientists program. We have been training students seasonally for national and international competitions including the Olympic participation of the latest batch.


2022 Olympic students lecture series participants from the College of Medicine were:

**Prof Kuddus**

**Dr Kamal**

**Dr Adnan**

Research Supervisors and mentors from the College of Medicine were: Molecular Medicine and Neuroscience were: Dr Walid Alesayfeer and Dr Kamal Said

الكلية : كلية الطب - جامعة حائل	
عنوان التقرير عن المحاضرة	ندوة اللغة العربية: هوية ومواطنة
اسم الملقى	قدمها د. خالد الفريدي وأدار اللقاء د. أحمد الجدعاني
المكان والتاريخ	مسرح كلية الطب - جامعة حائل الثلاثاء الموافق ١٣ فبراير ٢٠٢٤م
الفئة المستهدفة	من أعضاء هيئة التدريس، الإداريين، والطلبة
أهداف ومحاور المحاضرة	العديد من المحاور الهامة المتعلقة باللغة العربية، حيث بُحثت أهميتها ودورها الفعّال في تشكيل الهوية الثقافية والوطنية للمتحدثين بها. كما تناولت الندوة تاريخ اللغة العربية العريق وتأثيرها في الحضارة الإنسانية، مسلطة الضوء على كيفية إسهامها في تعزيز المواطنة. عقب العرض التقديمي، انتقل الحوار إلى جلسة أسئلة ومداخلات حيث تفاعل الحضور بشكل إيجابي مع الضيف ومدير الجلسة، مطرحين أسئلة تنوعت بين التحديات التي تواجه اللغة العربية في عصر العولمة، والاستراتيجيات المطلوبة للحفاظ على زخمها كلغة حية تساهم في التقدم الثقافي والعلمي.
الأدلة والشواهد	الصور والنماذج والخطابات (مرفق)
معد التقرير	د. كمال الدين بشير سعيد محمد : مدير وحدة البحث العلمي جامعة حائل - كلية الطب
التوقيع	







### Medical Research Unit

#### Scientific Research Presentation Schedule (January 2024 – June 2024)

S.No	Date	Day	Time	Department	Speaker Name	Theme/Title
1	23/01/24	Tuesday	12.00	Family and Community Medicine	Prof Farida	
2	31/01/24	Wednesday	12.00	Physiology	Dr Hafiz	
3	6/2/24	Tuesday	12.00	Biochemistry	Dr Fahmida	
4	13/2/24	Tuesday	12.00	Surgery	Dr Anas	
5	5/3/24	Tuesday	12.00	Ophthalmology	Dr Nabeel	
6	17/4/24	Wednesday	12.00	Internal Medicine	Dr Nahala	
7	23/4/24	Tuesday	12.00	OBGY	Dr. Nuzhat	
8	7/5/23	Tuesday	12.00	Pathology	Dr. Kamal Eldin Bashir	



**College of Medicine**  
**Journal Club under Conference and Symposium Unit**  
**Vice Deanship of Clinical Affair**  
**Scientific Research Presentation Schedule (September 2023 – December 2023)**

Sl No	Date	Day	Time	Department	Speaker(s)	Theme/Title
1	04.10.2023	Wednesday	12.00 - 12.30 PM	Pediatrics	Dr. Hend Alkwai	Quality Indicators for the Process of Care in JIA
2	10.10.2023	Tuesday	12.00 - 12.30 PM	Family Medicine	Dr. Mubashir	Acne Vulgaris and Its Association with Dietary Habits at a Tertiary Care Hospital
3	25.10.2023	Wednesday	12.00 - 12.30 PM	Biochemistry	Dr. Adnan	Effects of polyherbal extract on diabetic nephropathy
4	14.11.2023	Tuesday	12.00 - 12.30 PM	Surgery	Dr. Fauwaz / Prof. Saadeldin	Pilonidal sinus disease
5	29.11.2023	Wednesday	12.00 - 12.30 PM	Pharmacology	Prof Madiha	Harmful and beneficial medicinal herbs
6	12.12.2023	Tuesday	12.00 - 12.30 PM	Internal Medicine	Dr. Mohammed Alharbi	Updated guidelines in CVD for diabetic patient
7	27.12.2023	Wednesday	12.00 - 12.30 PM	Otolaryngology	Dr. Abdullah	Body Mass Index and Related Risk Factor of Sinusitis Among Adults in Saudi Arabia: A Cross-Sectional Study