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Report

The First Arab Forensic Sciences & Forensic Medicine Meeting 2014: Meeting Report

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The First Arab Forensic Science & Forensic Medicine Meeting 2014 was held in Riyadh (October 26-28, 2014) at Naif Arab University for Security Sciences (NAUSS), Riyadh, Kingdom of Saudi Arabia. This event of great scientific importance was organized under the patronage of NAUSS by the Arab Society for Forensic Sciences and Forensic Medicine (ASFSFM) and in cooperation with the College of Forensic Sciences (NAUSS). This was the second international event organized by the Arab Society for Forensic Sciences and Forensic Medicine during 2014.

This regional event brought together 144 forensic scientists, forensic medicine specialists, jurists, criminologists, DNA specialists and forensic toxicologists from 13 different Arab countries (Hashemite Kingdom of Jordan, United Arab Emirates, Kingdom of Bahrain, Republic of Algeria, Kingdom of Saudi Arabia, Republic of Sudan, Sultanate of Oman, Qatar, Kuwait, Republic of Lebanon, Egypt, Kingdom of Morocco, and Republic of Yemen) to present and discuss their latest achievements and research findings in various disciplines of forensic sciences.

Key words: The First Arab Forensic Sciences & Forensic Medicine Meeting 2014

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Production and hosting by NAUSS

Scientific Committee for the First Arab Forensic Sciences & Forensic Medicine Meeting 2014

- Dr. Mohammed Ali Al Saad, Dean, College of Forensic Sciences, NAUSS, Riyadh, Kingdom of Saudi Arabia.
- Prof. Ahmed Mahmoud Alajlouni, Visiting Professor at King Saud bin Abdulaziz University for Health Sciences, Riyadh, Kingdom of Saudi Arabia.
- Dr. Moamen Soliman Alhadidi, Head of the Forensic Research Association, Jordan.
- Dr. Abdulsalam Ahmed Bakdash, Secretary General, the Arab Society for Forensic Sciences and Forensic Medicine, Naif Arab University for Security Sciences, Riyadh, Kingdom of Saudi Arabia.
- Dr. Abdulwali Mohammed Ajlouni, Vice Dean, College of Forensic Sciences, NAUSS, Kingdom of Saudi Arabia.
- Dr. Mohammed Abdullah Al Tufaill, Director of Medicines and Herbs Analysis, King Faisal Specialist Hospital, Riyadh, Kingdom of Saudi Arabia.
- Col. Burmana Sayed Ahmed, Director General of the National Institute of Forensic Science and Criminology of National Gendarmerie, Algeria.
- Dr. Ahmed Ibrahim Alyahya, Head of the Department of Forensic Sciences, King Fahd Security College, Riyadh, Kingdom of Saudi Arabia
- Prof. Shirin Salah Ghalib, Professor of Forensic Medicine and Clinical Toxicology, University of Cairo, Egypt.
- Dr. Saad bin Nayef Daihani, Expert in Forensic Sciences, General Department of Criminal Investigation, Public Security, Kingdom of Saudi Arabia.
- Prof. Dena Ali Shukri, Department of Forensic

Medicine and Toxicology, Faculty of Medicine, Cairo University, Egypt.
- Prof. Raja Mohammad Mohammadi, Faculty Member, Faculty of Medicine, Assiut University, Egypt.

His Excellency, the President of Naif Arab University for Security Sciences (NAUSS) and President of the Arab Society for Forensic Sciences & Forensic Medicine (ASFSFM) Dr.Jamaan Rashid ben Ragosh chaired the First Arab Forensic Sciences and Forensic Medicine Meeting 2014. During his opening speech, His Excellency Dr. Jamaan highlighted the following key objectives of this scientific event of great academic importance:

- To bring together the Arab world's leading forensic scientists and catalyze academic and professional collaboration for the purpose of improving the quality of forensic science practice, education and research in the region.
- To strengthen the relationship between the ASFSFM and relevant scientific bodies, both regionally and internationally, in various fields of forensic science and forensic medicine and to launch cohesive efforts against crime, terrorism, and weapons of mass destruction.
- To explore the latest developments and the most recent research findings in various fields of forensic science and design strategies for their practical application to improve the quality of forensic investigation work and justice in the Arab world.
- To analyze the current state of knowledge and research in the field of forensic sciences in Arab countries and identify the educational, training, and technical needs to achieve international recognition and accreditation.

In his concluding remarks, His Excellency Dr. Jamaan Rashid ben Ragosh reaffirmed NAUSS's commitment to extend full moral and technical support to the ASFSFM for the cause of peace, security, and justice in the Arab world.

Paper Presentation

Abstracts of papers and posters that are presented at annual scientific meetings play a vital role in the timely dissemination of scientific knowledge across the scientific community. They offer an important avenue for the dissemination of current research data. Eleven scientific papers covering various topics in forensic sciences and forensic medicine were presented during the First Arab Forensic Science and Forensic Medicine Meeting 2014. Below is the list of speakers who presented their work at this scientific meeting:

Speakers

- Dr. Mohammed Ali Al Saad, Dean, College of Forensic Sciences, NAUSS, Kingdom of Saudi Arabia.
- Prof. Ahmed Mahmoud Alajlouni, Visiting Faculty at King Saud bin Abdulaziz University for Health Sciences, Riyadh, Kingdom of Saudi Arabia.
- Dr. Moamen Soliman Alhadidi, Head of the Forensic Research Association, Jordan.
- Dr. Abdulsalam Ahmed Bakdash, Secretary General, the Arab Society for Forensic Sciences and Forensic Medicine, Naif Arab University for Security Sciences, Riyadh, Saudi Arabia.
- Dr. Abdulwali Mohammed Ajlouni, Vice Dean, College of Forensic Sciences, NAUSS, Riyadh, Kingdom of Saudi Arabia.
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- Prof. Dena Ali Shukri, Professor of Forensic Medicine and Toxicology, Faculty of Medicine, Cairo University, Egypt.
- Prof. Raja Mohammad Mohammadi, Faculty of Medicine, Assiut University, Egypt.

Abstracts

The Prospective Role of the Arab Society for Forensic Sciences and Forensic Medicine (ASFSFM) in Improving Joint Arab Work in the Field of Forensic Sciences and Forensic Medicine

Dr. Abulsalam Bakdash, PhD
Mr. Abdul Rauf Chaudhry

The Arab Society for Forensic Sciences and Forensic Medicine (ASFSFM) was formed in order to create a scientific body which gathers all specialists in various fields of forensic science and forensic medicine and contributes to the progress of forensic science and forensic medicine in the Arab world. Its primary objective is the development of forensic work, and the enhancement of professionalism in forensic sciences and forensic medicine in Arab countries. The Society was founded in 2008 and is based at Naif Arab University for Security Sciences, Riyadh, Kingdom of Saudi Arabia. The ASFSFM officially began its activities in 2013 and members include specialists and experts in criminalistics and forensic medicine in both government and private sectors, in addition to academics and practitioners in relevant specializations from Arab

countries and other parts of the world.

The ASFSFM is working to achieve its vision of leadership and excellence in forensic science and forensic medicine at Arab and international levels. The ASFSFM is striving to complete its mission of forming a scientific body for all specialists in various areas of forensic sciences and leading joint scientific work for the development of forensic science practice, education and research in the Arab world. This is being done through the consolidation of scientific and intellectual links between members of the ASFSFM and by exchanging experience between the Society and individuals and institutions concerned with the development of forensic science, thereby enhancing the professionalism of personnel working in the fields of forensic science and forensic medicine in Arab countries.

The goals of the ASFSFM will be achieved through providing academic assistance to universities, colleges, institutes and organizations planning to develop programs and curricula in areas relevant to forensic sciences and forensic medicine; and through conferences, symposia and seminars.

The ASFSFM encourages scientific research and publishes and distributes the results of this research. It publishes a biannual scientific journal: ***the Arab Journal of Forensic Sciences and Forensic Medicine*** in order to enrich and develop scientific research in these areas. The ASFSFM promotes friendship and cooperation between scientists, institutions, and associations in the areas of forensic science and forensic medicine at regional and international levels. The ASFSFM also recognizes the scientific and professional achievements of Arab forensic scientists through certificates of recognition awards.

Quality Assurance in Forensic Laboratories and Forensic Medicine

Dr. Abdullah Mohammad Al-Tufail

Forensic examination results play an increasingly important role in bringing many criminal investigations to a successful conclusion. Therefore, it is of utmost importance to ensure and maintain the highest standards of accuracy during the forensic analysis of evidence. In recent years, there has been increased awareness of the importance of well documented quality assurance (QA) programs in forensic laboratories. Quality assurance is about doing the right things in the right way to obtain accurate and precise results and to provide reliable evidence for court proceedings.

Quality assurance is more than simply quality control; it extends to every aspect of the work of the laboratory from management organization to staff competencies and training, method development and validation, equipment operation and maintenance, reagent quality, proficiency testing, internal audits and external assessment and accreditation.

Teaching Forensic Sciences at Naif Arab University for Security Sciences

Dr. Mohammed Ali Al Saad

Forensic sciences offer great evidential value in the detection of crime and criminals. Naif Arab University for Security Sciences (NAUSS) is the only university in the Arab world that specializes in providing higher education and training in various disciplines of security sciences through Diploma, Master and PhD courses. The College of Forensic Sciences (CFS) constitutes one of the most important academic organs of the University. The CFS offers two master's degree programs specializing in Forensic Toxicology and Forensic DNA Analysis. In addition, the College provides training courses in different areas of forensic science along with a postgraduate diploma in different specializations of Criminalistics. This wide choice of courses serves to develop the academic and professional skills of forensic experts involved in the scientific detection and investigation of crime in Arab countries. The practical and applied aspects of these courses and programs also hold a great importance; the College has been supplied with the latest equipment and technology in its research laboratories to achieve perfection and excellence in the scientific investigation of crime. This helps to achieve the goals of the University and elevate its work in the field of forensic science in the context of the University's vision for achieving comprehensive security and justice in society. In this paper, the author has reviewed the teaching programs in forensic sciences offered by the CFS, in addition to describing the programs, courses, the most important academic and training achievements since its inception, and future plans.

Teaching Forensic Science at the Jordan University of Science and Technology

Prof. Ahmed Mohammed Alajlouny

Forensic Science is a modern discipline with a unique importance due to its tremendous services to the community and its applications in the detection of all types of crime and in the identification of criminals. It employs all available modern scientific methods, tools and technologies for the detection and investigation of crime, thereby supporting law and justice. Forensic sciences have undergone noticeable developments during recent years using complex technologies such as automated DNA analysis and sequencing, routine application of GC-LC-MS in forensic chemistry, laser technologies in evaluating impression evidence and many others. This necessitates the training of personnel to be qualified enough in meeting the required standards of laboratory analysis of physical evidence.

This paper will review instructional programs in forensic sciences offered at the Jordan University of Science and Technology. It will describe the program objectives, study plan, the courses required to pass, and other requirements for earning a Bachelor's Degree in Forensic Sciences. It

also highlights the most important academic and training achievements since the formation of the college and its future plans. Due to the importance of this specialized area of study, the Jordan University of Science and Technology took a pioneering step by introducing a Bachelor degree in Forensic Sciences in the College of Arts and Sciences in 2007. This program is the first and only in this specialization in Jordan, and is part of only a limited number of similar programs in the Middle East. We will also review the knowledge, skills, and practical experience expected of a graduate in this specialization.

Teaching Forensic Sciences at the National Institute of Forensic Sciences and Criminology for the National Gendarmerie, Algeria

Colonel Burmana Syed Ahmed

The proposed theme addresses the types of specializations in the field of forensic sciences at the National Institute of Forensic Sciences and Criminology for National Gendarmerie, Algeria. It includes the display of reasons for, and the importance of, specializations as a prerequisite to the requirements of standard quality management systems ISO17025 and ISO1720.

Given the different stages that precede laboratory analysis at the level of the institute, the institute has developed a strategy for the specializations of various personnel and those involved in the crime scene, as well as those who conduct various scientific analyses in order to ensure cooperation and coordination between them.

In this regard, it addresses the importance and types of training for personnel involved in crime scene investigation, as well as the judicial police director, Judge, coroner, and ambulance personnel. This serves the purpose of establishing a culture of forensic sciences, especially to preserve the crime scene and not to change or pollute it. We will address the specializations of experts in the management of the crime scene such as crime scene technicians and managers, traffic accident investigators, information and communication technology experts and environmentalists. With regard to the specializations of experts, we will explain the various stages of specialization after graduation in various disciplines of forensic science.

Determining Traces and Evidences of Crime: Legal Dimensions

Maj. Gen. Dr. Fahad Ibrahim Al-Dosari,
Dr. Ahmed Alyahya

Providing irrefutable evidence or proof of a crime to a court of law is the fundamental objective of crime investigation. Today, judicial and investigative bodies have adopted a number of means to establish criminal guilt. Physical traces and evidences left at the crime scene have become the strongest tools for establishing the guilt or innocence of a suspect. In this paper, the authors will address this type of evidence and its legal dimensions in relation to its different types and how these evidences are collected and presented before investigative bodies and the judiciary, and how they are used as a scientific tool to establish the commissioning of a crime.

This paper describes various types of physical evidences, their importance in the scientific investigation of crime, recent advances made in analyzing this evidence and presenting it in a court of law.

The Contribution of Forensic Medicine in Fair Judicial Proceedings: Legal Dimensions

Prof. Shireen Salah Ghalib

Torture is any action that results in pain or suffering, whether physical or mental. It is sometimes carried out by a public official for such purposes as obtaining information from a person, a confession, punishing him for an act committed or intimidating or frightening other people. Therefore, all international charters and conventions criminalize torture including article-5 of the Universal Declaration of Human Rights and article-7 of the International Covenant on Civil and Political Rights.

This study highlights how forensic medicine detected the prevalence of torture in some governorates in Egypt during the period from 2000-2011. It aims to shed some light on the role of forensic medicine to diagnose and report genuine torture cases in police stations, prisons, and state security headquarters. It also aims to highlight the torture methods used, either physical or psychological, and to reveal the incidence and extent of torture, and to identify to which group the torture was directed, such as Islamists, communists, socialists, criminals, poor people, and human rights campaigners.

The alleged torture cases studied were classified according to sex, age, geographical distribution, legal status of alleged cases, type of accusation (criminal, political, arrest), place of torture, types and causes of torture (punishment, extracting confessions, humiliation), kind of perpetrator, instruments used, types and sites of injury, and assessment (no treatment, healing <20 days, healing > 20days, permanent infirmity, and death).

Drafting Legal Forensic Medicine and Forensic Scientific Reports

Saad Naif Al Dejany

The layout of a forensic report is usually concise and simple enough to be understood by a non-scientific party; this may include police officers, lawyers or jury members. It will contain all information that is required to explain the findings of the analysis in simple scientific language. Additionally, the scientist in question is supposed to ensure that he is clear and honest about the results he is reporting or presenting. Furthermore, the forensic scientist is also viewed as an expert witness. Therefore, any opinions that he makes in his report will be based on clear and disclosed facts, without being biased towards any individual involved

in the case.

The forensic report is required by all jurisdictions to meet legal standards. This paper describes the standards that are required when drafting a legal forensic report for the purpose of submission to a court of law.

The Use of Nanotechnology in Forensic Sciences

Dr. Abdulwali Mohammed Alajlouny

Nanotechnology is one of the fastest-growing areas in science and engineering. This theme emerged through the convergence of the fields of electronics, physics, chemistry, biology, and other material sciences to create a new functional system with nanoscale dimensions which makes the development of nanometer technology governed by a common course. Progress in this area can only be achieved through collaborative efforts of scientists and researchers from various fields to discuss ideas, work together, and share their experiences and views.

Nanotechnology is now being applied on the improvement of DNA microchips and arrays. However, techniques routinely used for the analysis of nanomaterials have also been modified to be applied in other areas of forensic science including electron microscopy and Raman Microspectroscopy (Micro-Raman). These instruments have been used for the analysis of a range of forensic evidence types such as fingerprints, drugs, questioned documents, and bloodstains; they offer valuable insights and are potentially useful in a criminal investigation.

This paper describes use of nanotechnology in the fields of forensic science and forensic medicine, especially in cases of terrorism and crime scene investigation; and in toxicology and other related fields.

New Developments in Crime Scene Investigation

Prof. Dina Ali Shukry

In the last decade, modern cross-sectional imaging techniques have pioneered post-mortem investigations, especially in the realm of forensic medicine. Postmortem CT and multiphase postmortem CT angiography (MPMCTA) have been used for objective noninvasive documentation of both external and internal body injuries, especially in blunt trauma cases, which are the most common injuries faced in forensic field practice.

Various 3-dimensional human body models have been developed in research and experimental studies regarding traffic accidents and vehicle safety measures since the beginning of work in this area in 1972.

This article is a navigation through different forensic applications of CT, 3DCT and CT Angiography which have been studied in collaboration with the legal institute, Hamburg Eppendorf, Germany and Ludwig Maximilian University, Munich, Germany.

This work is aimed at analyzing of the use of 3-D imaging in forensics and crime scene investigations.

New Developments in Forensic Medicine

Dr. Moumen Suleiman Alhadidy

Developmental issues in forensic medicine are usually associated with legal and judicial applications as well as with development in chemical and biological forensics. Forensic pathology plays a vital role in identifying injuries inflicted on the bodies of victims of crime. Judges stand bewildered at times when the injuries are in the gray region in terms of the extent of danger to life. This shows the extent to which legal cases require an expert who is able to describe the injuries and diagnose them.

It is only natural that forensic pathologists and forensic experts are interested in dealing with the effects of crime on the human body. Accordingly, all of these effects need to be correctly classified and interpreted within the framework of the law. In addition, it is only natural that scientific research and investigation into the nature of injuries suffered by victims are linked to particular facts, the circumstantial environment in which the crime occurred, the health condition of the person before death, and the extent to which any poor health conditions were aggravated because of injuries. Medical and scientific reports are considered to be an independent knowledge-based testimony revealing facts in a legal case whose sole and ultimate purpose is to reach truth and justice.

The use of the default autopsy procedure (radiography), endoscopic screening, the detection of complex methods used to kill, and the nature of examining wounds and injuries located on the human body have all remained the same. However, development has occurred in understanding, interpretation, terminology and judicial applications relating to each of the above. Despite the fact that the concept of relying on evidence is the best way to perform forensic investigation, there are other crimes whose investigation solely relies on the circumstantial, environmental and other corroborative factors. These crimes are of three types: 1) Terrorist crimes where investigative and security work for the prevention of these crimes requires intervention in the stages of thinking and planning before they are committed, 2) Drug possession crimes which are mixed with actions of subversion and deception; and 3) Crimes of attempted rape or indecent assault. Evidence relating to the stages of initiation in these crimes remain weak but cannot be dropped or excluded in spite of their weakness.

Recommendations of the First Arab Forensic Sciences & Forensic Medicine Meeting 2014:

First of all, the Scientific Committee and the participants of this meeting appreciated and recognized the central role of Naif Arab University for Security Sciences (NAUSS) in the development of forensic science education, research, and training in the Arab world.

Secondly, based on the exhaustive work done at this important event, the useful discussions, and the effective exchange of information among forensic scientists, experts

and professionals, the following recommendations were unanimously proposed and endorsed by the Scientific Committee:

- Affirming the future role of the Arab Society for Forensic Sciences and Forensic Medicine (ASFSFM) in promoting the quality of forensic science practice in the Arab world.
- Establishing clearly defined scientific references to improve the quality of work in all fields of forensic science and forensic medicine. This aims to unify working standards and regulatory frameworks in forensic sciences under the guidance and cooperation of the Arab Society for Forensic Sciences and Forensic Medicine.
- Establishing a regional, comprehensive electronic database consisting of reference books, scientific literature and a list of highly qualified professionals and specialists in various fields of forensic science and forensic medicine.
- Conducting a comprehensive survey to assess the current status of forensic science practice, education, training, and organization in Arab countries.
- Preparing continuous education programs within the various disciplines of forensic science, and forensic medicine and the development of criteria for the classification of experts and specialists.
- Preparing forensic science and forensic medicine reference books in Arabic language to unify scientific concepts and terminologies used in routine forensic science practice.
- Forming an Arab expert advisory group under the umbrella of the Arab Society for Forensic Sciences and Forensic Medicine for managing crisis and mass disasters properly and professionally.
- Organizing meetings and periodic training courses and workshops for judges, specialists in forensic sciences, and lawyers to form a common working environment.

The scientific committee of the First Arab Forensic Science & Forensic Medicine Meeting 2014 nominated various academic bodies at Naif Arab University for Security Sciences to be responsible for the proper implementation and follow-up of the recommendations proposed by the committee. The Committee also formulated strategies for the timely implementation of these recommendations.

Bodies entrusted with implementation of recommendations:

- The Arab Society for Forensic Sciences and Forensic Medicine (ASFSFM)
- The Office of the Vice President for Academic Affairs
- The College of Forensic Sciences
- The College of Training
- The Studies and Research Center
- The Crisis Center and Leadership Development
- The Information Technology Center
- The Security Library
- Naif University Publishing House

Implementation Strategies:

- Setting out procedures within the framework of the objectives that were agreed upon.
- Holding preparatory workshops, seminars, and meetings of concerned working groups.
- Organizing regional and international conferences, symposia, and meetings in forensic sciences, forensic medicine, nuclear security, criminalistics, and other related subjects.
- Forming a specialist education committee to improve curricula and educational standards in forensic sciences and forensic medicine in the region.
- Signing agreements and memorandums with local, regional, and international bodies concerned with recognition, accreditation, and quality control in forensic sciences.
- Laying down strict quality assurance and quality control policies at every level.
- Conducting surveys to determine the views of jurists, experts, and related professionals about current forensic science practice standards in the Arab world.
- Providing modern references, text books, scientific periodicals, and other research related facilities to regional academic and professional institutions to improve the standard of forensic science education and research.
- Forming a committee to develop a criteria for the classification of experts and specialists.

The First Arab Forensic Sciences & Forensic Medicine Meeting 2014 was a great success, and many useful contributions were made by the participants. As a result, a clearer vision of the future of forensic sciences and forensic medicine in Arab countries was developed. It was also a major step in strengthening academic and professional relations between leading forensic scientists, experts and institutions, both regionally and internationally.