

MAJOR RECOMMENDATIONS

Emanating from the

**National Seminar on
Recent Innovations in Health & Life Science
Research
(RIHLSR-2023)**



24-25 February 2023



Organised by:

Department of Zoology & Biochemistry,
Kakatiya University, Warangal-506009 TS

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Sponsored by:

Telangana State Council of Higher Education
(TSCHE), Hyderabad &
Kakatiya University, Warangal

**Recommendation from the Address of the Hon'ble
Vice-Chancellor Prof. Thatikonda Ramesh**

“Health comes with a good lifestyle”

1. Due to decrease in physical activity, changes in our lifestyle make us susceptible to diseases. Due to eating habits, smoking etc. the youth is suffering from terrible diseases like cancer.
2. Improving agricultural management using scientific means such as new innovations in life science and health research to provide agricultural planning and monitoring. Life science advancements provide us the chance to increase our awareness on health by making them more prevention to diseases.
3. There is a constant struggle between man and nature. Students' thinking needs to be broadened and should adopt a good lifestyle for better future. Sciences and faiths are different. Mechanization and industrialization will harm health.
4. Research should not be limited to labs. Another significant problem of the twenty-first century is to provide accessible healthcare and raise the standard of living for the elderly. We need to develop our scientific capacity so they can react quickly to issues like pandemics.
5. To attain our objectives of inclusive and sustainable growth, we require new approaches in many areas, including healthcare, life sciences, energy, urban infrastructure, water, other social issues, etc.
6. To encourage ideas, the nation must create an innovation health-system. Innovation practitioners must collaborate with laboratories and industries. The connections between academics, research, and industry need to be strengthened.
7. In order to expose our scientists to the best in the country and boost our competitiveness, Indian research should have a strong global orientation. Our science establishments should expand their global connections.

Recommendation from the Address of the Registrar of Kakatiya University Prof. T. Srinivasa Rao

1. Disease has little regard for national borders, as is well known, and the quick spread of several new and re-emerging illnesses, such as AIDS, drug-resistant malaria, and tuberculosis, has once again highlighted our interdependence—and vulnerability—in the face of these international challenges.
2. The human genome project, innovative technologies that have accelerated the development of drugs and vaccines, and the critical evaluation frameworks that are now available to assess the effectiveness of national health systems and health reform initiatives all hold the promise of more effective prevention, management, and treatment for a variety of serious health issues.
3. The multisectoral collaborations are becoming increasingly important in dissemination and implementation science. The event's last theme, Broadening Horizons for Impact: Integrating Multisectoral Approaches into Research and Development, centred on the Science of Dissemination and Implementation in Health.

Recommendation from the Address of the Dean, Faculty of Science Prof. P. Malla Reddy

1. India must take advantage of the capacity of contemporary science to benefit society. Some areas where Indian science should strive for world leadership include inexpensive breakthroughs for human healthcare, sustainable agriculture, renewable energy, and comprehensive answers for health research concerns.
2. Indian scientists must connect with the present, reflect on the past, and look towards the future. Science should be the engine that propels India as a revived civilisation that offers both hope and opportunity to young people.
3. Our basic research must be directed to produce new discoveries with imaginative attempts to develop cheap solution and the successes of science should be communicated to the general public.
4. Scientific communicators should concentrate more on the work being done in the labs, where the actual advancement of science is taking place.
5. Bioinformatics and Computational Biology which is so important in the sense it has been trying to replace destructive research procedures.

**Recommendation from the Keynote Address
Prof. Anita Jagota, University of Hyderabad**

1. To understand underlying mechanisms in the age induced stoichiometric alterations in interactomes of daily chronomics in neurodegenerative changes in the functional integrity of CTS, daily rhythms in various physiological, biochemical and molecular parameters.
2. Due to increase in life span in 21st century, there is a pressing need to understand therapeutic interventions towards targeting novel treatments for circadian dysfunction, good health and longevity.
3. Disturbances in the circadian rhythms cause a breakdown in the homeostatic balance. Such disruptions in normal circadian rhythms and sleep cycles affects aging and profoundly affect health thus leading to sleep disorders, metabolic and behavioural disruptions resulting in variety of diseases.
4. Several factors contribute to the above changes, emerging research suggests age-related modifications to the CTS is the key factor resulting in sleep disorders, cancer, metabolic, cardiovascular and neurodegenerative diseases like PD, AD, HD, ALS, dementia etc.

Recommendation from the Technical Sessions (Invited talks and Oral Presentations)

1. Obesity is reaching epidemic levels in both developed and developing countries. It is one of the most challenging global nutritional problems prevalent over the last two decades, eclipsing infectious diseases and under-nutrition as a significant mortality and ill-health contributor. Prevention and control of nutritional disorders and obesity is the only way to overcome this burden.
2. The youth should understand the burden of the most common Non-communicable Diseases, associated factors and appropriate health interventions before, during and after pregnancy, and through childhood to adolescence, can significantly reduce their prevalence.
3. Prevention, control and management of NCD are way forward by reducing the risk factors associated with effective health education, professional counselling and free health care etc., can be effective in controlling rising non communicable disease globally.
4. Understanding of the various dimension of obesity which is chronic but slow growing non-infectious pathology of body organization is need of the hour.
5. To explore the interplay of genetics, epigenetics, metagenomics and the environment, it is an attempt to study diet gene interaction (epigenetics) in the development/pathogenesis of obesity by deciphering the role of nutrition interventions which are essential in managing the risk of NCD-Obesity.
6. Phytochemical supplementation can benefit human health through supplying specific bioactive compounds which have preventive role in numerous diseases.
7. To examine the effect of phytochemicals in cancer initiation, promotion, signalling, and epigenetic changes should be studied well.
8. It is urgent need to develop various bioreactors and should be evaluated for the successful development of engineered bone tissue.
9. Improvements in the perfusion reactor system should be suggested from the one of the invited talk for the production of multiple tissue-

engineered constructs with uniform stem cell distribution, simple protocols, and the ability to effectively handle functional tissue development in order to meet the demand for engineered grafts in clinical applications.

10. The effects of diabetes and measures to regulate the disorders and the role of hormones induce and inhibit hunger and regulate the blood glucose level, it is recommended to balance energy and changing life style according to nature with good habit and nutritious food.
11. To generate potential anticancer, anti-diabetic and hypolipidemic agents, it is recommended to devise novel way of synthesizing hybrid molecules by connecting known pharmacophores to the potential plant bioactives.
12. The faculty and research scholars are recommended to collaborate with CSIR-CIMAP (Central Institute of Medicinal and Aromatic Plants), Research Center, Hyderabad to document Indian traditional health care system and to work on the all-round development of MAP's for the economic upliftment of rural farmer, entrepreneur and industry.
13. The compounds isolated from the marine mangrove action-bacteria suggested that, the apoptosis inducing potential in breast cancer therapy.
14. It is recommended that, the *Antheraea mylitta* larvae can be fed with spermidine treated *Terminalia arjuna* leaves for better growth rate and increased silk production and improved economic traits in all respects.
15. A gluten-free diet is essential for managing signs and symptoms of celiac disease and other medical conditions associated with gluten.
16. The research studies established that pharmaceutical residues in the aquatic environment pose a negative impact on the non-target organisms like fish.
17. The one of the session presentation helps in better understanding for the management of the Manakondur fresh water lake for intensive fish culture and plankton biodiversity.
18. It is recommended to understand the mechanisms of speciation and the evolution of new species in aquatic environments.

19. Additionally, metagenomic analysis should be used to study the presence of harmful pathogens in zooplankton populations, which can have significant implications for human health, especially in the context of seafood safety.
20. Poly herbal formulation should be well considered an effective bioactive molecule to suppress body weight and improve insulin and leptin sensitivity, ultimately leading to regulating obesity.
21. Most of the problems can be avoided if we create awareness on the side effects of the chemicals, in the process of silk production. Further use face masks, checking of spurious products, testing of cocoons and raw silk with ISI standards are necessary safety measures to be adopted.
22. Stringent actions should be taken by the Government whoever adopts unethical practices which leads to health problems in silk industries.
23. In highly endemic tribal regions like Adilabad in Telangana state, mother and child health interventions for conflict-affected people should incorporate systematic screening for malaria and anaemia. Rapid diagnostic testing should be used for all pregnant patients at every appointment, regardless of symptoms.
24. The genome editing (CRISPR/Cas9) mediated approach should be a helpful tool for analyzing functional genes and precision editing across different plant species, especially in the Solanaceae family.
25. The Agrobacterium-mediated genetic transformation protocol will be helpful for the development of new germplasm in tomato with novel candidate genes.
26. By providing safe drinking water to every home in communities where fluoride contamination was a problem through Mission Bhagiratha, the State government should be in halting the spread of new instances of fluorosis in the Nalgonda district.
27. There is an urgent need to develop metagenomics which plays an indispensable part in biodegradation of different types of plastics.
28. The research scholars and post graduate students should use composting procedure as a waste management techniques for turning organic waste

into a nutrient-rich valuable products with using from their college or university hostels vegetable residues.

29. To assure the security of sources of highly nutritious food, various disease concerns in aquaculture and their control strategies must be thoroughly developed.
30. Since bio-resources are a magnificent gift from nature to humanity, their sustainability can be directly related to rural livelihood and economic growth, scientific education should work to inspire students to use bio-resources in novel ways and to manage them sustainably.
31. To assure natural protection, an interactive group integrating animal science, health sciences, and agricultural science should be developed.
32. It is important to emphasise the use of molecular tools for diagnosing various diseases and nano-technological tools in rural health and livelihood.
33. The aquatic and terrestrial environments as well as animal resources are impacted by the improper use of pesticides. To lessen these issues, efforts should be undertaken through public-private partnerships. Environmentally friendly corrective actions should also be devised.
34. To make ethnobotany far more appealing and relevant to society, attention should be placed on the documentation of Indigenous knowledge and use of botanicals, as well as their validation and value addition for transforming them into medicines. To do this, an interface between biotechnology, molecular biology, and pharmacology can be developed.
35. Traditional indigenous knowledge-based natural resources (particularly herbal medicines) used in Indian traditional medicine systems like Ayurveda, Unani, etc. should receive special attention because they have a long history of use as complementary treatment and are also affordable.
36. Construction of gardens for the growth of medicinal plants. It is best to avoid taking these from the wild.
37. To further the exploration of scientific knowledge, national research funding organisations should allocate adequate money for basic science

research. Young researchers now struggle with how to begin research in the field of health.

38. The study of nature, health, and other molecular life sciences should be part of university curricula, and researchers should be encouraged to engage in cutting-edge health science research.
39. Create and promote health and life science research by developing multidisciplinary curricula, graduate training, and educator training.
40. Studies in biotechnology, microbiology, bioinformatics, and other modern biological disciplines at the undergraduate and graduate levels should include a core curriculum in basic health and life sciences.
41. Create the information sciences and technologies necessary for the advancement of health and life science research.
42. It has been recognised that many institutions should collaborate and that a framework should be established to share knowledge.
43. Take into account and adapt to the effects of the globalisation issue on the health sector.
44. Budgetary allocations and provisions for evidence-based learning to increase confidence in a world free of torture.
45. Concerned Central and State Government Departments, Universities, and Degree Colleges should be prepared to accept findings from various researchers on each subject area and make proper use of them.
46. The existing scientific institutions working on various elements of health and development, as well as the Departments of Life Sciences functioning at various Universities, need to be strengthened urgently in terms of staff, funding, and facilities.
47. Encourage the development of entrepreneurs by:
 - (a) Establishing more technology incubators in universities and research institutions;
 - (b) Promoting collaboration with industry; and
 - (c) Establishing state-level funds to foster and support the commercialization of fresh ideas for the benefit of society.