

about successful living close to nuclear and other energy technologies.

In this poster presentation more about this project will be presented.

Key Words/ Phrases: calendar, public, awareness, emergency preparedness



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53. THE JOURNAL OF MEDICAL CHEMICAL, BIOLOGICAL & RADIOLOGICAL DEFENSE, AN UPDATE

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The Journal of Medical Chemical, Biological, & Radiological Defense (www.JMedCBR.org) is a peer-reviewed scientific online journal focusing on the biology, chemistry, physiology, toxicology and treatment of exposure to threat agents. JMedCBR provides a central international forum for the publication of current research and development information on medical chemical, biological and radiological defense, as well as training, doctrine, and problems related to chemical, biological and radiological casualties. JMedCBR is sponsored by the US Defense Threat Reduction Agency (DTRA) Chem-Bio Technologies Directorate as part of its scientific outreach program in chemical and biological defense solutions for the Department of Defense.

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President Applied Science and Analysis Inc. (ASA) Publisher ASA Newsletter Chair CBMTS and ICBPS Symposia series. Dr. Barbara B. Saunders-Price is an international leader in NBC Defense issues, with combined expertise in nuclear, biological and chemical defense issues and environmental chemistry, toxicology, radiation and nuclear chemistry and public health risk assessments. She received her PhD in Physical Chemistry at Harvard University and her BA from Hunter College in NYC.

Dr. Price has over thirty years of experience in the reactions of chemicals and nuclear products in the environment; in research, development, and assessment projects; and in the detection of chemicals and protection of human health and the environment. She has been a major force in the ASA Newsletter, CBMTS series and JMedCBR.

54. CONVERGING REQUIREMENTS AND EMERGING CHALLENGES TO PUBLIC HEALTH DISEASE SURVEILLANCE AND BIOSURVEILLANCE

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Disease surveillance systems are a critical component of an early warning system for public health agencies to prepare and respond to major public health catastrophes. With a growing emphasis for more robust early indicator and warning systems to track emerging and dangerous diseases of suspicious nature, considerable emphasis is now placed on deployment of more expanded electronic disease surveillance systems. The architectural considerations for biosurveillance information system are based on collection, analysis and dissemination of human, veterinary and agricultural related disease surveillance to broader regional areas likely to be affected in the event of an emerging disease, or due to bioterrorism and better coordinate plans, preparations and response by governmental agencies and multilateral



forums. The diseases surveillance systems architectures by intent and design could as well support biological threat monitoring and threat reduction initiatives. As an illustrative sample set, this paper will describe the comparative informatics requirements for a disease surveillance systems developed by CSC for the US Centers for Diseases Control and Prevention (CDC) currently operational nationwide, and biological weapons threat assessment developed as part of the Threat Agent Detection and Response (TADR) Network under the US Biological Threat Reduction Program and deployed at Uzbekistan, Kazakhstan, Georgia, and Azerbaijan.



Dr. Venkat Rao is a nationally known expert in the fields of biomedical toxicology, pharmacology, and toxicoinformatics with proven experience in the understanding and integration of complex biomedical technologies with information systems-based tools for applications in chemical-biological risk analysis, clinical intelligence, public health, and homeland security. Discovered Cryptosin, a novel cardio-active glycoside for potential treatment of cardiovascular diseases. Notably in the emerging interdisciplinary areas of Bioterrorism preparedness and homeland security are Dr. Rao's proven experience in developing scientific and informatics tools and methodologies for application in health risk analysis, toxicoinformatics, and product safety assessment. Dr. Rao is currently the Chief Scientist of CSC National Security Programs, at the Computer Sciences Corporation (CSC), with program area expertise in Chemical-Biological Defense Technologies in the areas of toxicoinformatics, public health, medical informatics, Biosafety and Biosecurity, infectious disease surveillance, biodefense vaccines hazard analysis, risk assessment, and environmental health. Formerly, Director of Health Research and Informatics Practice, leading Bio-IT in the Clinical Knowledge Transformation Projects aimed at leveraging clinical and secondary medical and healthcare data in customized analytics solutions.

minimizing the consequences of a terrorist attack. New opportunities for operational gathering of radiation contamination data and corresponding space coordinates can be associated with the development of mobile systems which provide measurements of ionizing radiation dose rate and corresponding space coordinates, and subsequent transferral to the crisis centre server where these data are processed and used for mapping radiation contamination. In such a way, the data obtained on radiation contamination could be incorporated in a timely manner as input data to computer models, describing the dispersion of radionuclides in an environment that makes it possible not only to forecast the development of a situation but to define necessary protection measures for mitigating and localizing the consequences.

The mobile reconnaissance system was developed as a prototype of such a solution, based on a cellular terminal such as the Nokia 12i (Teltonika BoxGPS). A Global Positioning System (GPS) was used to determine space coordinates. A Russian BDMG device measured the dose rate of ionizing radiation, and the subsequent data were transferred to the server of the crisis centre of the Nuclear Safety Institute of RAS (IBRAE). The main operation regime involved setting the GPRS connection, transferring data, and switching off the connection. A change of the operation regime can be produced via SMS commands from the crisis centre's terminal or with the help of a cellular phone. When a connection is not available, the data are aggregated in memory and transferred to the server when the connection channel arises. A few data transfer protocols, including FTP and HTTP/HTTPS, are provided. Each module has its own mechanism of self-diagnosis that allows for the united collection of the module's operation statistics. Every module is called over asynchronously. As a result, a report on their work is produced. If an error arises, the command is implemented to self-correct it; when local correction is impossible, the module is rebooted. The dispatcher of the errors and the mobile application collect information regarding all errors and dysfunctions arising during the application's operational process and, where necessary, send this data to the server to prevent it being lost or damaged.

Key Words/ Phrases: radiation, safety, mobile systems, cellular terminal, dose rate, mapping

Will not be presented

55. MOBILE SYSTEM FOR RADIATION RECONNAISSANCE AFTER TERRORIST ATTACK

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Well-timed radiation reconnaissance aimed at identifying a source of radiation contamination and drawing up a contamination map represents an important and complex problem, the solution of which allows for the reduction of the irradiation dose, the implementation of decontamination works, and finally

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