The Text of Address by Prof. J.S. Bajaj, Guest of Honour at the Convocation held on 30th October, 2010 at Government Medical College, Patiala

Your Excellency Sh. Shivraj Jee Patil, Governor of Punjab, President K.K. Talwar, Distinguished Colleagues on the Dias, Esteemed Fellows and Delegates, Faculty, Staff, Students of Govt. Medical College, Patiala and Honoured guests,

We are most fortunate in having Sh. Patil Jee at the 50th Annual Conference of the Academy, ushering the Golden Jubilee Commemorative Year of the National Academy of Medical Sciences. I always hold Sh. Shivraj Jee in great esteem as he is a graduate in science from Osmania University and later steered the implementation of the Technology Policy of Indira Gandhi's Government as Minister of Science and Technology, Atomic energy, Electronics, Space, and Ocean development. He was also the Vice-President of the Council of Scientific and Industrial Research. I deem it a great honor to associate myself with this function in his august presence and thank the Academy for this privilege.

As we are reaching the 50th milestone of our scientific Odyssey, let me make a brief reference to the establishment of our Academy.

In January, 1959, the Central Council of Health considered a proposal from the Government of Andhra Pradesh for the establishment of an All-India Academy of Medical Sciences. The proposal was a reflection on the pragmatism and foresight of Sh. Neelam Sanjiva Reddy, who took over as the Chief Minister of Andhra Pradesh on the 1st November, 1956. It was the first time that any Chief Minister had kept the portfolio of health including medical education under his own charge. The Central Council recommended that the proposal be circulated to the State Governments, Universities, and leading medical professional organizations for eliciting their views. In view of a most positive response, the following Resolution was passed a year later at the meeting of the Central Council of Health in May, 1960.

"*The Central Council of Health having very carefully considered the views expressed by the State Governments, Universities, and professional organizations on the proposal for the setting up of an Indian Academy of Medical Sciences,* ***welcomes*** *the proposal for the establishment of such an all-India institution with a view to bring on a common forum the best talent in the field of medical sciences in India.*"

Subsequently, a group of senior professionals who were pursuing these developments, were informed that it may take sometime for the Government to recognize the Academy by an Act of Parliament and was advised to go ahead with the plan to register it as a Society. It was pointed out that once the Society was registered and started functioning, the Government would consider the question of according suitable recognition and to give financial assistance. Accordingly, the Academy was registered on the 21st April, 1961, with the Registrar of Societies as the "INDIAN ACADEMY OF MEDICAL SCIENCES". It is entirely a different matter that even fifty years later the recognition of the Academy through an Act of Parliament is still awaited!

Inauguration of the Academy:

The Prime Minister Shri Jawahar Lal Nehru formally inaugurated the Academy at the function held at the Sapru House on the 19th December, 1961. He was also pleased to accept the Honorary Fellowship of the Academy. Addressing the gathering, the Prime Minister said that he hoped the Academy would lay stress on the pursuit of research work and simultaneously ensure that high standards were maintained.

Deprecating the tendency to pack new institutions with people without regard to their qualifications, Mr. Nehru warned that this would inevitably lead to the lowering of standards. He added that while he had accepted the Honorary Fellowship of the Academy with a sense of gratitude, it remained an honour only as long as it was restricted to a select group.

Mr. Nehru said that he wanted the Academy to restrict its Fellowship to only men of outstanding achievement in the field of medical science. **His speech was in the main devoted to the need for**

research. Research, he said, was an inseparable part of any systematic pursuit of knowledge and, therefore, it was imperative that the quality should be "absolutely first class".

Right from its inception, the Academy has laid major emphasis on research. It has relentlessly pursued its primary objective : '***the cultivation of scientific knowledge and its application to human welfare***'. The progress of the Academy over the years affirms discernible signs of fulfillment of this objective through basic, applied, and community health research by a number of Indian scientists, all of whom have been honoured with the Fellowship of the Academy over the years, and others who are the recipient of this honour to-day.

Scientific research leads to new discoveries and new knowledge. It is often said that while basic research aims at understanding the structure and function of nature, applied biomedical research aims at understanding the structure and functions of human being as a complex organism. Basic and applied research are indeed complementary. Often, there are significant spin-offs of basic research. Advances in unrelated fields such as Lasers, nuclear magnetic resonance (NMR) and semiconductors have not only enriched understanding of physics, their application to medical research and clinical care have enhanced the quality of human life. However, both basic research and applied research have their limitations. Sir Peter Medawar who shared the Nobel Prize with Sir Frank Macfarlane Burnet in 1959 once said : "If politics is the art of possible, research is surely the art of the soluble". May I most humbly add that both in politics and research, ethical practices must constitute the key determinant of public good.

Fundamental new knowledge in biomedical sciences and development of new drugs and devices, alongwith emerging ethical demands and socioeconomic developments continually pose a formidable challenge which must be responded to through quality assurance in biomedical research and quality development of health care delivery system. The Academy has, and will continue to focus sharply on these critical pre-requisites. While recognizing and upholding the need of quality of scientific research, the Academy must also take cognizance of growing concerns regarding the credibility and integrity of such research. May I share with you two highly publicized recent episodes, published since we met in Lucknow last year.

According to journal 'The Lancet', on December 19, 2009 editors at Acta Crystallographica 'alerted the scientific community to a disgraceful pattern of fraud involving 70 papers published by two Chinese groups of investigators, led by Hua Zhang and Tao Liu from the Jinggangshan University, China. All authors of 41 papers by Zhang group, and of 29 papers by Liu group have agreed to a retraction of all their published data. The enormity of scientific fraud at such a megascale, defying detection both by the peer review and editorial oversight, has shaken the faith of scientific community and has cast a shadow on 2,71,000 papers published by Chinese authors in 2008, as per information available at ***Scientific Citation Index***. Such a large scale of scientific misconduct has taken place inspite of the regulations to monitor state-funded research projects that were announced in 2006 by the Chinese Ministry of Science and Technology in response to six high-profile cases of scientific misconduct. These efforts at safeguarding the conduct of scientific research have now been reinforced by the Chinese authorities through a series of measures announced on 19 March, 2009 which include warning, dismissal, legal action and revocation of awards and honours with respect of all scientific investigators with proven misconduct. Prime Minister Hu Jintao's goal of China becoming a research superpower by 2020 is indeed laudable: however, it also needs to be credible!

It should be no consolation to the Chinese that situation was no different in the United States of America, where credibility of clinical research was seriously challenged in the 334-page investigation report of the United States Senate Committee on Finance, released on February 20, 2010. It deals with an area of my own interest, Diabetes. A 2-year investigation, by Senators Max Baucus, as the Chairman and Chuck Grassley, the Ranking Member, and others has uncovered the facts that excess cardiovascular events in patients with Type 2 Diabetes Mellitus who were on rosiglitazone, marketed in the US under brand name *Avandia*, were apparent as early as 2004, but according to the Lancet, "the manufacturer GlaxoSmithKline (GSK) intimidated researchers and manipulated the scientific process for commercial advantage."

To this controversy may be added Steven Nissen's account, as published in March 24-31, 2010 issue of the Journal of American Medical Association (Vol. 303), which gives a vivid description of a manuscript leaked by a peer reviewer, indiscreet industry e-mails and clandestine tape recordings – all adding up to an espionage novel worthy of John le Carré's pen.

As Lancet succinctly puts it in its Editorial : 'the trust between doctor and patient, researcher and participant, or author and editor is undermined when the foundations on which evidence is built are treated with such casual contempt. The only winners are those who would promote market-led, anecdote-based medicine, without regard to effectiveness, safety, or cost'.

The Academy is deeply conscious of the need of ethical behavior both in professional practice as also in basic, clinical and community health research. Misconduct in research (for example, fabrication, falsification, and plagiarism) not only damages the scientific milieu, it tarnishes the prestige of scientific community and undermines the trust of younger biomedical scientists in science as well as in scientific academies. How does one ensure *Best Practices for Scientific Integrity and for Preventing Misconduct in research?* My own understanding is that scientific conduct, like definition of health, should not be a mere absence of disease or in this case absence of misconduct. Like health, which is a positive state of physical, mental and social well being and where foremost aim is health promotion and disease prevention, the foremost aim in Academic and Research Laboratories should be promotion of good research conduct. Diagnosis and punishment of fraud and misconduct should only be secondary. Thus "behaviour by a researcher, intentional or not, that falls short of good ethical and scientific standards, must be considered inappropriate." More specifically, research misconduct may include falsification, fabrication, and plagiarism (FFP) in proposing, performing, or reviewing research, or in reporting research results. Selectively excluding part of data from analysis; misinterpreting data to obtain desired results (including inappropriate use of statistical methods); doctoring images in publications; and producing false data or results under pressure from a sponsor, and at times, even from a guide or preceptor, must constitute gross misconduct and awarded exemplary punishment. The Academy, through its Academic Council, shall endeavour to prepare a policy document on Ethics and Integrity in Biomedical Research. The document may provide valuable inputs to draft National Health Research Policy which is under active consideration.

Excellency and Colleagues, if we have to live upto the dream of Jawaharlal Nehru who visualized our Academy to be a first rank leader of good quality research, it is inherent that both as medical scientists and as a collegium, we establish and maintain highest traditions of exemplary research conduct and high scientific values.

Permit me to conclude by a couplet from Sir Ilama Iqbal :

Yahi Ain-e-qudrat hai, yahi asloob-i-fitrat hai,
Jo hai rahe-amal men gamzan, mehboob-e-fitrat hai.

(This is the law of nature; this is the essence of life style. Those who follow the righteous path, enjoy all blessing of nature.)

Once again, my grateful appreciation for your kind and patient hearing.