

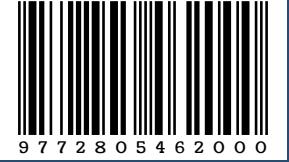
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Junior Scientist Day 2022 – Crime Scene Investigation Program

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The Junior Scientist Day program (JSD) was held on 13 and 14 December 2022 and organized by the Institute of Medical Molecular Biotechnology (IMMB), Faculty of Medicine UiTM, Sungai Buloh Campus in collaboration with various departments and public agencies. The main objective is to contribute to the national Science, Technology, Engineering, and Mathematics (STEM) program with a theme of Crime Scene

Investigation (CSI) and to expose and attract students aged between 6 to 13 years old to the world of crime scene investigation. A total of 107 children have participated in this program including 20 children from *asnaf* families who have been sponsored by the staff of Faculty of the Medicine UiTM. Our JSD - CSI program provides school students the insight of real-world problems in science beyond their classroom.

This aligns with the STEM objective of enhancing analytical thinking by contextual learning with practical exercises. Dr. Mohd Danial bin Mohd Efendy Goon is the chairman of the program and is assisted by the deputy chairman, Dr. Noor Fahitah binti Abu Hanipah with two advisors Assoc. Prof. Dr. Heo Chong Chin and Assoc. Prof. Dr. Siti Hamimah binti Sheikh Abdul Kadir and other committee members consisting of the staff from IMMB, LACU, MPG and DOME under the Faculty of Medicine, UiTM.

The novelty of this program is that all the activities were conducted in IMMB laboratories with state-of-the-art equipment and facilitated by established scientists and forensic teams from Hospital Sungai Buloh, Hospital Al Sultan Abdullah, Royal Malaysia Police (PDRM) Forensics (D10), Faculty of Dentistry UiTM, and the Fire and Rescue Department of Malaysia (BOMBA) Forensic. Activities were divided into 8 stations: Crime Scene Investigation (CSI), Fingerprint analysis, Forensic Entomology, Forensic Pathology - Autopsy, Forensic Odontology, Haematology, DNA Analysis, and Crime Forensic - Fire and Rescue Department of Malaysia.

A crime scene investigation (CSI) station was established by Forensic Department, Hospital Al-Sultan Abdullah, UiTM and assisted by Forensic Department Hospital Sg

Buloh and PDRM CSI Department (Bukit Aman). This station's goal was to expose participants on the process of identifying and collecting biological and physical samples and the methods applied in investigating a crime scene.



The Fingerprint Analysis Station (PDRM) taught the participants how to lift fingerprints from a crime scene and how to analyse fingerprints. Participants were also exposed to the various powders use by PDRM to lift fingerprints. Shapes of fingerprints were also taught to the participants



Forensic Entomology Station (IMMB) taught participants on methods to collect samples at a crime scene involving flies and to estimate time of human decomposition and death

based on maggot's life cycle.



Forensic Pathology – Autopsy (HASA & HSB) exposed participants on the procedure of an autopsy and the tools used in an autopsy. This station also explained the difference between the chest x-ray presentation of a COVID-19 patient and normal human chest x-ray.



The Forensic Odontology Station (Faculty of Dentistry) explained

participants the ways to identify and interpret bite marks on victim. The station also demonstrated how to distinguish between human and wild animal bite marks.



The Haematology Station (MPG Staff) primarily explained the components and shapes of blood. This station also showed the participants how to identify human blood groups using ABO antigens.



The DNA Analysis Station (IMMB) taught participants how DNA is extracted from collected biological samples and how to analyse the DNA using gel electrophoresis method. They were also showed the DNA bands produced through gel electrophoresis and how to correlate the results to

distinguish DNA from the victim and suspects.

The Malaysian Fire & Rescue Forensic Department mainly explained how the Malaysian Fire and Rescue Forensic Department handles forensic cases and also showed the forensic equipment they use.



Each activity was conducted to enhance participants' cognitive development with emphasis on analytical and soft skills. This program offers exciting opportunities for

students to connect with their peers and forensic experts in Malaysia, learning new skills, build self-esteem, enhance participant's interest in learning science and polish their creativity and innovation skills to move forward and become competitive by thinking critically.

Participants were challenged to identify the perpetrator from the list of suspects based on scientific evidence and clues obtained at each station. Furthermore, this program would bridge the gap between scientists and public agencies with school children, explaining and emphasizing the importance and role of science for national development. In addition, early exposure to these participants through this program would inspire them to further their studies in STEM field.