

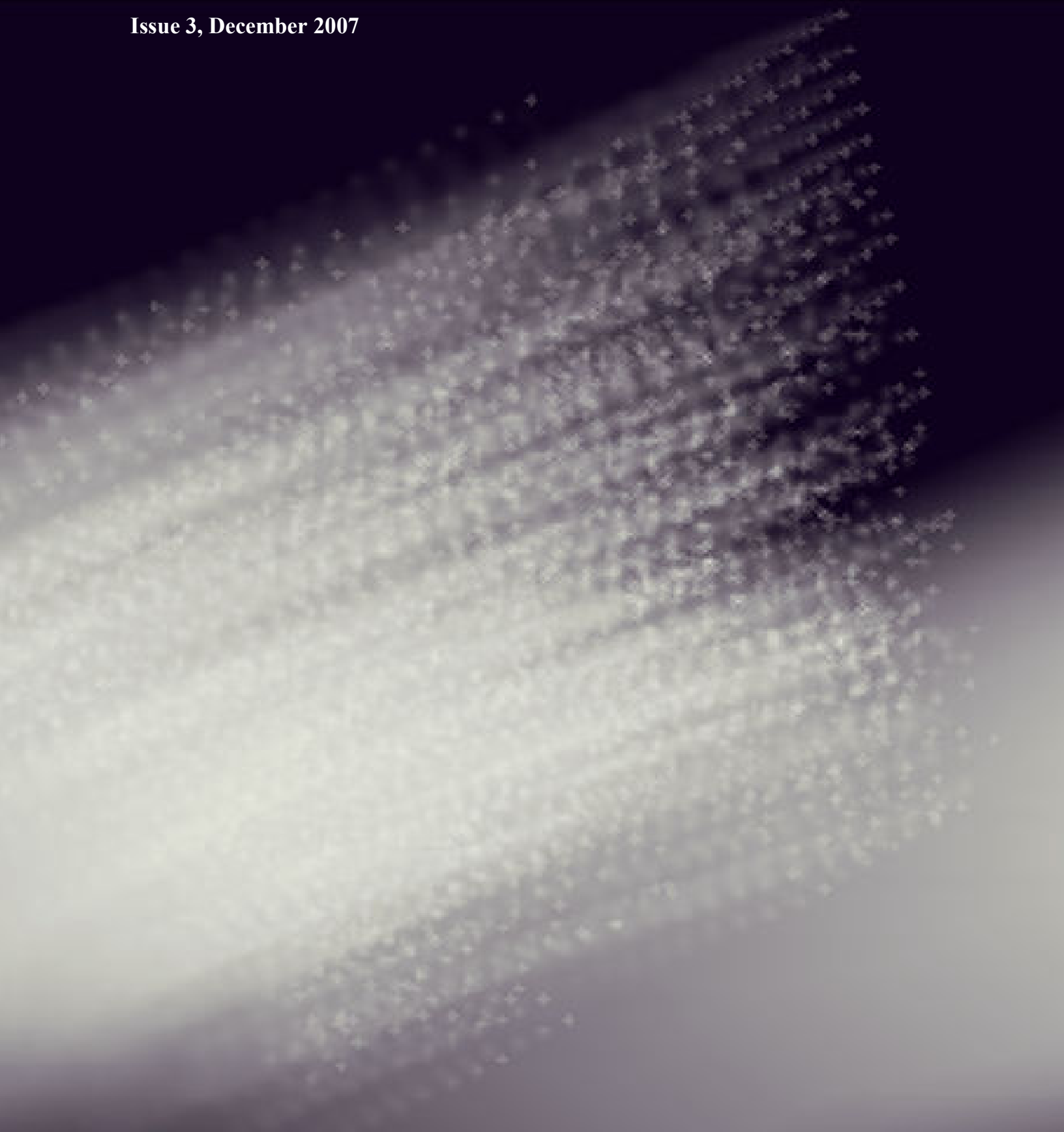
# SAYS

newsletter



The Official Newsletter of the Sudanese Academy of Young Scientists

Issue 3, December 2007



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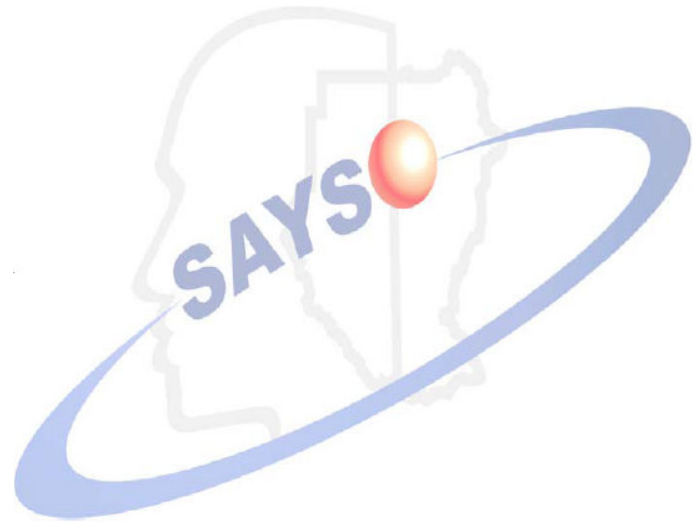
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## **Editorial**

This year, we have announced the formation of *SAYS*, a dream that has come true with the efforts of a number of young scientists, supported by senior members of the scientific community in the Sudan. Here I would like to account the activities of *SAYS* in 2007. Although there are much excellent news to report, I must begin with a disappointment, *SAYS* is still requiring financial support.

Through out the year, the council has performed many achievements: The final version of the Constitution and Bylaws were presented. Future strategies and activities have been formulated, to expand the membership of the academy, many young scientists were invited to join *SAYS*. The Academy was linked and collaborated with other Sudanese scientific organizations, and participated in their activities, also *SAYS* has contributed in some international scientific conferences and meetings in the Sudan and outside. Three electronic issues of *SAYS* newsletter were published, and now we are creating the website which will be launched in January 2008.

The future plan includes; raising funds, linking *SAYS* with other regional international young scientists academies and releasing the *SAYS* scientific journal.

Finally we would like to thank all members of the Sudanese National Academy of Sciences (*SNAS*) for their advice, help and support, particularly *SNAS* president Professor Ahmed Mohamed Elhassan.

Hisham Yousif Hassan  
**Editor-in-Chief**

**List of Contents**

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News.....55

Nutritional Genomics.....56

Anxiety and Depression Among HIV Positive and AIDS Patients...59

Diagnostic Microarrays: Cutting-Edge Technology for Detection  
and Discovery of Pathogens.....63

From Numbers to Probabilities (Part two).....67

SNHS: Sudanese Natural Heritage Society.....69

Nile College.....71

NIDAA: Village Concept Project.....73

About SAYS.....76

## **NEWS**

### **Sudanese Scientist Wins Award for Pioneering Leishmaniasis Research, UK**

On 5<sup>th</sup> of Nov 2007, a Sudanese scientist Dr Hiba Salah Eldin Mohamed, from the Institute of Endemic Diseases, University of Khartoum has been awarded the Royal Society **Pfizer Award** for her pioneering research in genetic susceptibility to leishmaniasis.

Her discoveries have increased the understanding of the role of some immuno-regulatory genes in controlling susceptibility to infectious diseases such as visceral leishmaniasis in Sudan. The award was established last year by the Royal Society, UK National Academy of Science and Pfizer with the aim of helping to expand scientific research capacity in developing countries. SAYS would like to congratulate Hiba for her success and achievement which is a triumph for Sudanese scientists.



### **SAYS participation in AfSHG**

By an invitation from the African Society of Human Genetics (AfSHG), five members of SAYS have participated by oral and poster presentations in the 5th meeting of the AfSHG in conjunction with the 1st annual meeting of the Egyptian National Society of Human Genetics, which has been held in Cairo last Nov.



## **Nutritional genomics**

### **The beginning of nutritional genomics**

Genomics is the characterization and sequencing of an organism's genome and analysis of the relationship between gene activity and cell function. Nutritional genomics or food genomics is the specific application of genomics in research pertaining to agriculture, food processing and food consumption. Food genomics covers the entire food chain. Food genomics is used in agriculture to increase vitality, disease resistance, drought and salt tolerance resulting in increase of yield, reduce loss during storage and transport, enriched micronutrition and microorganism producing auxiliary substances and food ingredients.

The knowledge of biological active components has been developed during the last ten years to be the basis for the development of new functional foods, looking forward to tailored functional foods and personalized foods.

### **Integration of Genomics in nutritional sciences**

Genomics research is arousing hope that food will be adaptable to individuals' genetic profiles. Genetic

susceptibility to disease ranging from intestinal cancer to food infection.

Genomics research is helping to map these phenomena and give food advice to the personal genetic constitution. Consumer will be choosing food on the basis of their own genetic constitution within ten to twenty-five years. People will have a genetic passport that allows them to use personalized nutrition, personal food with a preventive function.

The integration of genomics into nutritional sciences has illuminated the complexity of genome responses to nutritional exposures while offering opportunities to increase the effectiveness of nutritional interventions, both clinical and population based. Nutrients elicit multiple physiological responses that affect genome stability, imprinting, expression, and viability. These effects confer both health benefits and risks, some of which may not become apparent until later in life. Nutritional genomics challenges us to understand the reciprocal and complex interactions among the human genome and dietary components in normal physiology and pathophysiology. Understanding these interactions will refine current

definitions of benefit and risk and lead to the establishment of dietary recommendations that have a high predictive value, minimize the risk of unintended consequences, and account for the modifying effects of human genetic variation. Furthermore, nutritional genomics will enable the design of effective dietary regimens for the prevention and management of complex chronic disease.

### **Research Activities**

Nutritional Genomics research seeks to identify and understand the underlying molecular and biochemical mechanisms of the genes and loci that affect the nutritional traits of a crop. Research results are applied to the development and testing of genomic/genetic/ molecular-based solutions to micronutrient composition problems.

### **Uses of food genomics**

Through informatics driven metabolomic analysis it is possible to identify and predict the impact of diet on the health of individuals with different genotypes.

**Metabolome:** The small molecule inventory (SMI) or metabolome is a pattern of molecules that reflects the cell's status. It is the totality of metabolic processes including anabolism and catabolism. It results from the expression of the genome and

proteome in response to the cellular environment. The metabolome gives a direct picture of the cell's activity and its environment.

The cumulative effects of all expressed and modified proteins represent information which is stored in the small molecular inventory (SMI) of the cell. These molecules include important cellular function compounds, such as nucleotides, vitamins, antioxidants and catecholamines. This area of research is called **metabolomics**.

When taken in its entirety it is not always necessary to know the identity of individual components in a metabolic profile. Systemic changes in pattern are indicative of specific states or of changes in status. This can be measured by quantifying the redox active components. Detecting and identifying subtle changes can be problematic with the sensitivity required to identify such molecules. New analytical technology addresses both problems using the central position of redox biochemistry in the biological process.

The general aim of metabolomics is to identify, measure and interpret the complex time-related concentration, activity and flux of endogenous metabolites in cells, tissues, and other

biosamples such as blood, urine, and saliva. Metabolites such as small molecules that are the products and intermediates of metabolism, carbohydrates, peptides, and lipids vary in concentration, size, structure, polarity, and functional groups. An integrated set of technologies is needed to address the entire spectrum of metabolomics.

**Metabolomics in human blood:** Mass spectrometry can now monitor enzymatic and hormonal regulation of thousands of metabolites by means of metabolomic techniques. The German Institute of Human Nutrition (DIFE) in cooperation with the Max-Planck Institute for molecular Genetics of Plants in Golm/potsdam and Metanomics in Berlin are adapting a plant analytic system for human tissue and plasma. A specific metabolite pattern in diabetes patients was possible to be identified. More detailed knowledge should allow the early

identification of unfavorable metabolic profiles in order to develop preventive strategies.

We may conclude that Nutritional genomics is the application of high throughput advanced genomic technologies in nutrition research. These technologies can be integrated with databases of genomic sequences and inter-individual genetic variability, enabling the process of gene expression to be studied for many thousands of different genes in parallel. Such techniques can facilitate the definition of optimal nutrition at the level of populations, particular groups, and individuals. This in turn should promote the development of food derived treatments and functionally enhanced foods to improve health.

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### **Anxiety and depression among HIV positive and AIDS patients**

People with HIV and those close to them are subjects to numerous stressors that can impact their mental health. Among these stressors are fear and anxiety following the initial disclosure of HIV seropositivity, stressful and confusing medical treatment regimens, the prospect of serious medical problems, and the sadness and grief associated with having a foreshortened future. Thus, HIV affected individuals are challenged to find ways of coping with stress, anxiety, and feelings of depression throughout the course of HIV disease. A person's history of coping with adversity or illness, the amount of social and emotional support they receive from family, friends, community organization and their ability to access mental health services can all be important protective factors for an HIV-affected person's mental health.

Since the onset of the AIDS epidemic, psychiatric epidemiologists have turned their attention to examining psychiatric disturbances in HIV-infected individuals, in particular major depression, suicidality, and anxiety disorder.

The need for general guide-lines in diagnosing and managing Anxiety and depression among HIV-infected and AIDS patients

The HIV primary care practitioner faces not only the challenge of coordinating and managing care for the seriously mentally ill but also the challenge of recognizing the mental health needs of those patients who are not seriously mentally ill these needs may range from addressing the stress and uncertainty of living with HIV to recognizing and treating depression and anxiety to understanding post-traumatic stress disorder and domestic violence.

The increasing recognition of co-morbid mental illness among people living with HIV has led to the need for guidelines that address the management of both HIV-infection among people with mental illness and mental illness among people with HIV-infection. These guidelines focus on this latter group and address the care of people with mental illness and HIV who are already engaged in HIV clinical care. They are chiefly intended to help HIV primary care practitioners meet the needs of these patients who are in their care.

**Anxiety among HIV-infected and AIDS patients**

Anxiety is a common symptom in patients with HIV infection; when it is severe or persistent patients may have an anxiety disorder. In HIV positive and AIDS patients there are common psychological factors that contribute to anxiety (loss of control over one's body when associated with an increased sense of dependency, little or no knowledge about what medical problems that may occur, fear of pain, fear of one's mortality because anxiety is not only a bout death but also dying, fear of rejection by loved ones, and isolation, fear of consequences of medical treatment failure).

**Diagnosis**

HIV positive individual can present with anxiety like symptoms due to delirium, other medical conditions related to the status of immunity suppression mainly opportunistic infections or tumors leading to CNS pathology. That is why exclusion of HIV related CNS disease or other medical conditions in patients who present with severe anxiety is important in order to reach the diagnosis.

**Treatment**

When anxiety is present but does not affect patient's functioning, medications -e.g. Benzodiazepines, buspirone, SSRIs (Selective Serotonin Re-uptake Inhibitors) and TCA (Tricyclic anti-depressants) or Barbiturates may not be needed only the use of psychological and supportive therapy would be quite enough. Although such therapies may be quite helpful, in conditions of great distress medication plus psychotherapy, and specialized behavioral treatments are required.

When psycho-pharmacological treatment is needed in HIV positive/AIDS patients a general rule is followed by practitioners and that is to start slow and go slow because it was found that in this group of immunosuppressed individuals especially those who are symptomatic sensitivity to side effects of anxiolytic medications and response to lower doses if compared to general population.

And because these patients are on multiple medications the potential for drug-drug interaction is great. When prescribing pharmacological agents liability to addiction should be considered, and caution is used when

treating patients with hepatic damage and CNS pathology. Although barbiturates and meprobamate are effective anxiolytics they are not recommended because of their side-effect profile for addiction and potential for addiction.

### **Depression among HIV-infected and AIDS patients**

Clinical depression is the most commonly observed psychiatric disorder among patients with HIV infection /AIDS. Multiple risk factors for depression exist in this group. The diagnosis of HIV infection itself may lead to sadness and fear of stigmatization. People with HIV infection or AIDS patients who are members of stigmatized minorities may find it difficult to avoid internalizing negative self-images; more ever, AIDS may result in wasting, weakness, pain, confusion, and disfigurement, which add to patient's negative feelings. Although sadness and grief are normal responses to these factors clinical depression causes substantial morbidity and may increase mortality among AIDS patients. That is why it is important to screen for depression on a yearly basis and more often when symptom suggest.

Depression has a significant effect on quality of life, progression of disability and ability to receive good medical care. With the advent of protease inhibitors, which have the potential to control HIV infection and prolong life, treatment of a major depressive disorder is even more critical, because untreated depression could both compromise medication adherence and potentate the disabling effects of the illness. Researchers also suggest that chronic depressive symptoms may be associated with increased mortality in HIV positive patients and it may accelerate HIV infection progression to AIDS.

A theory suggests that HIV itself causes depression, either through *HIV associated neurocognitive changes* (now referred to as minor cognitive motor disorder and HIV associated dementia) may be a cause of depression, or through HIV associated medications that may cause mood changes.

### **Diagnosis**

Because weight loss, irritability, restlessness, disturbed sleep, fatigue, anorexia, lethargy, or diminished interest in sex (all symptoms commonly observed in HIV-infected persons) may indicate depression, it would be confusing to determine if

patients are experiencing the effects of HIV, side-effects of medication, or clinical depression. Screening for depression is particularly important during the presence of crisis-points in the life of any patient. The diagnostic criteria for major depression is used to determine whether the patient is depressed or not then other diagnostic measures and scales are used to assess the severity of depression.

### **Treatment**

Because of potential side effects and drug-drug interaction it is important to become familiar with the safety profiles and interactions of antidepressants and HIV-related medications. When an anti-depressant is indicated, the choice is guided by patient's history, family history, target symptoms, and the side-effects and safety profiles of the medications. For people with HIV, as in other vulnerable populations, the concept "start slow, go slow" remains the cornerstone of medication use.

There are several types of antidepressant medications used to treat depressive disorders, these include *SSRIs* (Selective Serotonin Re-uptake Inhibitors) and *TCA* (*Tricyclic anti-depressants*), bicyclic anti-

depressants, *MAOIs* (monoamine oxidase inhibitors). But in HIV-infected persons and AIDS patient the most or relatively safe ones are used, and these usually are *SSRI*, which comes as the first line (has fewer drug-drug interaction) then followed by *TCA* if it can be tolerated.

Although for some patients medication alone may be sufficient to ease their depression, for others the combination of medication and mental health counseling will provide a more effective and, perhaps, quicker response.

The importance of family, health workers and the society to the mental health of persons who live with HIV cannot be overwhelmed. Because of the unique role of such practitioners in the health care system and the great effect of other society members on the output of the health care system as they can help prevent or treat psychiatric illness and maximize patient's psychological health.

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## Diagnostic Microarrays: Cutting-Edge Technology for Detection and Discovery of Pathogens

Early detection and identification of aetiological agent(s) is a crucial factor in the control of a disease. A swift action by health authorities during an outbreak is fundamental, and must take into account the time taken to identify the responsible pathogen. With the ongoing outbreak of haemorrhagic fever in Sudan (identified as Rift Valley Fever by WHO) and the way it has been managed, it is now appropriate to briefly cast some light on one of the recent advances in virus detection and discovery; the diagnostic microarray.

Advances in molecular biology techniques predominantly based on the polymerase chain reaction (PCR) including, but not limited to; degenerate, multiplex and real-time PCRs played a vital role in the discovery of new pathogens. Moreover, the availability of full genome sequences of many pathogens is another contributing factor. Most detection methods are aimed at identifying single or a few known pathogens often relying on knowledge gained from disease symptoms. Existing techniques to screen for a wider spectrum of viruses, or for the

detection of novel or emerging viruses, suffer from severe limitations especially with non-culturable viruses and absence of anti-sera. The demand for new molecular methods and technologies is continuing in response to the constant threat imposed by newly emerging diseases of unknown origin.

A DNA microarray (also commonly known as *gene or genome chip*, *DNA chip*, or *gene array*) is a collection of microscopic DNA spots attached to a solid surface, such as glass, plastic or silicon chip forming an array. The immobilised DNA segments with known sequence are known as *probes*, thousands of which can be present in a single DNA microarray. The free nucleic acid whose identity is being detected is known as *target*. Oligonucleotide-based microarrays could be designed to detect and differentiate pathogens at the family, genera, species and subtype or serotype level.

Recently, there is an increasing interest in diagnostic microarrays for different pathogens (viruses, bacteria, parasites and fungi). Some laboratories designed microarrays for specific

pathogens, while others generated pan-microbial arrays. The virus that caused the outbreak of severe acute respiratory syndrome (SARS) in South East Asia in 2003 was identified as a new coronavirus by a pan-viral microarray combined with direct sequence recovery.

In the UK, oligonucleotide-based virus microarrays were developed by researchers at the Compton and Pirbright Laboratories of the Institute for Animal Health (IAH), Veterinary Laboratories Agency (VLA) and the Centre for Environment, Fisheries & Aquaculture Science (CEFAS). Their third-generation microarray comprised 2884 oligonucleotide probes derived from 308 virus species from 36 families. 70-nucleotide probes were designed from fully sequenced viral genomes, partial sequences, and from sequences generated at the Pirbright Laboratory, using publicly available bioinformatics software.

Oligonucleotides were synthesised commercially and spotted in duplicates onto glass slides. At IAH, the microarray is being validated to detect veterinary viruses using the avian coronavirus, infectious bronchitis virus (IBV) as a model and to serotype and subtype the picornavirus, foot-and-mouth disease virus (FMDV). Total

RNA was extracted from cell cultures infected independently with IBV M41 and the FMDV A10 HOL/42. RNA was reverse transcribed with the resulting cDNA randomly amplified and labelled with a fluorescent dye, and hybridised for 2 to 4 hours with probes printed onto slides. Slides were scanned and fluorescence was quantified using scanner software (Fig. 1). Raw data were normalised, statistically analysed and visualised using 'DetectiV' custom software (<http://detectiv.sf.net>) which has been developed at IAH Compton Laboratory. The full procedure takes between 24 to 48 hours.

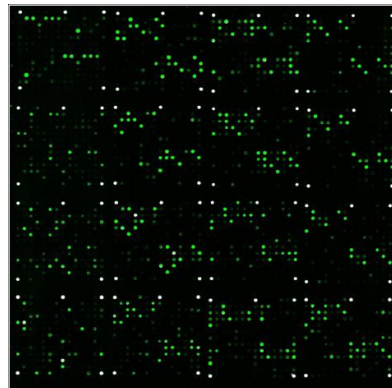


Figure 1. A scanned image of a microarray slide hybridised with labelled IBV-derived cDNA at IAH.

Analysis of raw data following scanning of microarrays hybridised with labelled cDNA from IBV revealed specific detection of the virus

as shown in figure 2. Interestingly, the labelled IBV cDNA also detected oligonucleotides derived from the 3' end of the newly identified avian coronaviruses isolated from ducks, geese and pigeons, indicating a close relationship to IBV. Specific hybridisation was also obtained with FMDV A10 HOL/42 (data not shown). Beside the FMDV A10 HOL/42, the array was also interrogated with cell culture-grown FMDV O UKG/35/2001 and O TAW/3/97, and O UKG/12/2001 from epithelium of sheep 2 days post infection. Different hybridisation profiles between the different FMDV serotypes and between topotypes (within serotypes) were observed (data not shown). The microarray has also been tested successfully with other viruses (data not shown).

Overall, the great advantages of a diagnostic microarray could be summarised as follows:

- A single field/clinical sample can be investigated for the presence multiple pathogens in a single operation. Hundreds of tests run in parallel.
- Does not require a prior knowledge of the pathogen (nucleic acid is randomly amplified without using pathogen-specific primers).
- Facilitates comprehensive, sensitive and unbiased analysis of viral prevalence (limitations with existing techniques to screen for a broad spectrum of viruses).
- Relevant to emergency preparedness in respect to emerging, exotic and zoonotic diseases.
- Discovery of unknown viruses (presence of viruses which are overlooked).
- Could be used as part of a surveillance strategy; to define a base line for the occurrence of many pathogens today, against which to compare occurrence in future.
- New portable formats are emerging with possible applications outside the laboratory.

Work involving detection microarrays is currently expanding with international collaborations.

The work at IAH, VLA and CEFAS is funded by the Department of the Environment, Food and Rural Affairs (DEFRA) and the Biotechnology and Biological Science Research Council (BBSRC) strategic core funding. The IBV work at IAH is supported by DEFRA grant SE4102.

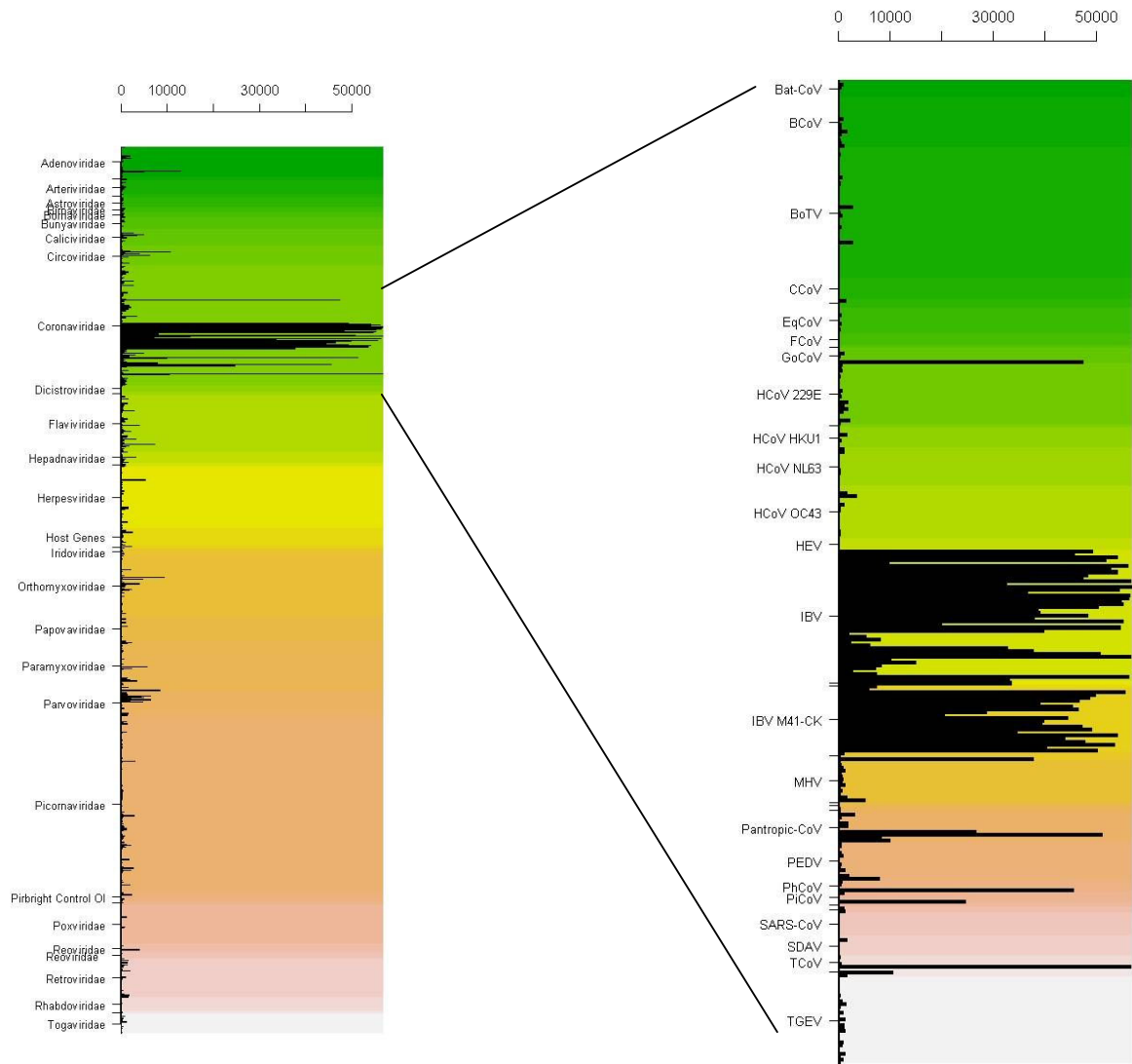


Figure 2. Fluorescence profiling following hybridisation of virus microarray with cell culture-grown IBV M41. (*Left*) Probes detected in the whole array were specifically Coronaviridae-derived. (*Right*) Further analysis of Coronaviridae oligonucleotides revealed IBV- and closely related viruses-specific hybridisation.

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## From Numbers to Probabilities

### (Part 2)

### From “*Balla*” to “*Ars Magna*”

An historical review cited in

Peter L. Bernstein's "AGAINST THE GODS the remarkable story of risk"

**Previously:** Part 1 reviewed the concepts of probability in the Greeks era, the contribution of well known Arab contributors to mathematics, such as Alkhowarizmi and Omar Khayyam, and finally the contribution of Fibonacci in his book *Liber Abaci*, or *Book of the Abacus*, where he introduced the Fibonacci series.

Luca Paccioli, was born about 1445 in Borgo San Sepulcro, he studied art, history and mathematics; and at the age of twenty, he obtained a position as tutor in Venice, where he attended public lectures in philosophy and theology and studied mathematics with a private tutor.

In 1470, he moved to Rome to continue his studies, at the age of 27 he became a Franciscan monk; he taught mathematics and received the title of magister.



**Paccioli**

Paccioli's masterwork, *Summa de arithmetica, geometria et proportionalità*, appeared in 1494, the *Summa* acknowledged Paccioli's debt to Fibonacci's *Liber Abaci* and brought double-entry bookkeeping to the attention of the business managers of this day.

In Milan, he met Leonardo da Vinci and tutored him in the multiplication tables; Leonardo owned a copy of the *Summa* and studied it with great care, because he had difficulty with elementary arithmetic, which is a revealing commentary on the state of mathematical understanding at the end of the fifteenth century.

Paccioli's famous puzzle *balla* remained a challenge for mathematicians for hundreds of years; this puzzle was a question of how to divide the stakes of an unfinished game of chance between two players when one of them is ahead.

Another man to mention is a sixteenth-century physician named Girolamo Cardano,



**Cardano**

who was just such a person. Cardano's credentials as a gambling addict alone would justify his appearance in the history of risk, but he demonstrated extraordinary talents in many other areas as well. The surprise is that Cardano is so little

known, despite he was the quintessential Renaissance man.

Cardano was born in Milan about 1500 and died in 1571, a precise contemporary of Benvenuto Cellini, and like Cellini he was one of the first people to leave an autobiography that he called *De Vita Propria Liber (The Book of My Life)*, and what a life it was! Cardano was the most famous physician of his age, a gambler and a part-time mathematician, the Pope and Europe's royal and imperial families eagerly sought his counsel.

Cardano wrote 131 printed works, claiming to have burned 170 more before publication, and left 111 in manuscript form at his death. His writings covered mathematics, astronomy, physics, urine, teeth, the life of the Virgin Mary, Jesus horoscope, Morality, immortality, Nero, music, and dreams. His best seller was *De Subtilitate Rerum (On the Subtlety of Things)*, a collection of papers that ran to six editions, dealing with science and philosophy as well as with superstitions and strange tales.

Cardano's great book on mathematics, *Ars Magna (The Great Art)* appeared in 1545, at the same time Copernicus was publishing his discoveries of the planetary system and Vesalius was producing his treatise on anatomy. The book was published just five years after the first appearance of the symbols "+" and "-" in

*Grounde of Artes* by an English man named Robert Record and seventeen years earlier than a book called *Whetstone of Witte* which introduced the symbol "=" that meant "*noe 2 thynges can be more equalle than a pair of parallels*".

*Ars Magna* was the first major work of the Renaissance to concentrate on algebra. In it, Cardano marched right into the solutions to cubic and quadratic equations and even wrestled with the square roots of negative numbers, he also introduced the use of *a*, *b* and *c*, that are familiar to algebra students today. But like other distinguished mathematical contemporaries, he failed to solve Paccioli's famous puzzle the *balla*.

Cardano's treatise on gambling is titled *Liber de Ludo Aleae (Book on Games of Chance)*, which was the first serious effort to develop the statistical principles of probability. Cardano title and most of his text referred to "chances" instead of the word probability, (Latin root for the word Probability; *Probare*: test, *ilis*: to be). His *Liber de Ludo Aleae* was written in 1525 and rewritten in 1565.

To be continued,

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## Sudanese Natural Heritage Society

*Natural heritage via media forum*

Sudanese Natural Heritage Society (SNHS) is a Sudanese civil voluntary scientific NGO, which aims to identify the natural heritage of Sudan and raise the awareness about the importance of Sudanese natural heritage and how to protect its components against the various threats and damages.

The society was established in 2003 under the Registration of Humanitarian Aid Commission HAC, Humanitarian Affairs Ministry, Sudan and cooperates with educational institutions, research centers and many NGOs that are concerned with natural heritage in Sudan, and international organizations of the same line to achieve its objectives.

It aims identification, documentation, preservation and awareness of Sudanese natural heritage and human history through different activities as conferences, workshops, forums, lectures, and seminars, field works and training courses. Also the society is trying to raise the awareness

about conservation our natural heritage *via* media forum through sections of training programs in different field of natural heritage and how to conserve it through data collection, documentation and publications of information.

The society is located at the Sudan Natural History Museum, University of Khartoum, Khartoum, Sudan; and has several national wide branches in Port Sudan – Red Sea University – Red Sea State, Elobied – Kordofan University – North Kordofan State, which lifted the total membership to 360.

Previously, SNHS has engaged in several project, one of the first projects was "Rehabilitation Programme of Flora and Fauna of Almuswarat, Naqaa and Albigrawia areas" in participation with the Sudan Civilization Institute; the project aimed an ecological and biodiversity surveys in the Nile River State during 23/12 – 25/12/2004, and was awarded by the first report about the biota and ecological status in

Almuwarat and Naqaa area, the project targeted members of the society, staff of institutes and University of Khartoum and herbarium staff and researchers.

The SNHS also established the "Sudanese Museums' Work Conference" in Khartoum during 28/9 – 30/9/2004; the conference targeted workers, interested in fields of tourism, science, archeology, civilization and culture, academic researchers and visitors of Sudanese museums. It also adopted "Training course in Agricultural Pollutants." in 20/6 – 26/6/2006, targeting students of universities, institutes of agricultural schemes and areas like Gazeria and Managil; governmental institutes related to environmental and agricultural pollutants and civil society institutions and organization related to the agriculture and environment.

SNHS is also involved in documentation of life style, biota and EIA studies of Red Sea coast, starting in August 2006, and for 10 months the project targeted Red Sea coast citizens and traditional fisheries, selected groups of journalists, directors, photographers and writers and Red Sea coast citizens who interested in nature preservation

and conservation of environment.

In June 2005, SNHS participated with the Sudanese Conservation Environmental Society SECS, Sudanese Wildlife Conservation Society SWCS in a project towards an active role for the communities in the sustainable biodiversity in Dinder National Park, Sudan proposed to The Dry and Sub-Humid areas small grants programme (DAS), linking poverty, desertification and biodiversity – IUCN; the poverty alleviation was through (DNPP).

SNHS ongoing projects include "Birds of Sudan Programme" in Khartoum State, Gadarig State, Sennar State, River Nile State; the projects aims counting, census, identification and documentation of birds of Sudan and checklist of indigenous and migrant birds in Sudan, checklist of birds in protected areas in Sudan.

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**ADVERTISEMENT**

# كلية النيل

## Nile College

**MISSION STATEMENT**

The mission of Nile College is dedication to community development through sound policies, provision of high quality education and service recourses as well as upholding multicultural values and heritage. This mission centres on quality management of services in education, health care, research and socio-cultural development.

**PROGRAM OBJECTIVES**

The design of the program of studies and the learning experiences shall help students to:

1. Develop a high standard of moral and professional ethics.
2. Acquire learning skills in the direction of self-reliance, confidence and techno-competence so as to pursue continuing and postgraduate studies.
3. Be capable of integrating knowledge of normal structure and function at molecular, cellular, organ and whole body levels.
4. Apply basic medical information and knowledge of the mechanisms of disease in solving health problems at the level of the community, the family and the individual.
5. Develop a comprehensive approach to patient care so as to include psychosocial aspects of health and disease.
6. Acquire essential skills in dealing with outpatients, in-patients and medical emergencies.
7. Accumulate knowledge, skills and attitudes needed for communication, rapport and fostering a climate of confidence and cooperation with patients as well as other members of the health team.



### THE EDUCATIONAL ENVIRONMENT

Nile College has secured a five storey building with spacious grounds. The premises are well finished, air-conditioned and pleasant work in. The educational facilities have been prepared with care and professionalism.

The Curricula of the various programs have adopted innovative designs and teaching/ learning methods.

Great care has gone into the selection of the teaching and supporting staff who will undertake continuing professional development programs so as to serve the mission and objectives of this and innovative College for medical Sciences.

### PROGRAMS OF STUDY AND TUITION FEES

Bachelor of Medicine and Surgery (MB BS)	16,000 SDG
Bachelor of Nursing Sciences (B Sc Nursing)	16,000 SDG
Bachelor of Medical Technology (B Sc MLT)	8,000 SDG
Diploma in Medical Information System	3,000 SDG

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## **Village Concept Project A great call for a great future**

Village Concept (VC) is a concept that promotes community development initiatives as well as student capacity building.

Village Concept Projects are voluntary, non political, non governmental projects that aim at providing sustainable improvement of the living conditions in underprivileged communities as well as to develop student's capabilities, through sustainable development projects that are community owned, intersectorial and coordinated by students.

Students are an active part of the community, future leaders, and corner stones in voluntary work. So Village Concept Projects are initiated to promote intersectorial teamwork as a basic element of sustainable development, thus serving as a complement to university education; to promote international understanding through the participation of students from different countries; and to develop problem solving skills, research abilities and knowledge of participating students about field work realities as a complement to university education; as well as to create awareness amongst students from all over the world about circumstances of life in rural areas.

In 1978 the World Health Organization WHO set the goal of health for all in 2000 to achieve this goal many systematic steps were taken first, an initial training program called "Leadership Training for Health for All" was organized jointly by International Federation of Medical Students Association IFMSA and WHO.

Then in 1986, the "Intersectoral Action for Health" which was the first joint theme meeting of international student organisations (IMISO) & (IFMSA) was held in Geneva. In the same year, the IFMSA and the "Village Concept" organised the "Health Needs and Students' Action in Developing Countries upon which, a totally new approach in third world aid projects, was designed.

In 1987, The Village Project became a reality, in Ghana. Ten years ahead the VCP document was approved. IMISO was the umbrella under which many other Village Concept Projects were born but this intersectorial organization faced several financial and management problems.

The member organisations (IFMSA among them) decided to dissolve it and worked in a more unofficial and informal way. Following IFMSA's experience in Ghana, many such projects were realized (Sudan, Sudan II, Rwanda, Zimbabwe, La Joya, Tanzania, Panama...), in 2002 the ISAVCP (International Students' Association of Village Concept Projects) was born with a plan to conduct other VCPs all over the world.



SVCP1: Gezira State, Musalamia



SVCP11, Gedarif State, Elfaw area

### **Completed VCPs**

- Ghana VCP I:1988-1992
- Ghana VCP II:1994-1996
- Sudan VCP I:1994-1997
- Sudan VCP II:1998-2001
- Zimbabwe VCP: 1998 - 2001 (interrupted never completed)
- Mexico VCP: 1999 - 2000 stopped
- Panama VCP: 1999 - 2004 .Neema
- VCP Tanzania: 2001 - 2004

### **VCPs in process**

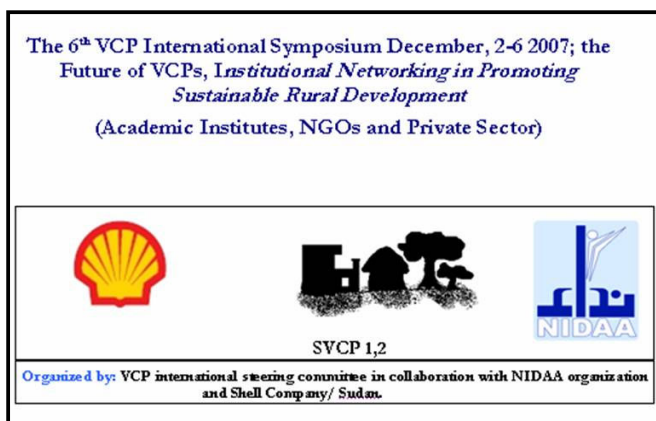
Rwanda VCP: 2000

- Ghana VCP III
- Sudan VCP III
- Burundi VCP
- Zambia:1996
- CalcuttaVP:1997
- Malaika VCP Tanzania



**VCP Symposiums:**

- 1995: 1st international symposium on VCPs in Germany.
- 1997: 2nd international symposium on VCPs in Sweden.  
(VCP document)
- 2000: 3<sup>rd</sup> international symposium on VCPs in Germany.
- 2002: 4th international symposium on VCPs in Denmark. ISAVCP (International Students' Association of Village Concept Projects) was born. Organizing committee was chosen.
- 2003: post symposium meeting on VCPs, Zimbabwe.
- 2004: 5th international symposium on VCPs in Tanzania (ISAVCP steering committee)
- 2007: ISAVCP steering committee in collaboration with NIDAA Sudanese Organization for Development and Shell Company\ Sudan had the honor to organize the 6th VCP International Symposium in Sudan from 2<sup>nd</sup> to 6<sup>th</sup> December



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## **About SAYS**

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The Sudanese Academy of Young Scientists (**SAYS**) is a non-governmental organization. It has been officially registered at the Ministry of Humanitarian Affairs under the umbrella of the Sudanese National Academy of Sciences (SNAS).

On the 15<sup>th</sup> of January 2007, the inaugural meeting of the Sudanese Academy of Young Scientists (**SAYS**) was held in the Institute of Endemic Diseases, University of Khartoum, and the proposal for establishing the Academy was discussed and approved.

### **The objectives of SAYS are:**

- Promote research and uphold the cause of science in its basic and applied forms.
- Help in the dissemination of science and research results through publishing and assisting in publishing periodicals, and through organization of scientific meetings.
- Raise community awareness about the importance of science and technology in sustainable social, economic and environmental development.
- Collaborate with similar regional and global organizations.
- Raise funds and accept endowments for the purpose of fulfilling its objectives.
- Help in capacity building of scientific institutions in the country.
- Award grants, scholarships, prizes and medals in the field of research for young scientists.

### **Membership Criteria:**

There are three types of membership; Full Membership, Partial Membership and Honorary Membership.

***Full Membership:*** The member should be below 40 yrs and has at least a master degree in basic or applied sciences.

***Partial Membership:*** The member should be at least a B. Sc holder in basic or applied sciences and not more than 30 yrs old.

***Honorary Membership:*** The member should have a university degree in basic or applied sciences and over 40 yrs.

## **INSTRUCTIONS TO AUTHORS**

Articles should be sent to the Editor-in-chief at [saysnewsletter@gmail.com](mailto:saysnewsletter@gmail.com)

1. Articles should be original and **NOT** submitted for publication elsewhere.
2. One complete electronic or hard copy of each article, including illustrations, should be provided on A4 paper, typed in 1.5 spacing, with 2.5 cm margins.
3. Tables should be used to present large amounts of numerical data and when they simplify the text: they should not duplicate the text. Each table should be typed on a separate sheet in double spacing, without ledger lines, together with its identifying Roman numeral and a short title.
4. The quality of illustrations in the Journal is dependent on the quality of the photographs, images and figures provided. Every effort should be made to ensure that these are the best available.
5. Articles submitted for publication will be evaluated by the Editorial Board.
6. Rejected manuscripts and illustrations will not be returned unless a specific request to do so is made at the time of submission.

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# Sudanese Academy of Young Scientists