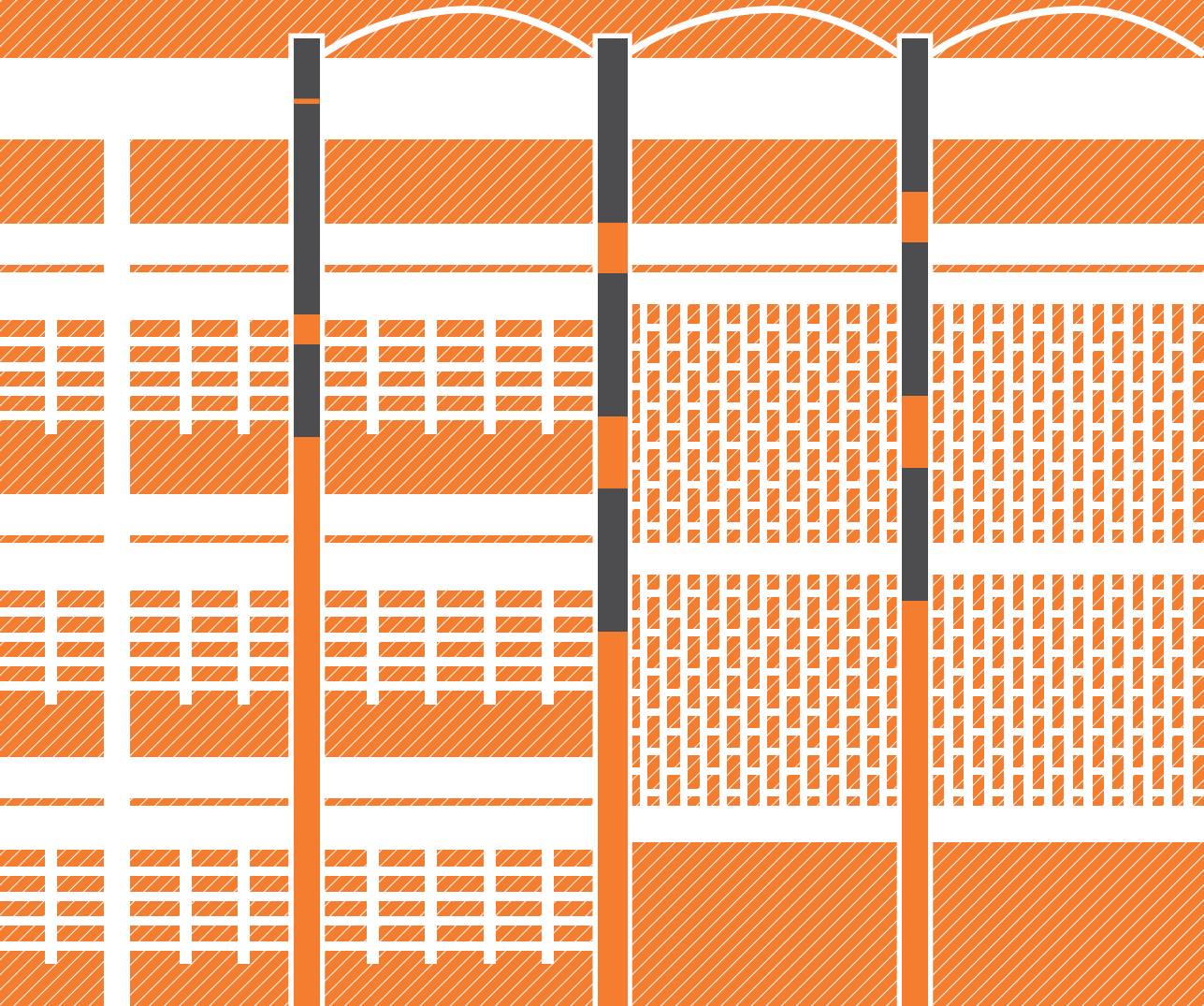
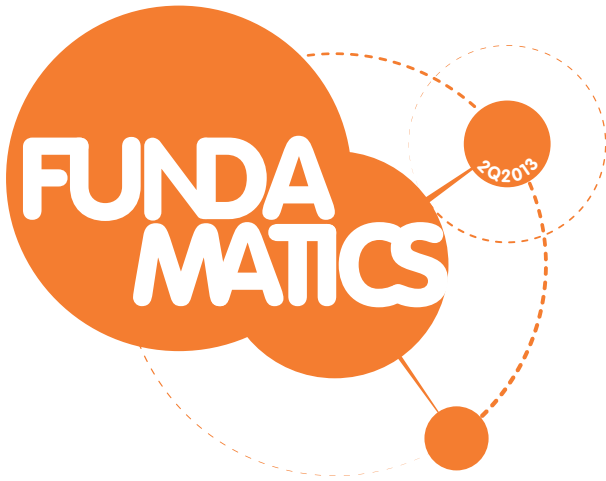


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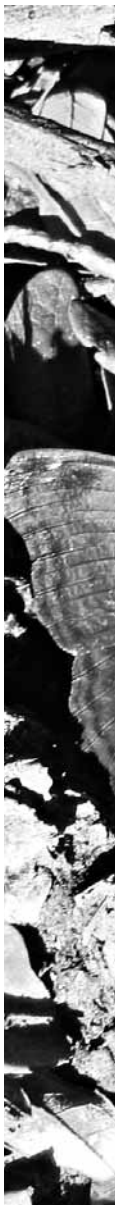


IIT BOMBAY ALUMNI
ASSOCIATION

Quarterly magazine of
IIT Bombay Alumni Association

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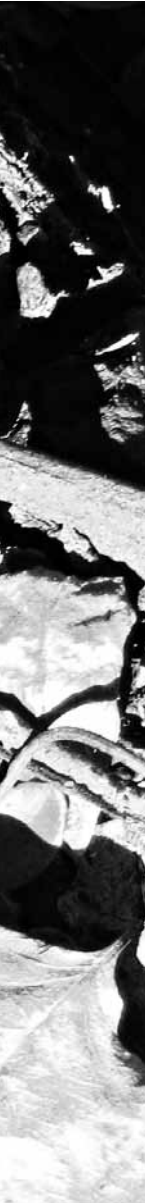
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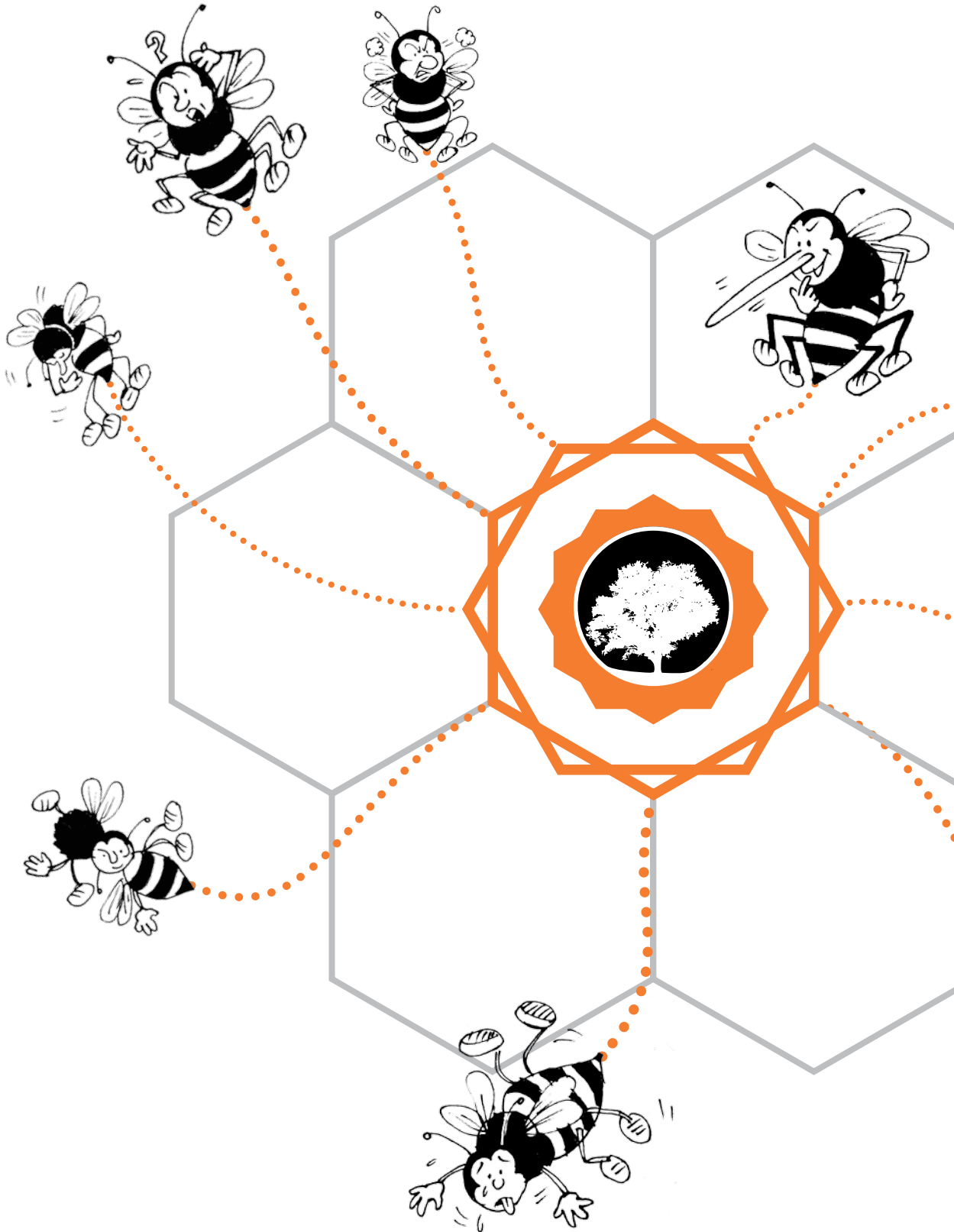
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From the Beehive



India, it is often said, is a land of myths and fables. We generally take it as a compliment, but I wonder if what is implied is not that we tend to exaggerate and take liberties with the truth. One such myth is that the IITs are the brainchild of Jawaharlal Nehru (I dropped the Pandit, not wanting to appear casteist) our first PM. The truth is more nuanced however, though he was certainly the most influential champion of the IIT idea. As Rohit Manchanda has described in *Monastery, Sanctuary, Laboratory*, the idea was mooted in a note prepared by Ardeshir Dalal, shortly after the end of WWII, for Jogendra Singh who held the Education portfolio in the Viceroy's Executive Council. This led to the formation of a committee (what else!) headed by Nalini Ranjan Sarkar to prepare a proposal. The Sarkar committee submitted an interim report in 1946 based on which the first IIT was established and the first batch started classes in 1951 at Kharagpur. The Parliament got around to passing the IIT Act in September 1956, just in time for the first batch to receive degrees! So if the Foundation Day issue of *Fundamentals* comes out a few days after the event, we are only following tradition.

This issue provides sketches of the early Directors by Profs. Sukhatme and Narasimhan, both of whom were intimately involved in setting the trajectory that IITB has taken. Prof. Ashok Misra, during whose term

The background of the page is a solid orange color with a white geometric pattern of interconnected lines forming various sized triangles and polygons.

IITB celebrated its Golden Jubilee, gives a very readable account of the initiatives and achievements of his term. While Prof. De was travelling abroad during the past couple months and thus not available, Prof. Khakhar has chosen to let his work do the talking.

The event that caused millions of Indians to hang their head in shame, unfortunately did not provoke many to take part in PKG3.

Personality features Prof. Deepak Phatak, our very own Padma Shri. Humblebee has tried to do justice to this remarkable alum and prof who seems to be able to tap into some mysterious source of energy; if only more of us could do that!

Vivek Borkar exhibits his colourful plumage and sharp fangs while classifying the various species inhabiting Indian Science. He himself certainly is a Primma donnae though he may not consider himself Fundsenhonour disbursae. I am sure readers will find his piece educative and it will encourage them to look for similar species in their own habitat. Behruz Sethna and Rustom Kanga provide further evidence that it takes a sense of humor to survive IITB, while others provide proof of the need for it.

Wishing you happy reading.

Ali Baba

Readers Write in

ONE

Hello everyone,

Congrats on the anniversary issue. Have loved getting the mag in mail (yes real mail, not email) every quarter. Have even opened a read a few pages once ;)

Writing to you all to let you know about the facebook page I created for the magazine - <http://www.facebook.com/Fundamatics>

Please like and share the page in your circles.

-Prateek Sharma, B.Tech. '02 EE

TWO

I got your email just before midnight when I was about to go to bed. Three hours later, I am finally done with the magazine. Only other occasions I have read cover to cover at 3 am were Matra's letters when we were dating.

I don't think anyone can give you better compliments.

Rajesh Masbruvava, B.Tech. '75 ME

THREE

This *Fundamatics* issue was fantastic.

Keep it up

A.Sankholkar, 1974 B.Tech , H4.

FOUR

Many thanks for the anniversary issue of *Fundamatics*. Thanks so much for sharing such wonderful stuff - featuring the Girish Sant Memorial lecture by Sripad Dharmadhikari - another serious activist.

The magazine despite good worthwhile stuff is very readable. It could easily have become a page 3 type meant for the glitterati and chatterati.

So, thanks to your sensitivities it offers serious stuff in a very accessible manner.

love and peace

- Arvind Gupta, Alumni of IITK

FIVE

Congratulations to you and your TEAM on a significant achievement in starting up a thriving *Fundamatics* periodical.

I enjoyed many of the articles especially the one by Kumar Speedy on Hostel 5. It brought back memories. Others were a little beyond me. I read all the bios on the authors to see if I could connect them with any other readings I had done.

Glad you got Daffy to write again.

Daffy, enjoyed your article and was impressed by your dedication to the environmental cause



Also enjoyed the article on Kumar Speedy on Hostel 5. He mentions Vikas Tipnis with whom you had connected me a few years ago on some IIT-alum matter.

- *Sailesh Kapadia, ME-68,H-5*

Six

I am very happy to see that *Fundamatics* is doing well. It is a pleasure to read every issue.

- *Prof. SP Sukhatme, Ex-Director IIT Bombay*

A few good men

Institutional histories can be written not just as stories of brick and mortar, development and change, but also as chronicles of those who scripted and guided its destiny. IIT Bombay has had six directors at its helm since its inception with a seventh currently at the helm. Each brought something special to the job and the telescope of history is a perfect lens to analyse their contributions. Then again, that is a task well accomplished by Robit Manchanda in his seminal work on the history of IIT Bombay entitled Monastery Sanctuary, Laboratory: Fifty Years of IIT Bombay.

The Foundation Day issue of Fundamentals, as is the practice, devotes its thematic section to IIT Bombay and for this issue we decided to focus on the past Directors of IIT Bombay. After all, biographies contribute to who we remember and how we remember them. Yet biographies differ considerably in style and form, while some privilege their subjects, others adding their minor comment, and some that take more liberty, weaving facts with narration. While we managed to cover five out of our six past directors the style and form vary widely. Prof Misra's account is autobiographical, while Prof Sukhatme, that living store house of IIT Bombay's history, has come forward to share his memories of two of the past directors: Brigadier Bose and Prof. Nag. Since he had contributed two of the pieces it seemed tad unfair to request him

to write his memoirs of his tenure. Hence, most of the information for his era is culled from his book Four Decades at IIT Bombay, which is a collection of his conversation over several hours with Prof Robit Manchanda when he was researching his book. For Prof Kelkar, we turned to Prof Narasimhan who has done a wonderful job of bringing his gentle but wholly cerebral character to life. Remembrance is often the best way to pay our respects and while these are not works of academic history these should none the less be a valuable read for those interested in the making of memories and Institutions.

Noseybee



Prof. S. K. Bose

Some Recollections

Prof. S. P. Sukhatme



Prof. Bose was the founder Director of IIT Bombay. He joined in 1959 and was the Director for ten years, up to 1969. It was during the early part of his tenure that the Institute moved from its temporary location in Worli to the Powai campus. I joined the Institute in October 1965. Thus, there was a period of about four years when I was an Assistant Professor at IIT Bombay and he was the Director. In this article, I will write a little about Prof. Bose and his work. I will also describe some personal interactions with him which made a very positive impression on me.

The first time we interacted was through letters. After completing my doctorate at MIT in 1964, I was working as a Research Engineer in a company in Cambridge, Massachusetts. I had decided then that I would return to India after a year or two and take up a career in teaching and research. That was the period when the IITs had just been set up and I felt that an IIT would be the place for me to go. I was also interested in a career in research by itself and Atomic Energy was one area in which I was keen to work. So towards the end of 1964, I wrote to the Directors of IIT Bombay and IIT Delhi. I also wrote to Dr. Homi Bhabha directly and to one or two other persons. I sent a one-page bio-data along with a covering letter stating my interest in a teaching and research career.

Out of all these persons, the only person who replied personally was Prof. Bose. He wrote saying, "I am glad to receive your letter indicating your interest in coming here. At your level, we would probably take you as an Assistant Professor. I would certainly be interested in knowing your plans to come back so that we can discuss the matter further." It was a brief letter, but what I appreciated was that he was encouraging and that he took the time to reply to me. In the case of the other organisations, I did receive replies. But these were quite impersonal. For example, I did receive an envelope from IIT Delhi containing a blank application form for a faculty position. Similarly, the Administrative Officer of the Atomic Energy Establishment wrote saying that they were glad to know that I was coming back and that I should contact them after returning to India. Such replies do put you off.

It makes a lot of difference when somebody in authority writes to you in an encouraging fashion. Of course, subsequently, I did fill up a formal application form for IIT Bombay. My application was considered in absence by a Selection Committee and a formal offer was sent to me. IIT Delhi also sent me an offer. So I had two offers to choose from and if you were to ask me, why I chose IIT Bombay, I would say it was because Prof. Bose had personally inter-

acted with me. It does make a difference. In one place, you feel you are wanted. In the other, it really doesn't matter to them whether you join or you don't. When I wrote to Prof. Bose accepting the offer, I said, "I need some time to join because I am working in the USA. I need six months." He again wrote to me saying, "I am happy you have accepted. You have asked for six months time, so I expect you will join us in October. But please don't ask for a further

Prof. Bose spoke with a soft voice and had a way of sitting with his head on one side. When he laughed, it was the laughter of a child, a pleasant gurgling type of laughter.



extension. That will be difficult for me to give." I thought that was very fair.

Let me digress a little to say that the way Prof. Bose handled my case influenced me a lot. Much later, when I was the Director, I was quite particular about the faculty recruitment process. There is a formal side to it, in the sense that there is an advertisement, a formal application, a selection committee meeting, etc. But there is also an informal side in which the Director, the Dean (Faculty) and the Head of the Department have an important role. With e-mail, internet, video conferencing, etc., there are so many ways of communicating with people whom we are interested in having as faculty. Competent people will always have many choices before them. Informal approaches can make the difference between either getting that person to join your institution or losing him to some other institution. So not only did Prof. Bose influence me in joining IIT Bombay, but he

also influenced me in the way I acted while recruiting faculty for the Institute thirty years later.

Now till the time I joined IIT Bombay, I had no idea what Prof. Bose looked like. I knew that he had been in the Indian Army, had served in the Middle East during World War II and that he had retired as a Brigadier. And so the picture in my mind was of a no-nonsense person with an erect stature, a clipped British accent and a moustache. You can imagine my surprise when I walked into his office at 11.30 am on October 11, 1965. The person in front of me was so different from what I had imagined. He was bald with a little hair on the sides. He had a genial look and, of course, there was no moustache. He spoke with a soft voice and had a way of sitting with his head on one side. When he laughed, it was the laughter of a child, a pleasant gurgling type of laughter.

Here I must recall what happened on that day. When I reached the Institute, I asked for the Director's office. It was in the Main Building and I was guided upstairs. I met his secretary, Mr. Kulkarni, and introduced myself. He went inside and told the Director that I had come. Prof. Bose was with somebody then, but called me in immediately. As soon as I went in, he said, "I am happy you have come. We have been looking forward to your joining. It is very good." He remembered our correspondence and said, "There is a room booked for you in the Staff Hostel. Please go there and get the keys for it." Then he said something very interesting. He looked at his watch and said, "It is quarter to twelve. You know what you should do first. You should go upstairs and sign your joining report. If you don't sign before noon, it will mean that you have joined in the afternoon, and if you

have joined in the afternoon, you will only get half a day's pay for today. You don't want to lose half a day's pay, do you?" I said, "No." Half a day's pay was about Rs 20 at that time. He told his secretary to phone upstairs in the Administration office. So I went up and signed the joining report. That was my first meeting with Prof. Bose. First meetings are sometimes important, because they leave lasting impressions. My first impression was of a person who was practical in his outlook and cared for his faculty – a person who treated his faculty as one big family.

Prior to joining IIT Bombay, Prof. Bose was the Commandant of the College of Military Engineering in Pune. I believe one of the reasons for appointing him as the Director of IITB was to speed up the construction work on the Powai campus. The Institute began functioning in July 1958 in one half of the newly constructed building of the Synthetic and Art Silk Mills' Research Association (SASMIRA). This enabled IITB to admit the first batch of 100 undergraduate students. However, one of the conditions laid down by SASMIRA was that IITB would move out in two years by July 1960.

The land in Powai had been acquired in advance. However, in the first six months from July 1958 to January 1959, the progress of construction work was very slow. The main reason for this was that the work had been entrusted to the CPWD. Its head office was in Delhi where all decisions were taken. There was only a zonal office in Bombay. The CPWD was in no hurry to execute the work. Prof. Bose has described the situation well in the book 'The Early Years' written by him after his retirement.

In the midst of all these activities, the Institute received intimation from the Ministry of Education that Prime Minister Pandit

Jawaharlal Nehru had accepted the request to lay the foundation stone of the Institute and that March 10, 1959 had been fixed as the date for the event. Attention was diverted to building approach roads to the site where the Main Building is today. A certain amount of levelling work also had to be done at the site so that a podium and seating arrangements could be made under a pandal. Many dignitaries were present at the function and the Prime Minister made

He was a stickler for punctuality. I remember one meeting of the Senate Standing Committee scheduled for 2 o'clock. Some of the professors came a few minutes late. He kept quiet until everyone had settled down. Then he said, "Gentlemen, this meeting was at 2 o'clock. I want all of you who came late to stand up and apologise for coming late."



an inspiring speech. At the conclusion of the ceremony, Panditji was driven around the campus by Prof. Bose in an open jeep so that he could see the construction work under progress. There wasn't too much to show, just three workshop bays and two teaching-cum-storage (TCS) sheds were partially ready.

The workshop bays and TCS sheds were finally ready by June 1959. At this time, Prof. Bose took the bold decision that instruction for the second batch of 100 students admitted in July 1959 would be in these bays and sheds. The bays served as departments and provided some laboratory space, while the sheds had make-shift

classrooms and some office space for staff. The students were brought daily by buses from Worli to Powai. In the meanwhile, instruction for the first batch of students who were now in their second year continued at Worli.

In July 1959, the Board of Governors met to take stock of the building programme. The Chairman of the Board was the noted industrialist, Shri Kasturbhai Lalbhai. Shri Lalbhai took note of the slow progress and suggested that the Board should appoint a private architect and take over the responsibility of construction from the CPWD. He pointed out that if this was not done, it might be necessary to suspend new admissions in July 1960 because of lack of built-up facilities at Powai. Accordingly, this decision was taken and the Government of India agreed to it despite the fact that it was a deviation from the accepted practice.

From that point onwards, things really started to move with Prof. Bose being the prime mover. He supervised matters from day-to-day and shifted his residence to the only accommodation existing on the campus, the Chintan Bungalow. As I said earlier, July 1960 was the date by which the Institute was required to move out of SASMIRA. Prof. Bose set the goal of achieving completion of a certain minimum number of academic and residential buildings by that date. By July 1960, the ground floor of the Main Building consisting of a series of classrooms was ready. Thus the two TCS sheds which had served as classrooms in the previous year could be vacated. They were used to store the large number of crates of Soviet equipment which had arrived and needed to be sheltered during the monsoon. On the residential front, the ground floor of Hostel One was ready along with its dining hall.



Courtesy :Prof Arun Inamdar, IIT Bombay

The Institute shifted out of SASMIRA in the summer of 1960 as promised and from that point onwards, the pace of construction really picked. I think that a lot of credit is due to Prof. Bose for having got the Institute going on the new campus. It was a time in which both steel and cement were in short supply and their sale was controlled. Much of his time went in trying to get the materials of construction. He was a civil engineer, and had been associated with a lot of construction work. He worked tirelessly and knew how to get things done. However, in retrospect, it must be said that the quality of construction did suffer on account of the hurry and shortage of materials and the Institute paid heavily for it in later years.

One very pleasant characteristic of Prof. Bose was that he knew all the faculty members by name. The number was a little smaller than now and we used to meet more frequently at Staff Club functions and other occasions. Powai was an isolated place in the sixties. With fewer outside distractions, people tended to get together. If Prof. Bose met a faculty member during any function, he would enquire about the family and so on. I think he liked doing that. At heart, he was an exceedingly nice

person. I met him off and on, sometimes in his office but more often at such functions in the evening. In 1965, I was twenty seven and he was fifty six, about the same age as my father. So the relationship was also like that. I respected him a lot and he in turn had a soft corner for younger faculty. His attitude was, so long as they are doing well, working hard, that's fine. That was his way of handling things.

Another characteristic of Prof. Bose was that he was a stickler for punctuality. He didn't like people being late. I think it was the army training. I remember one meeting of the Senate Standing Committee scheduled for 2 o'clock. He was there on time. Some of the professors came a few minutes late. He kept quiet until everyone had settled down. Then he said, "Gentlemen, this meeting was at 2 o'clock. I want all of you who came late to stand up and apologise for coming late." Three or four faculty members stood up and said they were sorry. He said, "Fine, now we will carry on." He was particular about time. I think it is quite fair to expect people to come on time for a formal meeting which has been announced. It is something which I feel strongly about too. If attending a particular meeting is not your priority, then say so and don't come; but if you are going to attend, come on time. I think people like Prof. Bose who had these habits of punctuality, influenced younger persons for the better by their actions.

Prof. Bose was not a research-oriented person. He could see the importance of research and he tried to tell faculty members to do research. I do remember that he held a series of one-day departmental workshops in which we had to present what we were doing by way of research. He attended each department's presentations to get an idea of what was going on. But you

know, if you have not done much research on your own, you are not likely to make an impression. I don't think a beginning was made in his period. I would say we started to get into a research mode.

Prof. Bose's tenure was a period of setting up the whole physical plant, the buildings, the laboratories, the hostels, the staff quarters, etc. He was passionate about building the infrastructure, about teaching courses and about setting up labs. Getting the campus up and going was an enormous job. It took a lot out of him and out of the people concerned. I think within the limitations of the institute's budget and the operational difficulties he encountered, he did some wonderful things. Today we are reaping the benefits of all that he did during the first ten years and we remember him therefore with gratitude for his yeoman contributions. ●



*Prof. S. P.
Sukhatme*

Padmasbri, Prof. S. P. Sukhatme, is a Professor of Mechanical Engineering who has been the Deputy Director (1983-85) and then the Director (1995-2000) of IIT Bombay. He is known for his outstanding contributions both in teaching and research in the areas of Heat Transfer and Energy. He has been a recipient of the Shanti Swaroop Bhatnagar Award (1983), a Fellow of the Indian Academy of Sciences (1986) and a Fellow of the National Academy of Sciences (1999). He was also the Chairman of the Atomic Energy Regulatory Board for five years till 2005.

A Man who saw Tomorrow: Prof. P. K. Kelkar

Prof. S. Narasimhan

Few people have served the cause of technical education in India with more devotion and brilliance than Prof. P. K. Kelkar. It is a privilege, therefore, for me to write this article about him.

Prof. Kelkar was born in 1909 and received his Bachelor's degree in Physics from the then Royal Institute of Science, Bombay. Thereafter, he obtained the post-graduate diploma in Electrical Engineering from the Indian Institute of Science, Bangalore before proceeding to England for his doctoral studies. He obtained his PhD from the University of Liverpool in 1937 and returned to India to join as a faculty member at IISc. He worked there till 1943 before coming back to Bombay as Professor and Head of the Department of Electrical Engineering at VJTI.

Professor Kelkar's association with IIT Bombay started with his being nominated as a member of the UNESCO Mission that visited USSR in 1955 to consider the establishment of a new IIT in Bombay with UNESCO collaboration. He was appointed as the Planning Officer of IIT Bombay in 1956 and as the Deputy Director a little later. He had virtually the status and powers of a Director and recruited the first batch of faculty members in different disciplines. The educational program of the Institute also commenced under his stewardship in July 1958 with the admission of the first batch of

one hundred undergraduate students.

The first time I met Prof. Kelkar was at the selection committee meeting held in March 1958 at the Tea Centre near Churchgate to select the first batch of faculty members for the Institute. Given my background in water resources engineering and fluid mechanics, Prof. Kelkar raised the following interesting question during the interview: If an unlimited amount of energy is available at zero cost, can the water problems of the country be solved? There was a lengthy discussion on the technical and socio-economic problems involved, and many alternatives were discussed. Towards the end, I can still recall Prof. Kelkar saying that the concepts suggested could be utopian, but needed to be whetted by realities. That was Prof. Kelkar in a nutshell – a sensitive idealist, a person with depth and erudition and at the same time, a pragmatist when it came to implementation.

The next time I met Prof. Kelkar was when I joined the Institute in November 1958. Our meeting took place in his office in the Silk and Art Silk Mills Association building in Worli from where the Institute had begun to function. This time, after welcoming me to the Institute, he discussed with me his philosophy for recruiting faculty. He said he was keen to bring in people from different schools of learning so that there would be a blend of various flavours in the teaching and



Image Courtesy: Monastery Sanctuary Laboratory: 50 years of IIT Bombay by Robit Manchanda

research activities of the Institute. Since I had come from the Imperial College, he asked me to interact with Prof. J. T. Panikar, who had done his doctoral work in France, and Prof. R. K. Katti who had come from USA. He also said that he cherished the hope that many of our IIT graduates would take up teaching and research careers. Readers of *Fundamentals* may wish to note that there was a twenty year age difference between Prof. Kelkar and me. They can therefore imagine the kind of learning experience I went through during my interactions with Prof. Kelkar.

Having been associated with the establishment of IIT Bombay right from the beginning, it would be fair to say that Prof. Kelkar was deeply disappointed to learn in late 1958 that someone else had been appointed as the Director of IIT Bombay. He considered

leaving and going back to VJTI, but fortunately stayed on as Deputy Director. In 1959, he was appointed as the first Director of IIT Kanpur and assumed charge immediately in December 1959.

The decade that he spent at Kanpur was a golden period for him and for IIT Kanpur. He helped in planning and setting up one of the finest institutions in the country. A remarkable set of highly educated and moti-

Prof. Kelkar in a nutshell – a sensitive idealist, a person with depth and erudition and at the same time, a pragmatist when it came to implementation.



ivated faculty was recruited, and a science-based engineering curriculum with a strong component of humanities and social sciences was introduced. In this endeavour, Prof. Kelkar was helped by a number of American professors who came to Kanpur from a consortium of nine leading US universities.

In April 1970, after completing his term at IIT Kanpur and having reached the age of retirement, Prof. Kelkar was preparing to leave Kanpur when he was given an extension of service and requested to come back to IIT Bombay as the Director. He did so immediately. At IIT Bombay, Prof. Kelkar was in familiar surroundings. He knew many of the faculty members, had followed the growth of the Institute and knew its strengths and weaknesses. He set up several committees such as the Curriculum Committee and the Rules Committee for introducing continuous evaluation, grading patterns. Above all, he set up the Committee for Reorganisation of Academic Bodies which clearly enunciated the structure and functions of various

academic bodies both at undergraduate and postgraduate levels. He established an order in the initiation of new disciplines, new courses, their constant revision and their evaluation. His short tenure of four years till July 1974 can only be described as a remarkably productive period for the Institute.

I remember that in 1971, Prof. Y. N. Bapat and I were inducted by Prof. Kelkar to draft an advertisement for faculty positions. Our first draft followed the classical pattern of stating eligibility requirements, departmental requirements, etc. It was prosaic and factual. Prof. Kelkar was disappointed and talked to us at length about his vision of sending out IIT graduates with an integrated personality. He said that we needed to recruit faculty members who appreciated this vision and could groom students with this goal in mind. Prof. Kelkar had this innate quality. He did not tell you directly what one should do, but made you understand what he wanted. Our final draft had a preamble that threw a challenge to brilliant scientists and engineers to come to IIT Bombay and blend themselves in an atmosphere of intellectual freedom where teaching and research was open-ended, cutting across different disciplines of science and engineering. The advertisement ended by detailing facilities in the scenic precincts of the campus and a list of the existing departments. A very good response was received to the advertisement and I recall the care with which Prof. Kelkar personally scrutinised the resume of each candidate to evaluate his suitability.

At a personal level, Prof. Kelkar was always well attired. He was soft spoken and had an impeccable command of English. This was evidenced by his opening remarks at all meetings of the Senate over which he presided. He was a little reserved in nature and did not mingle freely with faculty or



Courtesy :Prof Arun Inamdar, IIT Bombay

Prof. Kelkar had this innate quality. He did not tell you directly what one should do, but made you understand what he wanted.



students as Brigadier Bose would do. He also kept himself shielded from routine work by appointing two Deputy Directors, Prof. N. R. Kamath for academic matters and Prof. J. T. Panikar for administrative issues.

Prof. Kelkar had planned a grand Student Complex (Gymkhana) embracing all facilities required for sports and extra-curricular activities under one covered roof. The model was on display in the foyer of the Main Building. Unfortunately, due to non-availability of funds, the project never saw the light of the day, except perhaps the Swimming Pool. During the tenures of Prof. Kelkar and Prof. A. K. De, there were serious financial restrictions and the Ministry released very limited Plan funds to the Institute. I do feel that if Prof. Kelkar had continued to be with the Institute in the early stages, there would have been a better master plan, uniform architecture, high-rise buildings and other campus facilities.

Prof. Kelkar was awarded the Padma

Bhushan by the Government of India in 1969 and IIT Kanpur conferred on him the degree of Doctor of Science (honoris causa) in 1981. The Central Library at IIT Kanpur has also been named after him. Many may wonder as to why IIT Bombay did not recognise his contributions. On behalf of the Director, Prof. Kane and I met Prof. Kelkar at his residence in 1983 to obtain his consent to receive the D.Sc. degree (honoris causa) in person. This was the Silver Jubilee year of the Institute and necessary approvals had been obtained from the Senate and the Board. We spent nearly two hours with him during which he recounted his early association with the Institute and the dreams he had for it. His disappointment in not being appointed the first Director remained till the end. He said that he would not come in person but preferred to receive the degree in absentia. This was against the procedure for the conferment of the degree. Hence the matter rested without any further initiative.

Professor Kelkar was an outstanding educationist of the twentieth century in the field of scientific engineering and his vision will prevail. It would be indeed appropriate for IIT Bombay to pay a permanent tribute to his contributions by naming some important building of the Institute after him. ●

Prof. S. Narasimhan

Prof. S. Narasimhan belongs to the first batch of faculty members who joined IITB in 1958. He was a civil engineer with an excellent academic record which included a post graduate diploma from Imperial College. Later on he took leave from IITB in the sixties to go to USA and obtained his PhD in fluid mechanics from the University of Iowa. Prof Narasimhan was a fine teacher and researcher, and was known for his clarity in thinking, speaking and writing. He served the Institute with distinction and was the Head of the Civil Engineering Department and later the Dean of Planning. Prof Narasimhan retired in 1993 and lives with his wife Tara in Bengaluru.

Remembering Prof. Nag

Prof. S. P. Sukhatme

[Note: Biswajit Nag served as the Director of IIT Bombay for ten years from September 1, 1984. In this article, I describe his contributions to IIT Bombay and add some personal recollections.]

It is around 11 o'clock on a working day in September 1984. BN and SPS are in the Director's office in the Main Building.

BN: "By the way, do you like cricket?"

SPS: "Of course, I do. I played a little cricket in school and have always followed the game closely ever since I was nine or ten years old."

BN (with a chuckle and a twinkle): "Well, maybe I should test you with a quiz type question."

SPS: "Sure. I'll give it a try."

BN: "Who were the only three cricketers to represent both India and Pakistan in test cricket?"

SPS (after hesitation and some thought): "I am sure one of them was Abdul Hafeez Kardar."

He pauses and thinks. In the meanwhile, BN reaches out for the cigarette pack nearby and carefully lights a cigarette. By now SPS has the answer.

SPS: "Yes, yes, the three cricketers were Abdul Hafeez, Gul Mohammad and Amir Elahi."

I think one of the main contributions made by Prof. Nag was to induct a number of young, excellent faculty members in CSE.



BN (with more respect in his voice and genuine pleasure): "You are right. That's wonderful!"

Believe it or not, the above is a reconstruction of a conversation which took place in the Director's office between the Director and the Deputy Director sometime in September 1984. This was soon after Prof. Nag had joined as the Director. I was the Deputy Director then. No one else was present. To paraphrase Humphrey Bogart, "It was the beginning of a beautiful friendship." Before readers of *Fundamentals* get the wrong ideas, let me say that on that morning, Prof. Nag and I did discuss other matters of more concern to the Institute.

Before I write about Prof. Nag's work at IIT Bombay, it would be useful to recapitulate his career prior to joining the Institute. Biswajit Nag graduated with honours in Physics from Calcutta University in 1954 and obtained his M.Sc. (Tech) degree in radiophysics and electronics in 1956. He



joined the Department of Electronics and Telecommunication Engineering of Jadavpur University as a Lecturer in 1958. In 1962, he went to England to work in the Department of Computer Engineering at Manchester University. There he was associated with building of the Atlas computer. After his return to India, he obtained his Ph.D. degree in Computer Technology from Calcutta University in 1967 and was appointed as a Professor in 1968. He was a senior member of the team that built the ISIJU computer at Jadavpur University in 1966. This was one of the first Indian efforts to build a solid-state second generation computer.

Prof. Nag was instrumental in establishing the computer science and engineering program at Jadavpur and the Regional Computer Centre in Calcutta in 1976. He was also involved with the Indian electronics industry for many years. From 1976 to 1978, Prof. Nag served as the Managing Director of the West Bengal Electronics Industry Development Corporation. In 1978, he

Prof. Nag was an administrative path breaker. During his tenure office automation was gradually introduced...The Institute also embarked on an intensive faculty recruitment drive, both within India and overseas.



was appointed Secretary to the Department of Electronics, Government of India and Chairman of the Electronics Commission and served in this position with distinction for three years. He returned to the Jadavpur University in 1981 and continued on its faculty until he joined IIT Bombay in 1984.

During his tenure at IIT Bombay, Prof. Nag did a number of remarkable things. In 1984, the Computer Science and Engineering (CSE) department was a new department, formed as an off-shoot from the Electrical

Engineering department. There were only six or seven faculty members headed by Prof. Jimmy Isaac. More faculty members were clearly needed to bolster the newly started B. Tech. program in Computer Science and Engineering. I think one of the main contributions made by Prof. Nag was to induct a number of young, excellent faculty members in CSE. In addition, the computing facilities at the Institute were improved significantly. Right from the sixties, IIT Bombay had the poorest computing facilities amongst all the IITs. First we had the MINSK in 1966 and then the EC1030. Both the machines were outdated by the time they were installed in IIT Bombay. The Institute acquired its first good mainframe computer, the CDC 180/840, in Prof. Nag's time. It was a really useful addition. In the seventies and even the eighties, it was well known that the top-ranking students in JEE opted en-masse for IIT Kanpur's Computer Science program. Today that has changed. The top rankers now opt for IIT Bombay. It is important to remember that the seeds of the change were laid in Prof. Nag's time.

Prof. Nag was an administrative path breaker. Within a few months of joining IIT Bombay, he realised that many of the Institute's processes and procedures for performing administrative tasks had become rigid and obsolete. With the active support of Prof. Kudchadkar, who had taken over as the Deputy Director, he introduced a decentralised system. Paperwork was reduced by increasing the sanctioning powers of the Heads and Deans. In addition, he appointed committees to study the functioning of the support systems of the Institute and to recommend reforms. The support systems studied were the Estate Office, the Academic Office, the Administration Section and others. Based on the recommendations, office automation was gradually introduced



Courtesy :Prof Arun Inamdar, IIT Bombay
and foundations laid for online transactions, speedy access to information and vastly improved communication across the campus.

The Institute also embarked on an intensive faculty recruitment drive, both within India and overseas. Prof. Nag gave Prof. Kudchadkar the freedom needed to develop the faculty recruitment program. While traditional procedures like advertisements were still followed, the Institute actively looked for excellent faculty members through personal contacts. A good example of the recruitment done then (which has paid off handsomely) was the addition of a young man named Devang Khakhar in 1987!

Another important venture during Prof. Nag's time was the intensification of the drive to reach out to former students. A concerted multi-pronged approach was adopted. This included building up an alumni database, meeting with Mumbai-based alumni,

organising Alumni Day, having silver jubilee get-togethers and the beginning of efforts to establish contacts with US-based alumni. Prof. Kudchadkar spearheaded these efforts. They laid the foundations for the successes which we achieved in furthering relations during my tenure as Director from 1995 to 2000.

But for all these ventures to be more successful, money was needed. And money was

Another important venture during Prof. Nag's time was the intensification of the drive to reach out to former students.



in short supply. The Institute was starved of funds. This was a real issue. We were not getting enough money to start new programmes or to buy new equipment. We were not even getting enough money to maintain the Institute's infrastructure. Maintenance work had to be delayed and year by year, the Institute's buildings deteriorated. Visitors to the Institute and alumni used to be shocked to see concrete crumbling from beams and columns, and water leaking everywhere during the monsoon season. Yes, the period from 1984 to 1994 was a difficult one.

It would be fair to say that the ten-year period as Director took a lot out of Prof. Nag. Towards the end of his tenure, he was a little tired and his enthusiasm had waned. It would have happened to anybody. I recall him telling me then that it was a mistake for him to have accepted a second five year term as Director. "Remember this when you become the Director," he said prophetically. I never forgot his advice.

I began this article by mentioning Prof. Nag's love for cricket. Our cricketing discussions

continued right through his tenure. We would talk about past matches and discuss the nuances of an ongoing test match. We would discuss current controversies and accomplishments. During meetings in the Conference Room, his secretaries, Murthy and Naik, had instructions to keep him informed of the latest score if a match was on. This information was conveyed to him on chits of paper which he would pass on to me with a straight face. Prof. Nag often said that there was no better sight than to see a fast bowler running in with new ball from the Maidan End at the Eden Gardens on a cool winter morning in Kolkata. To him indeed, cricket was a way of life. "It's not cricket," he would say when he wanted to express his disapproval of somebody's actions.

Biswajit Nag was a warm-hearted and generous person. He was widely admired by his close colleagues because he valued their contributions and gave them responsibilities. IIT Bombay is in debt to him for steering it through difficult times and for setting it in new directions. ●



*Prof. S. P.
Sukhatme*



Prof. S P Sukhatme

The Renaissance man of IIT Bombay

Bumblebee

Few men had been more suited for the job than Prof. S. P. Sukhatme when he took over as Director in 1995. He had worked alongside 5 successive Directors, lived and breathed IIT Bombay and nurtured it down the decades for over 30 years. He had been the Deputy Director from 1983 to 1985, the head of the Department of Mechanical Engineering. However, more important than these administrative stints was his intimate understanding of the inner workings of the Institute by virtue of his presence and contribution on a variety of Institute Committees right from the time of Prof Kelkar. He had been the connecting bridge between the Hira Lal Committee that worked on the continuous assessment system and the Mallik Committee appointed to formulate the new curriculum. He went on to be a part of the Bedford Committee and other Senate committees concerned with pay scales, promotions etc.

The advantage of being an internal man when coupled with his close involvement with the inner working of the Institute meant that he was well aware that IIT Bombay was critically poised at the cusp of great things and it was his job to unlock that inner potential and prepare IITB for the new millennium.

It was a task easier said than done. Bear in mind that funding sources were nowhere

near what they are like today and inadequate funding was a constant source of worry. But Prof. Sukhatme was a man with a plan. When he took over he was clear that *“you need an action plan when you begin your term as the head of an institute. If you don't have one, you will just run the institute on a day-to-day basis and that is not good enough in the long run.”* It is a testament to his personality, be it the quintessential academic that he is or his love for precision planning, that his personal notes that he made to prepare an agenda for action, stayed with him on top of his desk as a quick reference point throughout his entire tenure. In his speech to the last Institute Faculty Meeting which entitled *“Looking Back, Looking Forward”* he went over what was accomplished and what lay ahead because *“an Institute doesn't ever stop. It is an entity which goes on living.”*

It was during his tenure that the UG curriculum was reviewed and the 5-year dual degree programme was introduced as was the new M.Sc programme in Applied Statistics and Informatics. Another major initiative was the establishment of the School of Management, an item which had been at the top of Prof. Sukhatme's agenda. Little wonder then that the Master of Management programme began as early as July 1995 with an emphasis on technology



management and production management and designed for engineers and scientists.

Another significant development was the increase in student enrolment primarily through the dual degree programme, other M. Tech programmes, and the Ph.D programme. As a result, the ratio of UG to PG students increased to 1:1.4. The fact is that the number of students at the Institute had stayed more or less constant for nearly fifteen or twenty years. It was about 2600 in Professor Kelkar's time and had increased a little, to about 3000, in Professor Nag's time. Prof. Sukhatme felt that we could not justify such a low student population given the size of the campus, the size of staff on the rolls. There was a conscious decision to increase student strength and by the time he left, students numbers were up to nearly 4,000, a portent of the changes to come in the succeeding years.

A not so popular initiative implemented by MHRD diktat across all IITs was the decision to implement a hike in tuition fees. The idea behind raising the tuition fees was not to make a profit, but to charge the student a

fraction (15 to 20 percent) of the cost of the education making them more aware on the costs incurred by the government and for them to value the education that they were receiving.

Being an internal man did not make Prof. Sukhatme inward looking. On the contrary, Alumni engagement was another area which was taken up seriously for the first time during his tenure. The results are evident for all to see with KRESIT and the Shailesh J Mehta School of Management (SJMSOM). This was possible because of the generous donations received from Kanwal Rekhi, Shailesh Mehta, Nandan Nilekani, and others. The funds received from alumni enabled IITB to construct new buildings, to establish Chair professorships, give a number of scholarships, set up labs and equip class rooms.

Prof. Sukhatme also felt that there are certain times of the year when the Institute needs to project itself to the outside world. He picked four days for this purpose. Foundation Day, Convocation Day, was in existence but Foundation day

now became a formal function on March 10th every year with an eminent person as the Chief Guest. The ceremony of giving Distinguished Alumnus Awards on that day was re-introduced and made an annual feature. The black gowns of old were a depressing colonial throwback which was also replaced with colourful formal Indian attire. Teachers' Day celebrations and Alumni Day when alumni from across the world congregated at the Institute on the

The single greatest contribution of Prof Sukhatme and his tenure was to bring research into the mainstream of the Institute agenda.



last Sunday of the year were two additional days of celebrations introduced.

The single greatest contribution of Prof Sukhatme and his tenure was to bring research into the mainstream of the Institute agenda. There was a clear boost to sponsored research activities and the Dean of Research and Development became more proactive in facilitating new and bigger projects with the result that income from sponsored research more than doubled by the end of Prof Sukhatme's tenure. There was a conscious decision to enable faculty to interact with outside agencies for larger projects with bigger resources for funding. For instance, through the Department of Atomic Energy, the Centre for Software Verification and Validation was set up; so was the Centre for Aerospace Systems Design and Engineering with support from the Aeronautical Development Authority. These were all well planned moves to establish centres within departments or attached to departments.



Courtesy :Prof Arun Inamdar, IIT Bombay

The message that emanated from the Director's office loud and clear was that research was an indivisible part of academic life and the point was driven home to the faculty because for the first time, research was directly linked to faculty promotions.

A leader at the helm has to lead by example and Prof. Sukhatme set a personal example by combining excellence in research with excellence in teaching seamlessly in his daily life. He continued to teach even as the Director though to a lesser extent than before. As a matter of fact, he was very clear about his commitment to his academic duties. It was illustrated beautifully at his address to the very first Institute faculty meeting after he took over. "You get to see me quite often at formal functions ... Therefore I shall be grateful if you don't ask me to inaugurate workshops, conferences and the like... On certain mornings of the week, I would not be in the Main Building and on others I would be in my Department looking after my academic duties".

A leader at the helm has to lead by example and Prof. Sukhatme set a personal example by combining excellence in research with excellence in teaching seamlessly in his daily life.



“If you read my letterhead carefully,” he said, “You will see that it says Director and Professor of Mechanical Engineering. This is being written for the first time to emphasize that I hold both positions. As a professor, I will be in my department and when I am there, I request you not to call me about issues which I have to deal with as a Director.”

A quintessential academic he is renowned for his contributions in the field of Heat Transfer and Energy Research. In his long career he supervised more than 19 Ph.D students, published close to 70 papers and wrote two seminal text books in his subjects. An academician to the core his spirit of intellectual inquiry extended to all aspects of the Institute. It stands to reason that the most authoritative research on the career choices of IITB students or the true magnitude of the brain drain of IIT Bombay students from India did not emerge from a

Humanities professor but from the pen of S. P. Sukhatme.

Meticulousness and exactitude are two attributes that come immediately to mind when you think of Prof S. P. Sukhatme. For his students and his colleagues he is an awe-inspiring but approachable figure. He leads an active retired life from his home in Powai still engaged and involved with the future well being of his beloved IIT Bombay.

Engineers and scientists have little truck with history. However, if Institutional histories could be embodied in the body of a person, then for IIT Bombay, the man would be none other than Prof. S P. Sukhatme. ●

IIT Bombay

An institution on the move

Prof. Ashok Misra

IIT Bombay is an institution that is very close to my heart and I greatly enjoyed being the Director for eight and a half years, from May 2000 to October 2008. I took over the position of Director, IIT Bombay on May 8, 2000 after spending 23 years at IIT Delhi. The warmth of the people that I met upon my arrival on campus was truly exceptional; I knew that I will have a good tenure and together we would achieve a great deal. As I see it, IIT Bombay grew in stature, both nationally and internationally, during my tenure. It emerged as the leading IIT that attracted the best talent at all academic levels – faculty and students. We took several bold initiatives with an aim to take IIT Bombay to greater heights. IIT Bombay family came together to bring about the change and enjoyed the new facilities that were added. New modern buildings came up and alongside the campus got a facelift. IIT Bombay had clearly transformed into a leading Research and Development institute, while at the same time maintaining its reputation as a leader in quality engineering education and the Institute achieved international acclaim. I was very fortunate to have been a part of this exciting and eventful journey.

Vision and Governance

Amongst the first few things that I did was to set up a Vision Committee to bring out a document for the Institute's growth and enhance its reputation in the world. The

vision team worked very hard keeping in view the aspirations of all stakeholders. The vision statement for IIT Bombay that emerged was: "To be the fountain head of new ideas and of innovation in technology & science". With this as a guiding light, the roadmap was defined for the next 5 to 10 years. A Strategy and Planning Committee was put in place to advise the functionaries of the Institute for taking action for the benefit of the Institute. We tried to cover most of what we set out to do with outstanding support of the Deputy Director, Deans, Heads of Departments and Centres, and in fact the entire faculty, staff and students.

Another major initiative that I took was to start the meetings of the IIT Bombay Advisory Council with stalwarts from academia and industry including distinguished alumni. This council primarily discussed various matters related to the growth of the Institute towards becoming a global one. The deliberations were most helpful in enhancing the vision and advising the Institute to take new initiatives.

The governance structure of the Institute was changed considerably. This included the establishment of two Deputy Directors and an increase in the number of Deans and Associate Deans. The whole governance structure was decentralised to a large extent by giving greater autonomy to the Deans and



the Heads of Departments and Centres.

Education, Research and Entrepreneurship

One of my major goals was to enhance the research focus of the Institute. IIT Bombay had done very well in its various teaching programmes before my tenure, but had a long way to go to be counted amongst the leading institutions in the world. This was primarily due to the lack of sufficient research achievements. The number of Ph.D. scholars in 2000 was less than 700; by 2008, the number had dynamically increased to about 1500, making the Institute known for its outstanding research culture. In 2008, the number of Ph.D. students graduating reached 200, and at that time this was highest amongst all the IITs.

The research facilities in all the academic entities were enhanced considerably to enable

faculty and students to carry out high quality research. The number of papers in refereed journals, patents, and faculty participation in international conferences increased several fold. Further, we set in place a mechanism to enable students to attend international conferences, primarily for doctoral students but not limited to this group. The quantum of sponsored research funding increased substantially and there was a marked increase of projects sponsored by the industry. A major initiative was taken to establish the Centre for Nanotechnology, and today IIT Bombay is a leader in this area. In the area of nano-electronics, a Rs. 99.8 crore project was sanctioned as a collaborative project between IIT Bombay and IISc Bangalore, two leading institutions in the country – with 50% for each. This was the largest collaborative programme funded in India and has been a

great success. As part of this project, Applied Materials, USA put in about USD 10 million by donating state-of-the-art equipment for research, the first such initiative by them in India. Many faculty members became Fellows of Indian National Engineering Academy and the Science Academies in India. All important research indicators improved substantially and clearly IIT Bombay was becoming a hub for quality research, a must for becoming a global institution.

On the academic front, a totally new B. Tech. curriculum was introduced, which was flexible and innovative to suit the needs of current times. The concept of undergraduate research opportunities (UROP) was introduced, which was very successful. Several new postgraduate programmes, including the masters and doctoral dual degree programmes, were started. The Department of Energy Science and Engineering, the first one of its kind in the country, was formed to meet the energy needs of India. A dual degree programme in Energy Science and Engineering was started. A few M. Tech. programmes were started in partnership and with support from the industry. Lastly, the Centre for Distance Engineering Education programme was formed with excellent facilities for video recording of courses as well as webcasting them for selected colleges.

On the faculty front, a large number of bright, young faculty members were recruited in all departments and centres. The concept of a sizeable start-up research grant was introduced so that new faculty could get started early in their career. Later on, through Alumni funding, a special joining bonus, (Young Faculty Awards), paid over the first 3 years was introduced. A number of facilities were provided for faculty to make their IIT Bombay experience a very pleasant and enjoyable one. The concept of adjunct and distinguished guest faculty was introduced



Courtesy : Prof Arun Inamdar, IIT Bombay

and this attracted several stalwarts in their fields from industry and academia. All the measures in place facilitated several departments earning the reputation of being the very best in the entire IIT system.

Among other pioneering efforts, IIT Bombay led the development of entrepreneurship activities in the nation, including the formation of the Society for Innovation and Entrepreneurship (SINE), which is a technology business incubator. The model of SINE was highly appreciated and replicated at several institutions. By 2008, 28 companies were incubated under SINE by the faculty, students and alumni, and of these 9 had graduated or were acquired, 11 got funding and 19 of them launched products.

International Initiatives

During my tenure at IIT Bombay, interactions with international universities took a big leap. Prior to 2000, the Institute had very few institutional level interactions with foreign universities. However by 2008, it had established relationships and outstanding partnerships with a large number of lead-

ing universities from all over the world. A number of collaborative research projects, faculty and student exchange programmes were established leading global universities which included Cambridge University, Harvard University, Washington University in St. Louis, Rice University, National University of Singapore, Kyushu University, Tsinghua University and Monash University. A major initiative was the establishment of the IIT Bombay Monash University Research

The vision statement for IIT Bombay that emerged was: “To be the fountain head of new ideas and of innovation in technology & science”



Academy on our campus. This was a very unique initiative to provide joint doctoral degree, perhaps the first of its kind in the world, and Monash University contributed AUD 10 million for the Academy. Further, a joint Ph.D. programme with the National University of Singapore was established. IIT Bombay became a major partner in the McDonnell International Academy, an initiative of Washington University. Cambridge University signed its first major collaboration in India with IIT Bombay and put in GBP 800,000 for this initiative. In 2008, as part of the Golden Jubilee celebrations at IIT Bombay, we held a Vice-Chancellors’ conclave as part of the Golden Jubilee activities. It was heartening to see 23 Presidents, Chancellors and Vice-Chancellors taking active part in the deliberations over three days on campus. IIT Bombay became a global player as a leading technical university in the world.

Alumni Relations

One of the things that I enjoyed greatly was

the interactions with our outstanding and enthusiastic alumni community all over the world. They became partners in the development of the vision document and its implementation. We held a large number of meetings over the years, both on campus and across the world, and they enthusiastically supported as well as contributed generously to make a difference for their alma mater. The Annual Alumni Meetings (ADAM) became a regular feature, and they really helped in focusing on issues and challenges faced by the Institute. The alumni were very generous in funding a number of infrastructure projects as well as academic programmes. A unique initiative was the establishment of the Faculty Alumni Network (FAN) in which alumni in academic positions interacted with the IIT Bombay faculty. This helped us share best practices in leading universities and adopting them in the Institute. The start-up research grant was one such suggestion that we implemented right away. FAN helped us identify potential faculty candidates. FAN also helped in sharing the developments in current research areas and setting up collaborations.

Infrastructure and Campus Life

There was a major increase in the infrastructure development on campus during 2000-08. The first major project was the construction of hostels 12 & 13, which were significantly better designed and planned than the older hostels. These became a new benchmark for all the new hostels that followed. New faculty housing apartments were made with modern designs competing with the latest commercial ones and again this became the norm for future faculty housing on campus. indoor sports stadium and an Olympic-size swimming pool have come up very well for the benefit of the campus community. sports facilities were constructed or upgraded for the benefit of the students.

Most of the campus roads were widened. Boundary walls and fences were constructed to secure the campus from further encroachments and entry of wild animals from the nearby Sanjay Gandhi National Park. Beautiful parks and many facilities were created to enhance life on campus. In brief, the quality of living for faculty, staff and students were improved.

In the academic area, a modern convention centre was designed and its construction had started before I left. This has come along very well and provides the much-needed facilities for conferences and meetings on campus. The Gulmohar building, with a cafeteria and a banquet hall, serve the Institute very well. The new guest house, Van Vihar, was inaugurated to provide the shortfall of guest accommodation. A large lecture hall complex, the Computer Science & Engineering building, and the Bio-school building were designed and ready to start construction. Some of these are ready now while others are nearing completion. Several new buildings had significant contribution from the alumni and the Institute is very thankful to them.

Another major exercise that I undertook was to visit every department and centre. I guess this had not been done by some of the previous Directors and it gave a chance for the faculty and staff to share their achievements and aspirations. We found that most of the departments and centres were in fairly bad shape in terms of infrastructure and quite dilapidated in some cases. One by one, all the departments and centres were renovated and the labs were equipped with modern research and teaching facilities. I also visited all the administrative sections, again a new initiative, to see how our support systems worked. Here again the offices were and badly in need of renovation. We took steps to renovate each section with modern fittings, keeping in view the needs of our support staff. By

the time I left, almost all the administrative offices were renovated and began to have a corporate look. This significantly improved the work culture.

My wife, Rashmi, was a great support to me and took active interest in enhancing the social, cultural and educational needs of the campus community – an important part of living on campus. Along with the faculty wives, she set up Sishu Vihara day care for

One of the things that I enjoyed greatly was the interactions with our outstanding and enthusiastic alumni community all over the world.



preschoolers, Sanskriti the cultural centre, and worked on a citizen's initiative to save the Powai Lake. She set up opportunities to educate and empower all the community on campus through an NGO, Vidya Integrated Development for Youth Adults (VIDYA). Several employees who did not have a 10 or 12 class certificate obtained this through the open school, organised by VIDYA, which in turn benefitted their careers.

Golden Jubilee

I was fortunate to be the Director during the Golden Jubilee (GJ) of IIT Bombay, a landmark in its history. GJ activities started on September 5, 2007, which is nationally celebrated as Teachers' Day. There were a number of initiatives taken during the GJ year in all spheres of IIT Bombay. These included the starting of many new academic programmes and several significant international conferences. The Institute was visited by a number of Nobel laureates who delivered inspirational lectures during GJ year bringing about the enthusiasm of science. The International Vice

Chancellors Conclave was held, as mentioned earlier. A unique competition to invite “Ten great ideas that can change the world in the next 50 years” was launched as a GJ activity. We had several cultural and classical music programmes with the best artists. A special feature was the gift from the Institute of a gold coin to its employees.

Suggestions for the future

Clearly IIT Bombay is an institution on the move. It has acquired leadership in several areas in the country and should aspire to become a leading global institute with a focus on further enhancing its education and research programmes. IIT Bombay should aim to be counted amongst the best in the world and be in the top 10 technical universities in the world. With the great strides of progress over the past decade or so, this is a very reasonable target to be achieved by the Platinum Jubilee year or even perhaps earlier. We need to work hard and take some concrete measures that would propel IIT Bombay towards this goal, some of which are listed below:

1. Continue to enhance the focus on research programmes and provide the necessary input of quality manpower and facilities.
2. Continue to work on the forefront in each major area and acquire global leadership in a number of areas.
3. All departments and centres have to aspire to be among the best in the world and not settle for less.
4. Develop thematic research programmes that are cross disciplinary.
5. Continue to improve the education programmes at all levels and revise curricula as per the needs of the industry and the country.

6. Continue to attract and retain outstanding faculty in the Institute.
7. Enhance interactions with the industry by adding fresh dimensions to the synergy between IIT Bombay and the industry.
8. Evolve greater number of teaching programmes in partnership with the industry.
9. Raise substantial funds. The aim should be to have a large corpus which would provide a continuous flow for running expenses.
10. Evolve a governance system to meet the needs from time to time.
11. Enhance the partnerships with the alumni who are very important stakeholders in the future of the Institute.
12. Aspire to work with greater autonomy.

Closing remarks

It was indeed a privilege to have Prof. M.G.K. Menon, Mr. Rahul Bajaj and Dr. Anil Kakodkar as the Chairman, Board of Governors (BOG) during my tenure. All three of them provided excellent guidance and support directly, through the BOG and the Advisory Council. Further, I had an outstanding team with me at all times which was fully aware of the vision and worked hard and with great enthusiasm to make the difference and bring about the needed change. I must put on record the fantastic support that I received from Prof. Subhash C. Lakkad, Prof. Dipan Ghosh and Prof. Juzer Vasi in their capacity as Deputy Directors during my tenure, and later from Prof. Raghu Shevgaonkar who took the position as the second Deputy Director. I was indeed very fortunate that all the Deans with whom I worked took charge of their respective areas extremely well. I have always maintained

that the Deputy Directors, the Deans and the Heads made things happen at the Institute. It is they who are real champions for the successful growth and the enhancement of the reputation of the Institute. It is not a coincidence that five of the current Directors in the IIT system are from IIT Bombay. It is the overall experience at IIT Bombay that made them stand out amongst the others.

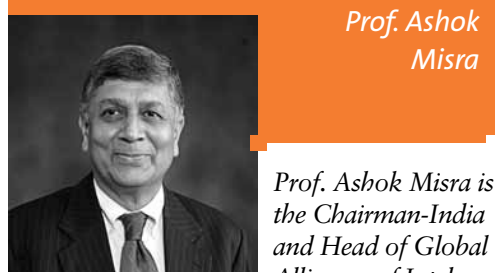
I have no doubt in my mind that the IIT

Clearly IIT Bombay is an institution on the move. It has acquired leadership in several areas in the country and should aspire to become a leading global institute



Bombay family can work together, raise the levels in all spheres and attain its full potential. The vibrant faculty, outstanding students and dedicated staff should live the vision and grow from strength to strength. They should think big, think out of the box and dare to dream. Success and growth of an institution depends on creative teamwork and the joy of giving and achieving together. The IIT Bombay family is special and they can easily attain the goals that they set for the Institute.

I wish IIT Bombay all the best as it continues towards its goal to be ranked amongst the best technological universities in the world. ●



Prof. Ashok Misra

Prof. Ashok Misra is the Chairman-India and Head of Global Alliances of Intellectual Ventures, India. He was Director, of IIT Bombay from 2000-08; at IIT Delhi from 1977-2000; and at Monsanto Chemical Co. from 1974-77. He obtained his B.Tech. at IIT Kanpur, M.S. at Tufts University and Ph.D. at the University of Massachusetts. He is a Fellow of National Academy of Sciences India and was its President from 2006-08 and a Fellow of the Indian National Academy of Engineering. He is the founder President of the Polymer Processing Academy and the former President of the Society of Polymer Science, India.

Waiting for Diro

Ali Baba

For the Foundation Day issue of Fundamatics, it was decided that we should interview IITB Directors, past and present, living and otherwise. Going to Director's Office is not a prospect that any IITian looks forward to hence it was only natural that the person who did not attend the editorial pow-wow was unanimously volunteered. So this is how it came about that I was assigned this impossible task. It required trudging back to the beginning of time, taking some liberty with facts, and adding a dash of hyperbole. So this is how it went.

I stepped gingerly into Director's Office and politely asked the PA if I could meet the Director. 'He is inspecting the troops,' the PA said without looking up from the newspaper he was engrossed in. I turned around to leave, secretly relieved that the encounter had been postponed. But as I was about to take the stairs, I heard a command to stop, 'Why are you loitering around, why are you not in your class?' It was the Brigadier, inspecting the troops. 'But... but... Sir, I am not a student.' I blurted out though I was shaking like one. 'Why are you not dressed properly? Where is your tie? I can understand that wearing a suit in Bombay weather may not be comfortable but there can be no excuse for not wearing a tie' he thundered. 'In any case, why are you not in your department?' 'I was just on my way Sir,' I mumbled and escaped down the stairs, taking two steps at a time. I

decided to postpone interviewing Brigadier Bose for *Fundamatics* to another day.

As I was cycling to the department I noticed Prof. Kelkar on the footpath on the other side, ambling towards his office from Director's Bungalow. The government had called for austerity in wake of the Bangladesh war and Prof. Kelkar had decided to do his bit by not using the official car. I leaned my cycle against a tree and crossed the road to request him for an interview for *Fundamatics*. But before I could reach him, Prof. Iyer had accosted him and was complaining how the increasing number of cultural activities was undermining academics, 'and now they have started this Mood Indigo, sir, I am unable to cover the syllabus!' Prof. Kelkar gave him a beatific smile, patted his shoulder, and said, 'Let us try to uncover the syllabus, Dr Iyer.' Taking advantage of Prof. Iyer's confusion, I stepped up and made my request for a message for *Fundamatics*. 'Certainly', he smiled, 'as Krishna said to Arjuna on the battlefield...'. He took my arm and steered me towards the MB. It was fascinating, what Krishna said to Arjuna, and very profound. But it escapes me now.

Getting an appointment to see Director De was not difficult. He had just taken over from

Prof. Kelkar and the institute had yet to come to terms with the change of guard. He was wary when I said I had come to interview him for the alumni magazine. ‘Contractor, let me tell you, I think students should spend more time on their studies. Girls will not be allowed in boys hostels beyond the Warden’s office and surveillance squads will patrol the campus and pay surprise visits to the boys hostels to see that there is no ragging.’ ‘But, Sir, there is no harm if we study together, I

Prof. Iyer accosted him complaining how the increasing number of cultural activities was undermining academics- ‘now they have started this Mood Indigo, sir, I am unable to cover the syllabus!’ Prof. Kelkar gave him a beatific smile, patted his shoulder, and said, ‘Let us try to uncover the syllabus, Dr Iyer.’



tried to protest half-heartedly.’ ‘Then I will close the institute and send all of you home.’ That was not a prospect we looked forward to, even if the food at home was infinitely better.

I called Murthy to ask if I could meet Prof. Nag. ‘Kya kaam hai?...He is in Delhi,’ was the prompt reply. ‘When is he expected back?’ I queried, ‘Tonight,’ came the pat answer. So I went to Director’s Office the next day to see if I could meet him. ‘Kya kaam hai?... He is in Delhi,’ was the auto-response. ‘But you told me he was going to be back last night,’ I persisted. ‘Yes, he returned last night, but had to leave again by

the early morning flight to attend a meeting in the ministry.’ Seeing the disappointment on my face, Murthy was moved to offer help, ‘Why don’t you drop into the office on Saturday morning, he will be there.’ I returned on Saturday and was ushered in to find Prof. Nag at his desk with several piles of papers around him. ‘Good morning, Dr. Contractor, I was told you wanted to talk to me..., by the way, are you related to the great Nari Contractor?’ he greeted me cheerily. If he was disappointed to hear that I was not related to the former India captain, he did not show it, and promptly asked me what I wished to talk to him about. ‘*Fundamentals*... hmm, good choice,’ he seemed pleased, ‘you know what is the problem with Indian cricket? Neglecting the fundamentals... they should go back to the basics...’

‘There is a slot available at 2:15 in the afternoon, would you like to see him then?’ asked his PA. ‘Yes,’ I said ‘I think I can make it. I reached Director’s Office in the afternoon and announced to his PA that I had an appointment to see Prof. Sukhatme. He looked up from his post-lunch stupor to inform me that the meeting had already started, ‘you may go in.’ I knocked tentatively and entered to find Prof. Sukhatme at his desk which was clean but for one neat pile of papers in the OUT tray. ‘Come in, I hope you will not mind my starting the meeting without you. We have a tryst with excellence, you see, and one must be ready. At 2:30, I work on the next chapter of my book. How many words do you want me to write for *Fundamentals*?’ Hell, it had not even occurred to me.

I had finished reading the Economic Times and the Financial Express and was starting

The Mint when Mr. Pillai suggested, ‘why don’t you go back to your office, I will call you when he is free.’ We had fixed for me to meet Prof. Misra at 4 p.m. but the previous visitor was still with him though it was nearing 5 p.m. Just then the door to his office opened and the visitor stepped out accompanied by Prof. Misra escorting him out. He returned after an extended farewell to the visitor, shook my hand and profusely apologized for keeping me waiting. This was a new

Prof Khakhar said –‘I agree completely’, ‘So you will accept their demands?’ ... ‘we will have to look into it, I will request DD to form a small committee and bring the report to the Deans’ committee, after which we will take it to the BoG.’



experience, the IIT Director welcoming me with a hand-shake! ‘Fundamatics’, he said, ‘is an excellent idea. As I was telling Muke-shbhai the other day, it has to be a win-win proposition...’ I left fifteen minutes later, with no doubt in my mind that I would get the 1500 words, the only question was, would it come before or after the due date.

‘You guys are doing a great job, I tell you,’ Prof. Khakhar was all praise for the IITB alumni. Just as he was telling me how many of the top 100 JEE rankers had chosen IITB, I mentioned the severe shortage of students’ accommodation. I said the girls were so agitated that they had threatened a dharna. ‘I agree completely’, he said. ‘So you will accept their demands?’ I was heartened with his response. ‘We will have to look into it, I will

request DD to form a small committee and bring the report to the Deans’ committee, after which we will take it to the BoG.’ But he did agree that he would write a message for *Fundamatics*, and it would not be necessary to go through the Deans’ committee or BoG!

Actually, that was not how it went. But then nostalgia is not about how it went, rather, how we would like to believe it went. Isn’t that what makes alumni meetings such fun? ●



Prof. Aliasgar
Qutub
Contractor

Prof. Aliasgar
Qutub Contractor,
former HoD
of Chemistry

Department, and former Dean Alumni and Corporate Relations, is an alumnus from C’73. Endowed with a rare gift of narrating “serious” and “heavy” matters with a tongue held firmly in cheek, his incisive and informed views on IIT Bombay and alumni relations are in evidence in his column *Sim Sim khul ja*. He is currently 40 thieves short of his target.

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chetan vinchhi, iit-b '91 <chetan@Ltresearch.com>

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A Small Cup of Large Quiet

This time we conducted a survey on a topic that recently took not only the country but also the world by a rude storm. The brutal gang rape and murder of a 23-year-old female student in Delhi shook innards, agitated minds and galvanised public opinions like never before. TV channels, public debates, protests, candlelight marches, activists, NGOs, women's' organisations, politicians and social workers debated and continue to debate this rape in particular, while asking for a focus on the larger issue of rapes in general.

Eve Ensler, the author of 'The Vagina Monologues' and founder of the One Billion Rising and V-Day movements, says that the act of breaking silences and asserting the unexpressed is the beginning of change. Going by the plethora of media reports, this global tsunami put India at the main fulcrum for campaign against sexual crimes. Everything was being questioned and everyday the world was being shaken up and woken out of its comfort zone.

Importance of values, cultural baggage, role of education, sex education, gender equality, patriarchy, politicians in denial with their knee-jerk reactions, police and policing and judicial policies were all brought under ruthless public scrutiny. It was and still is looked at as a possible opportunity to convert outrage into concrete action.

From our side, to ensure that this noise does

not fade away, Poll Khul Gayi Edition 3 (PKG-3) elicited your opinions on some such questions. As students, alumni and faculty members of the IITB fraternity, we perceived a role for ourselves as conscientious citizens who need to voice our opinion and act with resolute determination. While we were gearing ourselves in the backend for the survey web page to crash with the unmanageable number of responses, the survey webpage, at the same time, kept waiting for those clicks to happen and feeling a bit cold. We were in for a surprise and may we say not a pleasant one.

One of the consistent themes underlying all PKGs so far has been the voter apathy. The first poll on the 'future of IIT Bombay' saw a voter turnout of 1824 and the next one on 'JEE reforms' received votes from 2000 participants. Though both the surveys had a much better and healthier participation as compared to other IITs, they still accounted for a mere 4.3 and 4.7 per cent respectively of the total eligible voting population of 42500 (alumni – 37000, students – 5000, faculty – 500). This time the number of votes went spiraling down to 215 or 0.5 per cent of the total!

To experience such indifference for an issue that made the ground, across geographies, shift beneath the feet of millions and billions was something that we were not ready for.

This level of apathy needed a new word that we didn't know and we hope to never learn it in the future too.

Why did this happen? Why did an audience that has never shied and often been loud and unrestrained in voicing their opinions go mostly quiet and adopt the decibel levels of a famous, bearded, blue-turbaned, geriatric, top job position holder of the country? In all fairness, the 215 that came out did give some involved responses and helped in formulating a few trends that you will see in the forthcoming pages. But then again, it was just 215! Why did you not come out in large number to show your anger, frustrations and offer possible solutions that you are so good at? Why?

We design the survey form in such a way that you can complete filling it in not more than 10 minutes, so not having time cannot be the reason for non-participation.

Looking at the past polls and after much deliberation, the only reason, though it did not make much sense to us but did somehow fit, was that whenever it has had anything to do with anything IIT, you have treated it as your personal affair. So be it a discussion on 'future of IITs' or the 'JEE reforms', as long as it was IIT-centric, it had your attention. The minute we took the conversation beyond the walls of IITs, we lost the autistic attention. What's surprising is that this particular

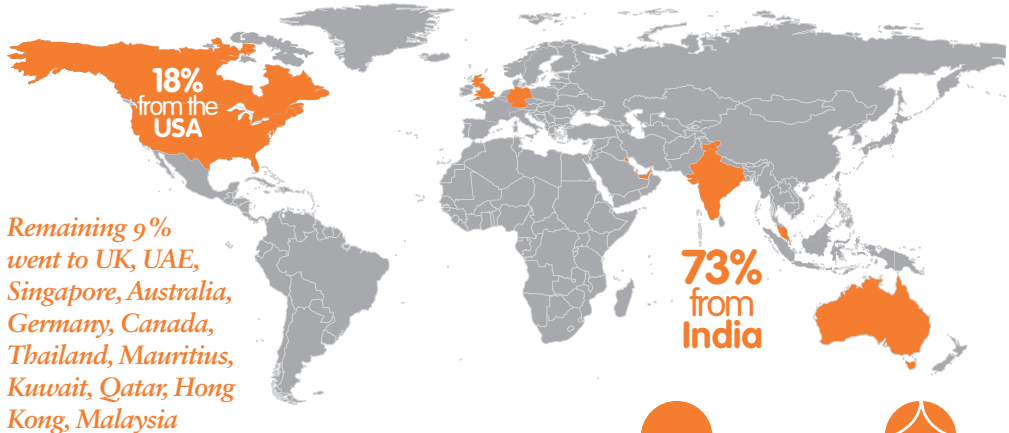
issue was an omnipresent one, very much present within the walls of IITs as well and as far as we were concerned affected all. It just did not have IIT in the subject line.

Is this it? Is this really the reason? If yes, we're clearly disappointed and not just a tad bit. But if it is something else, you will tell us. Won't you? If there's anything that could be done differently or better, you will share with us, right? But if all you want to do is hold your head down and say sorry, you can do that too. It's okay.

Queenbee



Poll Vault



215

All time low. PKG -1 had 1824 & PKG -2 had 2000

people participated in the survey

158

Alumni

15

Faculty

36

Students

6

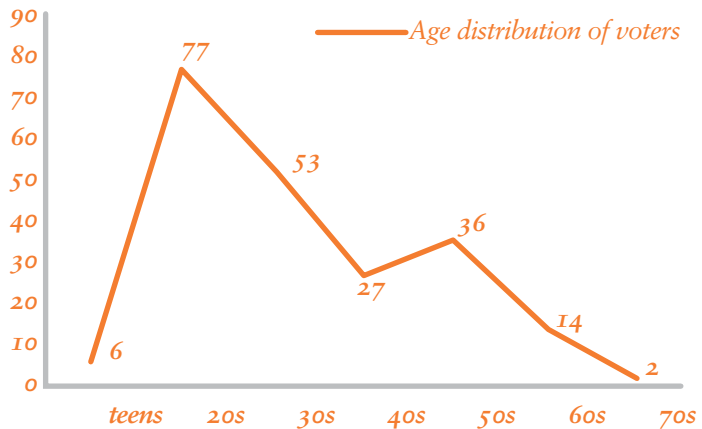
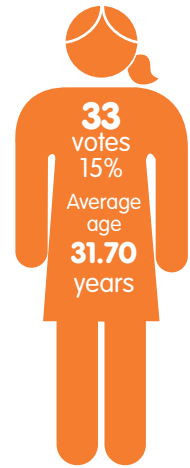
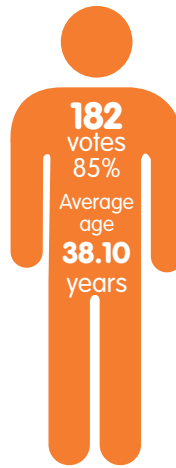
others

378

comments covering

8,798

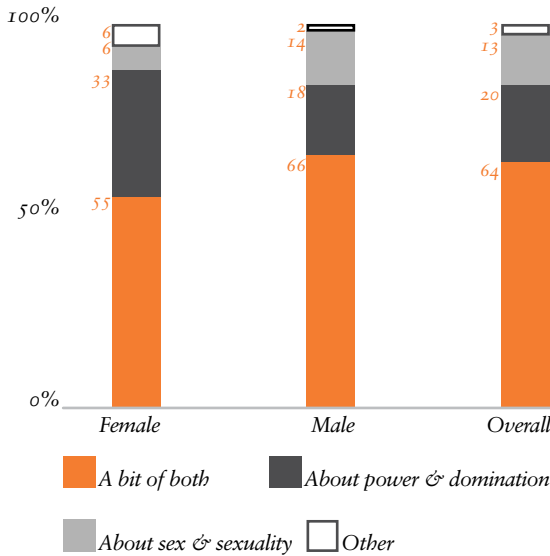
words



Graph-I-ti

1. Is Rape or violence against women about sex and sexuality or is it about power and domination?

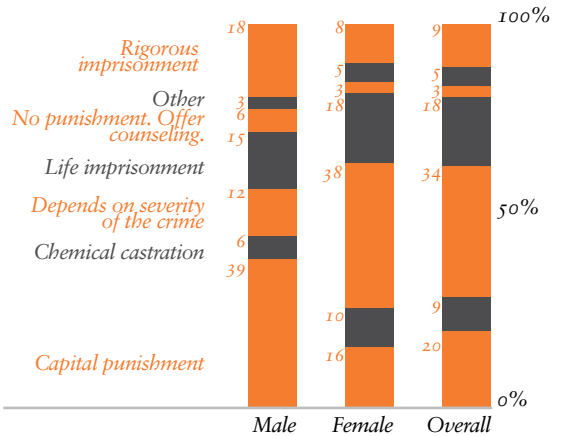
2. What kind of a punishment would you like to prescribe for rapists?



Loud and clear: Though power and domination is the dominant reason, repressed sexuality also contributes significantly towards violence against women.

Also heard: If a woman gets too close to a man, gets too friendly and indulges in mild flirting, it sends a wrong message and may result in forced sex.

Also heard: Rape is not just about proving power. In minor cases it is about utilising the chance to relieve sexual tensions.

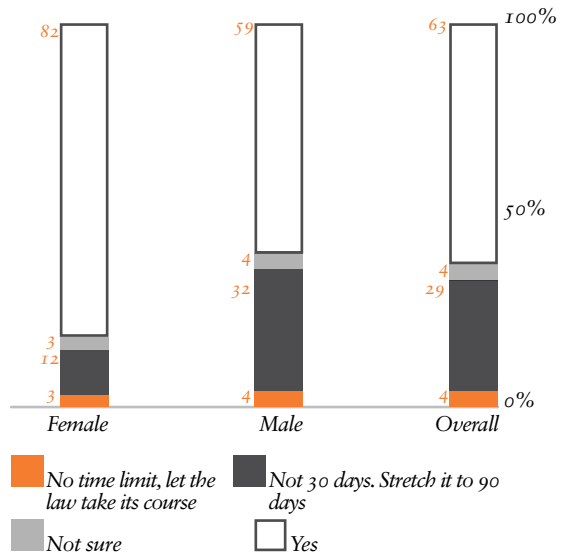
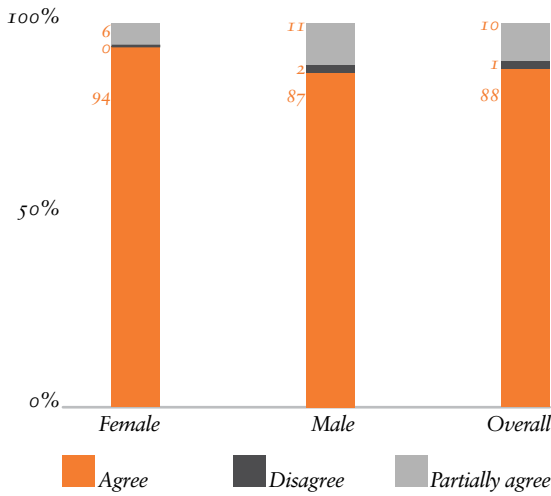


Loud and clear: ‘Capital punishment’, ‘Surgical castration’, ‘Cut their reproductive parts, put them in jail for 5 years and then capital punishment’.

Also heard: Rape is a social reality and we all have a role in this. That seriously needs to be identified.

3. Do you agree that a first step to challenging rape is to stop victim blaming and focus on perpetrators and the cultures that produces them?

4. Do you think there should be special fast-track courts with a mandate to deliver a judgment in such cases within 30 days?



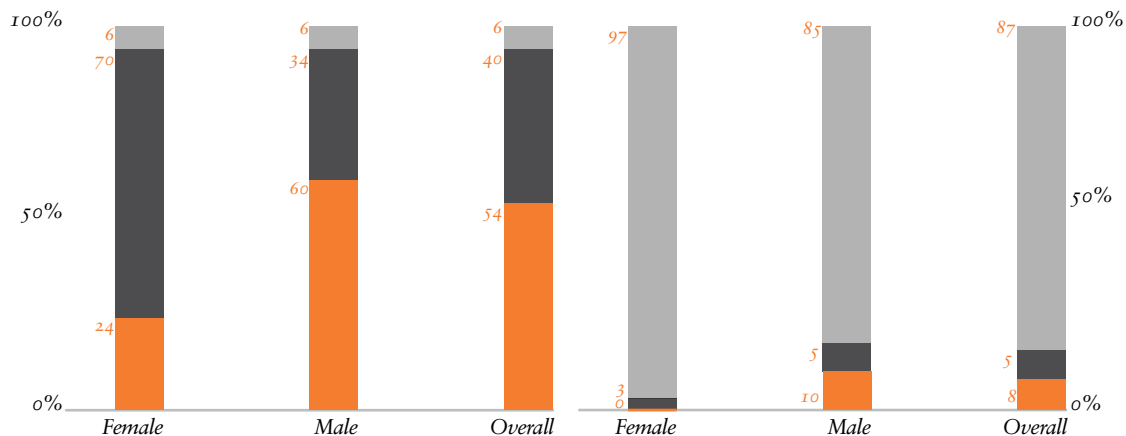
Loud and clear: All forms of victim blaming should be swiftly and categorically condemned.

Loud and clear: It should not take more than a week.

Also heard: I don't like the idea of number of days. Definitely don't want cases to be decided on false evidence.

5. Do you think there should be a distinction between different kinds of rapes such as rape, rape with murder, gangrape, statutory rape, rape of a minor, homosexual rape?

6. Do you think it is also time to address similar issues such as eve-teasing, molestation, sexual harrasment, incest rape and other forms of sexual violence, etc. so that there is a case for comprehensive restructuring of sexual assault law in India?



Create different punishment levels for different types.

No difference. Punish all equally Not sure

Loud and clear: I do feel that some kind of rapes are worse than others like incidences when severe brutality is used such as minor rapes or gang rapes. But by having different punishments, I don't want to send the message that some types of rapes are 'not that bad'. The severest punishment should be given to act as a strong deterrent.

Also heard: Biased question. Murder is another kind of offense.

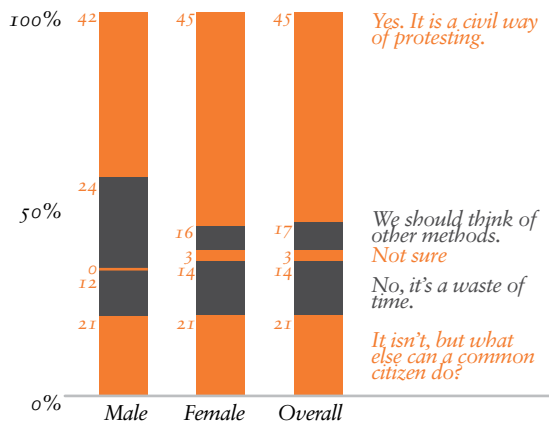
No, let us not dilute the focus from rape which is a more heinous crime

Not sure Yes, they are related issues.

Loud and clear: Fundamentally we need to address the notion that it is acceptable for a man to derive pleasure and sense of power from a woman's discomfort.

Also heard: Harmless eve-teasing a la Shammi Kapoor style should not be confused with rape.

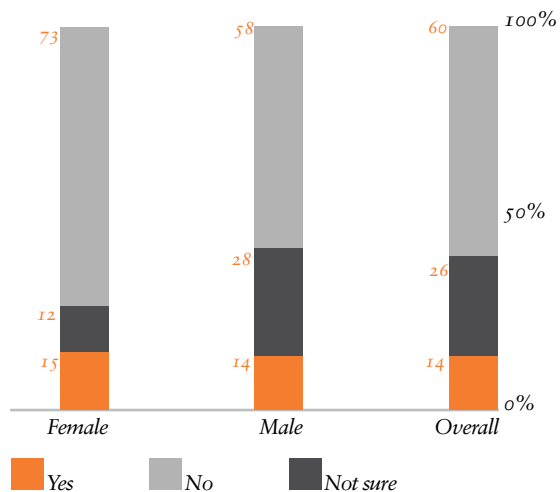
7. Do you think the present trend of people participating in candle-light marches is effective?



Loud and clear: This trend is better than sitting at home and doing nothing. At least the presence is being felt along with other forms of protest.

Also heard: 'It's activism in cafes. Fizzes out like the steam from a coffee cup', 'Open sex education centre', 'What will candlelight marches do? Kill hunger for food and sex?'

8. Do you think the media is biased in terms of reporting urban crimes and does not care much about rapes in rural areas?

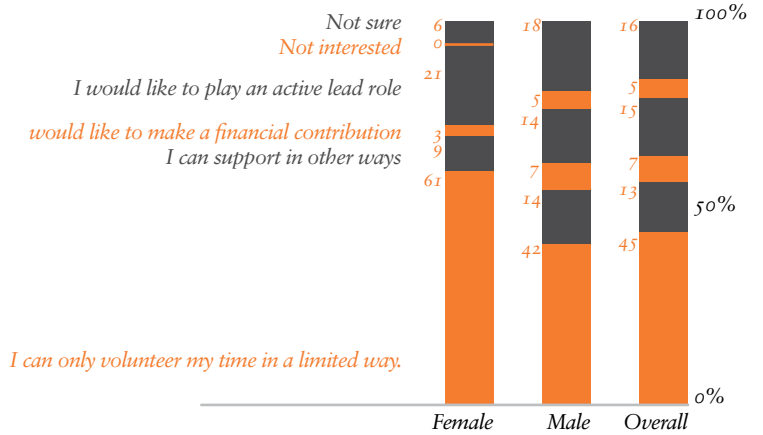


Loud and clear: Media is governed by juicy stories that provide better airtime. If they show rural issues, the urban audience might dismiss it as it doesn't happen to them. I think media should report for the sake of reporting. I don't think media is doing a good job right now.



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9 If the IIT Bombay fraternity were to set up a forum that works with police, lawyers, counselors, local administration, rape victims and law makers, to what extent would you involve yourself?



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Loud and clear: I would like to help in 'microplanning', 'awareness generation', 'whatever way I can'.

Also heard: Not sure

Poll Star

You've read the rant, marveled (or shook your head disapprovingly or shrugged your shoulders) at the numbers and seen what the graphs had to show. It's now time to see what the graphs did not obviously bounce at you, which is what this section is all about.

We've established it well that this survey is different. No, not just because it isn't IIT-centric, but also because the response comparisons are not drawn between our usual categories of alumni, faculty and students as has been in all our earlier surveys. You may have already noticed in the graphs that the response comparisons for this survey are gender specific. This was a deliberate decision as the issue (though not restricted to a particular gender) in this survey was largely about sexual crimes against women, hence more gender centric.

Though in this survey we have had a higher number of women participation (15%), it has mostly been from the alumni category. The number is much higher than the women in students and faculty categories. If we had not kept a gender distinction, these divergent voices would have gone hidden and unnoticed. For example, on the questions of what kind of punishments and how much time should it take, most female respondents have said harshest punishments and quickest judgments whereas most male respondents have been more detached and tried to look at the

problem objectively by saying that the degree of the punishment should be a function of severity of the crime and judgments should not be taken in a haste and only after proper investigations. We stay away from making generalised sexist comments, but this was clearly a case of men are from wherever and women are from here. Is it fair to say then that this level of objectivity among males can easily be demonstrated because of two reasons – a belief, despite all good intentions, that this will always be the other gender's plight and confidence that it will never have to be them?

The next two findings are related to geography. The first one reinforces the fact that sexual crimes affect all in the most unifying manner and its pain knows no boundaries. So for a case that happened in India did not remain confined to our country alone. We've seen, heard and read countless reports from all over the world about this. Our respondents did quite the same and 26 per cent of those were from the US and rest of the world.

Another geography-related statistic was a bit perplexing. Question number 9 was about finding out the extent of help and support that the respondents would be willing to come forward with. As expected, the maximum number of respondents either came out in favour of helping in whichever way they could or some very thoughtfully suggested only the limited amount of time they would be able to devote and commit. However, there were 21 per cent of respondents who chose to tick on the 'not sure' and 'not interested to help' choices. But the bigger revelation from this is that most of these 21 per cent are not from overseas but from India! Most of the overseas respondents have shown wholeheartedness and willingness to help, even with their limitation of distance. Though the numbers of naysayers are very



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small and one can always hope that maybe with a larger number of respondents, the graphs would have been different. But it is also a possibility that they would have been the same and this level of indifference is simply crushing! There is no point analysing it any further.

Another thing that you may not have noticed in the graphs is a bit of creative adjustment that we had to make in order to tally percentages, while not altering the opinion break-up. In earlier versions of PKG, our questions requested for answers which were yes/no/don't know. Hence, the sum total of all responses added up to 100%. However, the multiple choices offered in this edition of PKG pointed us to a design defect. A few of you chose capital punishment AND life

imprisonment AND something else to be meted out to the rapists. Results totalled to more than 100%, much like a few polling booths in Bihar. We had to step in and make "corrections" by inference. For example, we used the multiple choice of punishments to imply that punishment meted out should depend on the severity of the crime. We need to add that such deviations are just a handful and would not impact the final results significantly. Nonetheless, IIT has taught us to be precise. Remember how getting a problem almost right did not get us almost full marks. In other words, the slightest blooper in our tests led us to say that we got "raped" in the test. We hope this disclaimer about our poll design will save us from "rape". ●

The Sexist Pronoun

Problem And Possible Solution

Beheruz N. Sethna

Once upon a time, there was a job description written for a managerial position in a company. This is the way one of the paragraphs read:

The manager will be responsible for the smooth functioning of his department, will assist in the development of his direct reports, will directly supervise his second-in-command and delegate such duties to him as he deems appropriate, always maintaining oversight of his budgets and his major projects. He will provide departmental reports to his supervisor according to the published schedule, or as required by him.

Ms. Goldie Locks, a new Personnel Manager, saw the job description and said, “That’s sexist. It’s too “male”; it always uses male pronouns. It needs rewriting.” So, she gave it to her assistant to rewrite. And, this is the way it now read:

The manager will be responsible for the smooth functioning of her department, will assist in the development of her direct reports, will directly supervise her second-in-command and delegate such duties to her as she deems appropriate, always maintaining oversight of her budgets and her major projects. She will provide departmental reports to her supervisor according to the published schedule, or as required by her.

Ms. Goldie Locks, the Personnel Manager,

saw the revised job description and said, “That’s still sexist. It’s too “female”; it always uses female pronouns. It needs rewriting.” So, she gave it to her assistant to rewrite. The assistant was told not to use exclusively male or exclusively female words. So, the new version alternated between each. And, this is the way the job description now read:

The manager will be responsible for the smooth functioning of her department, will assist in the development of his direct reports, will directly supervise her second-in-command and delegate such duties to him as she deems appropriate, always maintaining oversight of his budgets and her major projects. He will provide departmental reports to her supervisor according to the published schedule, or as required by him.

Ms. Goldie Locks said, “Huh? I don’t even know who you’re talking about. It’s too confusing. The manager cannot be “female” in one part of the sentence and “male” in another. This won’t do. It needs rewriting.” So, she gave it to her assistant to rewrite. And, this is the way the job description now read:

The manager will be responsible for the smooth functioning of the manager’s department, will assist in the development of the manager’s direct reports, will directly supervise the manager’s second-in-

command and delegate such duties to the second-in-command as the manager deems appropriate, always maintaining oversight of the second-in-command's budgets and the second-in-command's major projects. The manager will provide departmental reports to the manager's supervisor according to the published schedule, or as required by the supervisor.

Most people who have written job descriptions or other similar paragraphs that use male or female pronouns can relate to the frustration that Ms. Locks and her assistant felt.



Ms. Goldie Locks read the new job description and said, “Well, at least it's not sexist any more. But, it's too cumbersome not to use pronouns. It needs rewriting.” So, she gave it back to her assistant to rewrite using non-sexist pronouns. And, after much grumbling from the assistant, this is the way it now read:

The manager will be responsible for the smooth functioning of their department, will assist in the development of their direct reports, will directly supervise their second-in-command and delegate such duties to them as they deem appropriate, always maintaining oversight of their budgets and their major projects. They will provide departmental reports to their supervisor according to the published schedule, or as required by them.

Ms. Goldie Locks read the job description and said, “Well, it's not sexist and it does use pronouns. But, it's not correct. We do not have agreement between the antecedent and the pronoun; the manager cannot be responsible for the smooth functioning

of their department. On the other hand, if we change “manager” to “managers”, the pronoun will agree with the antecedent, but the job description will not be correct. There is only one manager at this level and only one second-in-command and only one supervisor. So, it would not be correct to use the plural either. The job description needs rewriting.” Then, she gave it to her assistant to rewrite. And, after much gnashing of teeth and strong words heard muttered from the assistant's office, this is the way the job description read:

The manager will be responsible for the smooth functioning of his or her department, will assist in the development of his or her direct reports, will directly supervise his or her second-in-command and delegate such duties to him or her as he or she deems appropriate, always maintaining oversight of his or her budgets and his or her major projects. He or she will provide departmental reports to his or her supervisor according to the published schedule, or as required by him or her.

Ms. Goldie Locks was more satisfied than she had been before. But, she said, “This still is too clumsy. Can't you rewrite it?” And, she gave it to her assistant to rewrite.

This time, there was no grumbling, nor were there strong words heard emerging from the assistant's room. Within minutes, there was a note on Ms. Goldie Locks' table. It was a brief note from the assistant saying, “Your Assistant / He or She / We / I Quit!”

Most people who have written job descriptions or other similar paragraphs that use male or female pronouns can relate to the frustration that Ms. Locks and her assistant felt.

Perhaps it is time for our language to consider the addition of a few new words to make our lives easier. It is not as if we don't keep

adding words. Each edition of every dictionary proudly lists new words, often slang words, it has added. As every parent knows, there appears to be a new word added to the language every week (each of which it is at least a minor crime not to know and be able to use correctly). Also, many professional groups keep adding new buzzwords every year. Given that we have not exactly been parsimonious with the creation of words, a couple of new ones should not strain us significantly.

We might consider the creation of one word that we can use instead of “him or her”. The process of constructing such a word is reasonably straightforward. The first letter of him and her, h, is common to both words and so, should be the first letter of the new word. We could have the second letter belong to the female pronoun and the third letter to the male pronoun to get “hem”. Or, we could take the second letter from the male pronoun and the third from the female pronoun to get “hir”.

Now, to create a word for “his or her”. By the reasoning of the preceding paragraph, it would be “hes” if we use the second letter from the female pronoun and the third from the male pronoun. Alternatively, if we use the second letter from the male pronoun and the third from the female pronoun, it would be “hir”.

It would not be productive to have two “hirs”, one for the objective case and the other for the possessive case. It is true that the objective and possessive cases for the third person singular female pronoun are currently spelled and pronounced the same, “her”. However, since we are making changes, we might as well avoid that possible confusion.

Even if readers are in agreement so far, we may now get into tough “gender politics”.

Perhaps most men would vote for “hem” and “hes” since they most closely resemble “him” and “his”. Perhaps most women would want “hir” (the objective case) and “hir” (the possessive case) because they most closely resemble “her” (the objective case) and “her” (the possessive). It seems reasonable, therefore, to let each camp have its way for one of these words.

As every parent knows, there appears to be a new word added to the language every week (each of which it is at least a minor crime not to know and be able to use correctly).



Knowing that any one of these alternatives would be equally (un)acceptable, I propose “hir” as the one objective case pronoun to substitute “him or her”, and “hes” as the one possessive case to substitute “his or her”.

To get picky, but to be fair to both genders, the pronunciation of the letter in the original word would have to come along with the letter into the new word. So, the start of the word “hir” should be pronounced as if we were pronouncing him, but should end with the r sound. Similarly, the start of the word “hes” should be pronounced as if we were pronouncing her, but end with the s (z) sound rather than the r sound — hez would be the correct pronunciation

Also, instead of using “he or she,” the not-uncommonly used “s/he” should be recognized as a word, and probably pronounced “ss-he” or perhaps “see”.

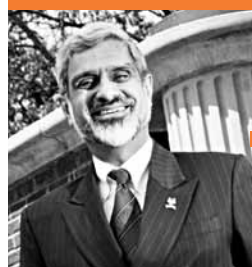
These new words would not substitute the individual words “him”, “her”, “his” or “her”. So, the girl would still use her book,

and the boy would still use his pencil. If Mr. Jones shakes hands with Ms. Smith, he would still shake her hand, and she his.

However, a job description might read:

The manager will be responsible for the smooth functioning of his department, will assist in the development of his direct reports, will directly supervise his second-in-command and delegate such duties to him as s/he deems appropriate, always maintaining oversight of his budgets and his major projects. S/he will provide departmental reports to his supervisor according to the published schedule, or as required by him.

And Ms. Goldie Locks will read the new job description and say, “This is just right!” ●



*Dr. Beheruz
Sethna
B. Tech., 1971, EE*

Dr. Beheruz Sethna (B. Tech., 1971, EE) is currently Professor of Business and President of the University of West Georgia (UWG). A distinguished alum from both IITB and IIMA, he is the first known person of Indian origin ever to become president of a university anywhere in America. He also obtained the University's first endowed Chair. Beheruz has published a book and 69 papers (30 since becoming UWG President), several case studies, and obtained externally funded research from the U.S. Department of Energy, IBM, AT&T and others. Amongst his many awards, he has been named among the 100 most influential Georgians.

The Perfect Murder

(Inspired by a very, very boring business meeting)

Rustom Kanga

I have an old acquaintance
Who's perfected the art of crime
He can kill in 20 minutes
Which is not a lot of time

He doesn't use a poison
Or a rope or gun or knife
So there's no forensic evidence
That he has shed a life

He's not as nasty as the Ripper
Nor as gory as Macbeth
He talks to you for 20 minutes
And just bores you to death



Dr. Rustom Kanga

B.Tech. Chem.

Engg, C'73

*DrRustomKanga,
B.Tech. Chem.*

Engg, C'73 went

*on to get a Masters
in Management and a Doctorate in Finance
from the London School of Economics. After
a career in the oil and computer industries
he founded his own company, iOmniscient,
which focuses on Artificial Intelligence based
Video Analysis. Rustom indulges himself by
writing humourous stories, songs and poems.*

The Seeker

An Extract

Original Marathi short story:

“Yaatrik” (यात्रिक) By G.A. Kulkarni

Translated by S D Pandit

Mr GA Kulkarni (known just as ‘GA’) was one of the wonders of Marathi literature.

Wikipedia describes him as ‘...legendary author ... who brought a new strength and vitality to Marathi short story and was admittedly the most distinguished exponent of that genre ...’

His writing is marked by an astounding canvas, which ranges from the wretched to the sublime, touching virtually everything in between - commonplace, exotic, philosophical, mystical...

He has the ability to take the reader by surprise with unexpected flashes of imagination and thought, unexpected but most apt similes and, often, a totally different light shed on things previously known in another context.

He gripped the imagination of readers and critics alike during his lifetime and still continues to do so, twenty-five years after his death.

Yaatrik, a fairly long story (and one of GA’s most well-known), looks at Don Quixote in a new light. Beginning with the return of a weary Don and a carefree Sancho from their travels, it covers their brief pause on a hilltop for rest and their final arrival at their village. During the pause, Don has imaginary dialogues with various characters, known

and unknown, which bring out his personality and philosophy. Sancho, foil to Don with feet solidly on the ground, treats the whole thing with tolerant cynicism. The extract is the concluding portion of the story, with a twist that is as touching as it is unexpected.

Shrikrishna Pandit is an IITB alumnus (B Tech. ‘73 EE 1973), who has worked in the field of EPC Projects most of the time. His translation work started more than 20 years ago, proceeding -of necessity- very slowly, but he has stuck to it, translating literary pieces from both Marathi to English and English to Marathi.

This extract is from a forthcoming collection of GA stories translated by him and being published by Popular Prakashan Pvt. Ltd, Mumbai, an old and respected publishing house, who have published most of GA’s Marathi work.

Don was feeling a warmth, a freedom as if he was slowly coming out from a thick layer of dead, confining skin. He felt an urge to get up and go to the window. At that moment, a faint tinkling of small bells caught his ear. Don, suddenly attentive, started watching the window closely. The sound seemed to be getting clearer and coming closer. Anon, he saw a clown - a harlequin, standing outside, clutching the bars of the window.



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“I was worried, wondering if we were going to meet one last time before I go.” Don was smiling, “In the old days you used to come often, though unpredictably, and meet me on my way. Now my wayfaring days are over. I can't even stir from my place . . .”

“No, you don't have to come out anymore” the harlequin said, with a shake of his head. The bells on his fool's cap tinkled again.

“When your time comes, I shall come and gently waft you away with me. And till then I shall wait here for you. When you come with me, you will really meet your enemy soldiers and, with your flashing sword, vanquish them. And your Princess, lovely as the shining stars, will give you an adoring smile like a ray of the sun lighting up a diamond! Imagine, my friend, a world which can be *shaped* by your dreams - in place of this dull, lifeless one where you have to conjure up visions.

What more could you wish for?!”

The Clown raised his arm and with his finger drew a half-circle in the air. And instantly, a dazzling rainbow appeared there, as if lightning of seven colours had suddenly flashed together. Don, wonderstruck, tried to raise himself on his elbows.

“See?” The harlequin smiled, “Then you would no longer have to care about those who call you mad! I have myself seen many

Imagine, my friend, a world which can be shaped by your dreams - in place of this dull, lifeless one where you have to conjure up visions. What more could you wish for?!



such rainbows, even when there was no rain or sun.”

Sancho noticed that Don kept looking at the window and he got up to close it against the breeze coming in. The Clown, seeing him approach, quickly hid behind the bush.

As Sancho made to close the window, Don groaned, “Wait! Let me talk to the Harlequin for a while. I have reached the end; I don't know if I will see another day break. Please - let me be, for whatever little time I may have.”

“What! That clown again!” Sancho clapped his hand to his forehead in agitation. “Has he still not left you? Is this the same one you used to see earlier, wearing the long robe with red patches? Or have you found a new one?”

“The same, Sancho, of the old days.”

“The one with the long, pointed cap and the stick with bells? The same one that draws

rainbows in the air with his finger?”

“Yes, yes. The same one”, Don nodded; but then caught himself with surprise and gave Sancho a keen look. “Sancho, I never told you about the rainbow” he said, “How then do *you* know about it? Surely you must have seen him yourself - why should you then mock me? “

For some time Sancho stood wordlessly by the window. Then he shooed away the woman standing hesitantly near the inner door and, closing the door, came and seated himself opposite Don.

“I cannot keep secrets from you any longer” he said.” You may well see another sunrise; maybe a few more, even. But you know yourself that there aren’t too many days left to you. They say a man at Death’s door never lies. That may be so –I don’t know. But I do believe that such a man shouldn’t be *lied to* . . .”

“Yes. I too have seen that Harlequin. It was a long time ago. I was just a boy then - a mere greenhorn! And so gullible! The moment I saw anything good, I was ready to write a ballad about it and burst into a song. “

“Once, a colourful caravan of gypsies came to our village and camped for the night. There was song and dance all night, with the gypsies’ coloured kerchiefs fluttering in the air like butterflies. Their harps sang through the night. The beat of clicking castanets and stamping heels filled my heart and all my being.”

“I was intoxicated. It was as if the very blood in my veins had turned into some mellow wine. Among the gypsies there was a girl - a raven-haired beauty with deep, dark eyes. When she talked, even the most bewitching of songs paled into nothingness. There was dance in her walk - in her every movement.”

“At daybreak, they hitched their caravans. Soon they were on the way, the tufts of hair on the horses’ hooves swaying in the breeze. I followed them without telling anyone at home - and remained with them for well nigh two months. I had seen this clown then, once or twice. He had beckoned to me from a distance.”

“The Gypsies were moving from village to village. And music flowed every night, at each campsite. Elsa - that was her name - smiled at me often, and accepted flowers from me. Once I gave her a ring and she wore it for a whole day! Another time, when I had laboured for two days and painted her caravan, she even caressed my fingers. I was clutching at these slim threads of hope; and weaving a whole tapestry of them in my mind.”

“Disillusionment was inevitable! And it was not long in coming.”

“It was a moonlit night. There was an enchantment in the air that none could have escaped – the very leaves lying dried and dead on the ground must have wished that night to be alive again and sway in the gentle breeze; and the leaves still on the branches must have felt like flowers, bright and fragrant!”

“I had left the camp for a walk. In that magical hour, the river had become a stream of flowing silver; the trees were silent, wrapped up in themselves like someone who had nothing more to say or ask. There was a fresh, lusty fragrance in the air, as if the very earth had turned into musk!”

“Just then, I heard voices behind a bush - and stopped in mid-stride. The voices were followed by a peal of laughter. And for me, that tinkling laugh was like a dagger that scoured the fragrant moonlight. I knew that laughter. I used to hear it constantly - even when I was alone. And it never failed to send

my heart racing - even when it was meant for someone else.”

“I peered through the bush. A fleeting thought touched my mind for a moment- had she . . . been waiting . . . for me? Was the laughter her expression of joy at seeing me? But even as the thought came I saw how presumptuous it was and brushed it aside. “

“Elsa was sitting beside a handsome gypsy wearing a sequined shirt and red scarf. He

Because you did not live for the belly alone, using the navel for an eye – you never forgot where the real eyes are!”



asked, 'But what about that rustic lover of yours?’

Elsa laughed and, stretching down on her back, said, “That one! My lover! You silly darling! A frog wouldn't spit on that clod! He tends the horses, washes the caravan - who would leave a servant like that, who works for love alone and asks nothing more! I scatter my smiles at so many men; if they all were to be my lovers, fifty villages would be too few for them! And, as for this yokel, I am not going to keep him much longer. Tomorrow we cross the river; and then it will be a snap of my fingers and goodbye to him! I like to see new faces among my servants - just as I like to see them among my lovers!”

“For me, the moonlight curdled and died at that moment.”

“That same night, I picked up my bundle and left. A dog that I used to feed every day followed me and just wouldn't go away - what an irony! Here I was, beset with unwanted devotion, after the constancy I craved for had spat in my face!”

“Finally, I picked a couple of clods and threw

one at the dog. It pulled up, shocked, and stood there looking at me unbelievably. Then, with a long whine, it withdrew, edging backwards, and went away. I saw the clown then, for the last time. I threw the other clod smack into his face, and he too vanished. After that he has never dared come face to face with me.”

“I had realised that I would always be earth-bound. And so, with all my will, I dulled and deadened everything that couldn't survive in its dirt and grit! I returned home, slogged like a donkey, and married.”

“My wife wouldn't be noticed - not even by herself. Her waist could do with a roll or two less of fat and her feet are like a turtle's back. But her father had a farm and five hundred sheep. And what was more, he was near his end. You can't choose your own parents, but you sure can choose your wife's! You must choose a well-to-do father-in-law with an only daughter!”

“When your feet are on the ground,” Sancho continued, with a sigh, “there is little danger of coming down with a thud . . .”

Don was wondering - was this the same Sancho who had spent so many days with him? He sighed, “I am grateful, Sancho, that you remained by me throughout. So many insults, so much ridicule fell to my lot, but you did not leave me! But it won't be much longer now.”

“Soon you will be rid of my haunting spectre. You will prosper after that. You are a wise man and know the ways of the world. In no time, you will be rich- a pillar of society. People will speak of you with respect - they may even forgive your wanderings with me.”

“Oh, no, no. No! This is meaningless!” In anguish, Sancho brushed aside Don's words, “It was no greatness of mine that I remained with you. Do you think I could have stayed

away, even if I had wanted to? You have not realised one thing, my lord, in all these days. I am not separate from you - I am the other half of you. Where could I have gone without you? I crushed out everything that could not have survived in my mundane, drab life. And that very thing – all that I had weeded out from my life - remained alive in you. Not only that - it strived its utmost to flourish. Do you think I couldn't feel the ridicule heaped on you? No – every small thing pierced me; I may well have *been in your place!* But I had covered my soul with an armour of callousness.”

“Do you know where your greatness lies? I have never talked about it so far - you would have seen it as just another sarcastic barb; but now I must.”

“You are the symbolic sacrifice of all youth. Some religions had this practice in old times- the sins of the community were ritually transferred to a sheep which was then driven out into the desert. We – the youth of this world, transferred to you all that was living within us. You endured all the hardships, the endless wanderings, the ridicule, seeking *our* dreams. So what if all that is now going to end within these walls? What you have done is still enough to fill one's heart with pride just to stand in your shadow. And you are thanking me! “

“Yes; I could very well become a pillar of society - and a thick one too, why not? I may even become the Mayor of this village. I will renovate the church, get a well or two dug, and start a dole-house for the beggars. The beggars will then promptly produce more of themselves. And then - one more almhouse, one more well and a place for another Pillar of society! What else can future hold, my Lord, for a man like me, whose very soul has been castrated!”

“Every tree can be made into a pillar; all

one has to do is to cut away all the buds - anything new that sprouts on the trunk. But have you seen a pillar sprout leaves? Even lightning touches only a tree - if a living one is not around, it finds a dead one. But it looks for a tree – something that has left the earth and strived to go upwards. Have you ever seen lightning searching for a *pillar?*”

“You have wished so much for me. But that, exactly, is the eternal damnation of the rest of us. People mocked you because you chose to strive for your dreams; for a clean, honest life, without wearing the mud-masks they can't do without-because you tried to live a life they all shrank away from! Because you did not live for the belly alone, using the navel for an eye – you never forgot where the real eyes are!”

“But, I swear to this- the times will change. Sometime, somewhere, people will appreciate you. And someone may even remember me faintly. If at that time they just mention that I – even as a mere companion – joined you in your quest, then, lying as I will be under six feet of earth, I shall know happiness.”

A strange cackle from Don broke the flow of Sancho's thoughts. Startled, he rushed to the bedside. Don's face was ashen and his smile looked like a thin line drawn in the ash.

“Sancho, what a fool I have been!” he said, “I can see it clearly now. Oh, what a farce! Riding that nag, hanging that suit of armour on myself and pretending to be a gallant Knight! A yokel like me, barely able to read, and with may be an inch or a half of ability - a nobody! I don't know what came over me - getting carried away with those delusions! But no more, Sancho - the spell is gone. Do me a favour now, my friend. Find a small place for me. When I get better, I am going to start trading in wheat and tinder- especially tinder. I hear it fetches a one-for-one profit.”

Sancho's face fell. He hurried to the door and gestured to the woman to come in. "There isn't much hope now." He whispered, "He has lost his senses. When a man like him starts talking horse-sense like the rest of us, it is all over."

The woman lifted her apron to her eyes and stumbled out. Sancho, in despair, came back to Don's side and stood there, silent and broken-hearted.

Seeing Don's eyes staring lifelessly, Sancho touched his face. Then, in sudden alarm, he took the mirror from the wall and held it to Don's face. The glass remained clear. Sancho's hands fell to his sides. He unfolded a sheet and, drawing it over Don's face, dropped the curtain on his life.

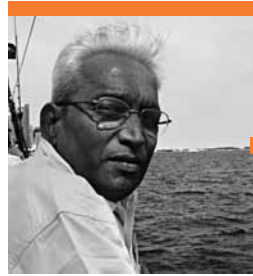
He came out, closing the door softly. The barber was still sitting on the platform by the door. As soon as he saw Sancho, he started talking, "Like I was telling you, Philip - the onion and garlic vendor - has got it in his head to get married. So I told him, 'Look, remember one thing. You marry mainly the girl's father. So check up on his cash and property before anything else. The girl may be like a stuffed sack. So what! If you could today see what your wife will look like after fifty years, would you ever marry? Would anyone, I ask you! At least you are lucky -you can see the future right now. So there won't be any shocks for you . . .'"

Sancho knew the hallowed tradition that a barber in full flow is not to be interrupted. He just sat there, saying nothing. The barber, too, knew the custom that a barber should never stop talking, whether anyone is listening or not.

So he continued unabashed, "So I told Philip, 'Listen, you poor fellow! Yesterday's gold looks and sounds as sweet today. But yesterday's beauty - she looks as lovely as a

crumpled tin pot! Why, even a dog's feeding-bowl can be made up to look like a queen's mug. All you want is a fistful of rouge, a few spots to stick here and there, and a little lampblack to colour the eyebrows! Beauty, bah!" He leered and winked, "In the dark, all cats are black, eh!"

Sancho said nothing. But now he covered his face with his hands, to hide the tears he could no longer hold back. ●



Shrikrishna Pandit

B Tech. '73, EE

A Guru for Eklavya



Humblebee

Words, no matter how beautifully strung together, are but a limited vehicle for capturing such a multifaceted, nuanced, and complex entity as another human being. Can vocabulary be anything but scattered bits of flotsam when you seek to encompass and gather together the totality of someone as unique as Prof. Deepak B. Phatak? His larger than life persona, the contagious *joie de vivre* that never fails to infect you with its fervour and his boundless energy, a match for the ten thousand teachers that his programme routinely teaches in a single simultaneous session across the nation.

He has spent an entire lifetime in service to his vocation as a teacher and, given the choice, would spend several more. Anecdotes are legion about Phatak-isms among the thousands of students he has taught. But the story of his life can be an inspiration to thousands more. The density of people in our society is so thick that after a while we lose sight of how the power of one can make a difference. This is a real life story of the power and passion of one: to enjoy, be inspired by, and to serve as the original chicken soup for your soul.

Lessons learnt early

It is rightly said that the germ of who you are can be found in the life and stories of where you came from and how that expe-

rience shaped you. Prof. Phatak's family history is a story of hardships and perseverance in the face of adversity. The grandson of a farmer from a small village called Piplai in Khargone district of Madhya Pradesh; his father grew up as an orphan dependant on the support of his family till he ran away to Indore on completing his tenth standard to pursue his dream of becoming a doctor. His mother too hailed from a traditional and poor *purohit* family with many brothers and sisters.

Deepak was born in Pune in 1948. His father's attempt at bringing in army discipline to his government job with the Madhya Bharat Health services had the inevitable result of transfers as a way of life for his family. Young Deepak changed 14 schools in 11 years and learnt the valuable lessons of having to relate to people quickly, forging friendships with urgency, and learning to put his faith in people—a lesson that has stayed with him till date.

The ability to trust also taught him his first ethics lesson, from a nameless child selling Jamun in a small railway station, when he was accompanying his younger brother who was to attend an interview for a Science talent search in Mumbai. The story goes thus: The brothers bought jamun from the boy for four *annas* but Deepak (a college going young man by then) asked him to bring some cigarettes from the other end of the station. A packet of Wills cost 8 *annas* those days and his younger brother pointed out "Tu pagal hai wo kaiko aayega abhi ? Tu train me baitha hai utaarne walla to nahi hai." The whistle blew and the train started to pick up speed but the boy appeared in the nick of time, running along with the train to hand over the packet of cigarettes and all the remaining change. When Phatak tried to reward him with 4 annas he replied "nahi saab, jamun ke paise aap ne de diye." As



“To serve your nation you are not doing anyone a favour, do it because you ought to do it anyway, as a citizen”.



DBP pointed out “he would not take a single paisa extra and I have never forgotten that incident.”

His mother made the reticent urban city boy collect cow dung from the street outside his house to teach him the lesson that no work is below your dignity. The first time he stepped out on the street there was no dearth of *gobar* but the poor Deepak felt as if the eyes of the world were trained upon him. By the second time he had figured out that people were not too bothered with what he was up to and by that evening he was busy whistling a tune in carefree abandon while collecting the same *gobar* that he was so ashamed to touch.

His *mama* and *mausi* were old school Congress workers and freedom fighters in Goa, who had been incarcerated in jail as political prisoners. His *mausi* in particular was his inspiration. When Goa became independent she was offered a minister's post which she turned down to return to her role as a wife and mother. It is from her that he learnt that “To serve your nation you are not doing anyone a favour but do it because you

ought to do it anyway, as a citizen”.

His Dharmabhumi & Karmabhumi...

Early on in life Deepak knew that he either wanted to become a soldier or a teacher. IIT Bombay was a name he had heard fleetingly while doing his inter-science at Gwalior in the gap year before engineering. Since then, he harboured a dream to get admission in this great institution. He could not do his B.tech from there because of his family's financial condition. He eventually managed to enter the revered gates in 1969 to do his M.Tech. Once he was in, he didn't give himself *other choices* about his career, he did not say, “I'll let the opportunities that come my way decide the course of my life,” and not once did he have to brood or regret his decision. At a tender age of 20, he knew that this was to be his *karmabhumi* for the rest of his working career. And he knew that nothing would ever come in his way.

Once he was here, he wanted to stay and do what he had set out to do in life—teach. To a regular reader it may seem and also to himself, it seemed probable. All he had to do was finish his M.Tech and re-join the institute for Ph.D. He had already identified a Ph.D guide who he wanted to work with and who wanted to work with him.

But that was where it all took a nasty U-turn. His parents finally consented to get him married off to the woman he had known and loved for seven long years. But before he did that, he had to finish his M.Tech. M.Techs at IIT Bombay concluded in May and he was to wed on May 16th. In April, however, he was told that he would not be allowed to submit his M.Tech. dissertation till he had built an identical second unit for a sponsored project at BARC. A whimsical condition but a non-negotiable condition nevertheless. This new development had a cascading effect. It not only put his M.Tech dissertation submis-

sion on hold indefinitely, but also further delayed his getting admission for Ph.D. at IIT Bombay, which further delayed his prospects of getting a job and accommodation at the institute and a regular income. He had not accounted for this mis-development.

He had hoped to get his promised Research Assistant's position with his M. Tech. dissertation guide that he later realised was a conditional offer that remained valid only if he agreed to sign in as a Ph.D. student with him. When he naively mentioned the name of his preferred guide for a Ph.D, Prof. Kenkre, the job offer promptly and not even subtly disappeared.

When he got married and came with his beloved young bride, he didn't have a job or a house that he had hoped for. He didn't earn but thankfully his wife Pratibha, who was an occupational therapist, did. Still it was not easy. The rent was high and the money was not enough. But the two had married for love and their pride would not let them seek help from either one's family.

On one hand he struggled with his own financial situation, which only worsened because on the other hand he had to cross soaring high trench walls built by his own guide before he could enter IIT Bombay.

Things got so bad for the last one month that they didn't have enough money for rent, grocery let alone the niceties of life. So much so that the two would go with just one meal a day just to physically sustain themselves. A tempting offer from his mentor from Indore for a position of a lecturer at Indore Engineering College couldn't have come at a better time. Moreover, it was an unconditional offer that assured money, accommodation and security that one needs when one takes on the responsibility of a family. He could have been easily tempted to give up the idea of joining IIT Bombay forever. But Indore

Engineering College was not his destination. It was not his karmabhoomi.

With strong support from the gentle and generous Pratibha, he saw through those days, finished completing the 'second unit', submitted his M.Tech. dissertation in November 1971 and joined IIT Bombay as a Research Associate (a temporary faculty position given while doing PhD) with Prof. Kenkre on 1st of December 1971. It's a

“1) I shall not leave the shores of this country till I have served her for twenty years.

2) I will never ever serve a foreign flag in my life

3) I shall retire or die from IIT Bombay which ever comes first.”



historic date for us readers, fans and followers of Prof. Phatak because this was the date that started it all for us. For him, it was date that simply had to come.

From 1969 till date, it has been 44 years and counting that he has spent in service to his Dharma and his karmabhumi. He never followed the established norm and sought his fortunes on a foreign shore, but this was by conscious choice. He says “I was committed to serving this nation. In my early professional life I made three rules about myself and I have followed them so far and I intend to follow them till the end of my journey.:

1. I shall not leave the shores of this country till I have served her for twenty years.
2. I will never ever serve a foreign flag in my life

3. I shall retire or die from IIT Bombay which ever comes first.

He has served his first rule having left IIT only twice in these 44 years. First time on deputation in 1983–84 to JSITS Indore to serve his Gurudakshina by setting up the Computer Science Department there. The second time was in 2002–03 when he took a sabbatical to understand the problems in Engineering education, particularly CS education in India and ostensibly to write a book. He visited 67 colleges, deliberately avoiding all IITs and big colleges, and concentrating on smaller institutions. He spent 2–3 days in every college interacting with students and teachers. The experience was so inspiring that when he returned he decided to reach out to the larger student universe and the million Eklavya's who await a guru through Project Eklavya, an online distance-learning program for the IITs.

But we digress here. To return to his self imposed rules, the second cannot be said to be fulfilled till he reaches the journey's end. But he did share an interesting idiosyncrasy “ I was born in 1948 and I will die under my own flag. So even when I go out of the country my luggage always carries a flag and a small amount of Indian soil in an envelope sealed with instructions on a note that in the event that I move on to the great beyond on foreign soil and my body cannot be sent to India; do what ever you wish to do with me with this soil and under this flag”. As for the last he sets to retire in April this year from the very institution he had promised to serve almost half a century ago.

A Shikshak's Dharma

Those who dare to teach are reconciled to being life long learners. Truly great teachers not only have great passion for their work, but also for their craft and learn continuously from real life situations. When we asked him

about his own inspirational teachers and mentors he said, “Choose ten random teachers and make a list of all the good points that each one has. Then make another list of all the bad characteristics of each of those ten. I did that and I discovered that I can create an ideal teacher from one and an absolutely useless one from the other. The second is best thrown in the dustbin. When I joined as faculty I took courses with other teachers and what I learnt from them is enough to last

The ability to dream dare and deliver—this is what gives IIT Bombay an edge over the rest. If I appear taller today, it is because I ride on the tall shoulders of our alumni, and on the equally tall and strong shoulders of my colleagues. Whatever I have been able to achieve, has been made possible because of them.



a life time. Prof. Kenkre who was my guide: his board work was world famous. Prof Bedford: his way of dealing with students was extraordinary. Prof. K D Joshi: his logical arguments were exceptional. Prof. B V Limaye: his judgement of time, something that I have still not been able to emulate to this date. Prof. N L Sarda: his meticulousness. The list could go on.”

Not all his teachers were from the class room. A few years ago Prof. Phatak was asked to give a talk in Marathi in maître tantragnyan (computer science education) by Thana Vigyan Parishad in Wada for tribal students of 9 to 11 standard. Of the 300 boys and girls who attended the lecture, there was one boy who hung around afterwards

and wanted some questions answered. The organisers wanted Prof. Phatak to join some local MP for tea but the boy grabbed hold of his hand telling him that he had walked 10 km to listen to him and routinely walks the same distance as he cannot afford a bus ticket. He also proudly announced that he stood first in his class and Prof. Phatak was not to leave without answering his questions. No points for guessing who was given the short shift and as Prof. Phatak spent time discovering that the child (all of nine years old) wanted to know how to become an expert in IT not because of the stock aspiration of a fat pay cheque but because he had heard of a student from IIT Bombay called Nandan Nilekani who had built a company called Infosys. He said “I want to build a company like that.” “This was the aspiration of a 9th standard tribal student from Wada –What are we doing for them? He is another Eklavya and I decided then that I wanted to serve those Eklavyas for the next ten years after my retirement.”

At heart, Prof. Phatak, by his own admission, is a primary school teacher who could easily spend another 45 years teaching. With Aakash he is trying to experiment with high schools students and Indian languages and plans to spend the next ten years working to create Indian language knowledge content for students who study in their native language.

His Viraasat

A teacher’s remuneration is always counted in currency other than money. His students range from the 70’s till date and almost without fail all remember him with gratitude and tremendous admiration. The same Nandan Nilekani who is a role model for countless young people across the country holds his erstwhile teacher, Prof. Phatak, as his own: “I have known Dr. Pathak as teacher, mentor, and most importantly as a friend for over 30

years. His infectious enthusiasm, his indefatigable energy and ever present optimism has been a great source of motivation for me at many points in my career. It began with the days at IIT, then working together with him on alumni and fundraising, setting up the school of IT, creating India’s first incubator, understanding his vision of distance learning and open source, collaborating Aadhaar with Aakash... there are so many facets and dimensions to our relationship...” It also indicates the number of hats that Prof. Phatak wears with sublime ease. He is from that rare breed of gurus who believe that to be a teacher is a 24 x 7 job. A recent graduate from his department Swapnil Jadav shares, “twas a joke going around in KreSit that DBP (Prof. Phatak) is not one but 10 IIT profs combined into one and sent as a gift to us.”

The admiration is not limited to students but fellow colleagues as well. As Prof. L Narayanmurthy shared with us, “Deepak Phatak illuminates people and things around him. His capacity for observing and highlighting the positives in people is amazing. He has shaped hundreds of youngsters with latent talents, humble backgrounds, and, not so impressive educational pedigrees into confident, dynamic, and valuable contributors to both industry and society. Working with Deepak Phatak can be demanding, but who will complain when the team is perpetually on a *high*—full of optimism and dedication, blended “with Deepak’s inspiration.”

Yet it is a testament to Prof. Phatak’s humility that when he was awarded the Padma Shri this January, he attributed this recognition to two activities within the last decade, whose national impact is now seen. One is for training teachers on large scale, which is driven by the Distance Education Program (DEP). The other is development of affordable solutions, culminating in the Aakash project, driven by

our Affordable Solutions Lab (ASL). He was quick to point out that both these initiatives have deep roots in the erstwhile School of IT (KReSIT), now merged with the CSE Department, and the pioneering role played by the early contributions of Kanwal and Nandan for KReSIT which provided the right platform.

He dedicated his award to IIT Bombay and said that new initiatives need timely and strong support from within the Institute. “I have worked under many Directors: Prof. Kelkar, Prof. De, Prof. Nag, Prof. Bedford, Prof. Suhas Sukhatme, Prof. Ashok Misra, and Prof. Devang Khakhar, always getting the support I needed. If anything, it has progressively become speedier and focused. He went on to say, “Amongst the Institutions in India, I wonder if there is anything that matches the quick-fire leadership support at IIT Bombay. The ability to dream, dare and deliver—this is what gives IIT Bombay an edge over the rest. If I appear taller today, it is because I ride on the tall shoulders of our alumni, and on the equally tall and strong shoulders of my colleagues. Whatever I have been able to achieve, has been made possible because of them.”

Bringing a passionate and resilient self to teaching every day of every week of every year, after year cannot be easy. The processes of teaching and learning are rarely smooth, and the results are not always predictable. The commitment hope and optimism and above all your passion and humility can be easily eroded in a *sarkari* system with numerous temporary impediments, where public appreciation comes on occasions too few and far between. But Prof. Phatak has a passion that cannot be faked and he has forged on undaunted with his humility and positive attitude to life untarnished by the system. If you wish to be as unstoppable as he is then heed

his words well “When faced with negativity and frustration I always sleep over it and let the frustrations die down exponentially. I have never let a matter remain in my head or heart for more than 24 hours”.

The word *passion* features regularly in students’ descriptions of their best teachers and Prof. Phatak is no exception. Our biography of his life is not an attempt to portray him as a modern day Leviathan .But in today’s day and age when role models come in the shape and form of business leaders and entrepreneurs, we wanted to invert the system on its head and hold up the incandescent life of a teacher as a role model. Prof. Phatak without doubt deserves a place of honor among the country's most inspirational educators. Over the decades, he has inspired numerous students, teachers, parents, and fellow administrators with his enthusiastic approach to learning. Several generations of India's IT leaders have learnt under the tutelage of Prof. Phatak be it at IIT Bombay or outside.

Deepak is indeed an apt name for him.

Good teachers never retire, *emeritus* may be a title you pick up along the way but usually they eschew titles, preferring simply to carry on, ignoring the passing of the years. As we leave Prof. Phatak searching for his packet of cigarettes—he shares that he has promised Pratibha that he will quit at 95 with a mischievous twinkle in his eye—we leave assured with the knowledge that here is a man who will never quit being a teacher. When the curtain drops it will be with his teacher’s cap firmly screwed on his head searching for the million Ekalvyas that he is yet to reach and teach and transform so that when the day is done there will be legions more who were inspired to follow in his footsteps. ●

A Linnaean Taxonomy of Fauna *In Communati Indianae Scientificum*

Prof. Vivek Borkar

After two decades of intensive research on the fauna inhabiting the ecological niche *Communati Indianae Scientificum* (colloquially known as the *Indian Scientific Community*), we have been able to identify, characterize and classify a number of species inhabiting this habitat. With distinctive aspects such as high rates of emigration, immigration and mutation (sometimes within a lifetime) and a variety of foraging techniques, they make a fascinating microcosm worthy of serious biological research. The present article is but a preliminary step towards a comprehensive study, being merely a taxonomy for the dominant species in the Linnaean tradition. We have identified twenty-seven major species:

1. *Vicious Incumbentus* : This species is one of the early occupants of this habitat and is noted for its ability to capture new uncharted territory for its foraging activity. Thanks to this, they are able to generate surplus even with rather limited foraging abilities. They have strong territorial instincts and guard their territory by means of a poisonous sting with which they attack any encroacher. The population of this species is maintained by mutation from other species. While they do reproduce by cloning, the offspring belong to the species *Protegi Sidekickus* discussed next.
2. *Protegi Sidekickus* : Being cloned from *Vicious Incumbentus*, these inherit many attributes of the latter except the enterprise. They tend to adapt a narrow range of foraging techniques which they apply repetitively in a narrow area. Because of low adaptability, they tend to die out rapidly in face of any abrupt changes in the environment. They multiply by cloning.
3. *Nerdu Paperchurnus* : This species is characterised by a very high facility with one or the other foraging technique and great diligence. Akin to the worker bee in their social role, they produce most of the community surplus. However, being suited only for narrow specialised tasks, they usually have a weak flank which makes them vulnerable to attack. Thus they either fall prey to other predatory species or build a symbiotic relationship with a member of another species, trading their surplus for protection and patronage.
4. *Committimemberii Rulesenbylawquotus* : The members of this species take charge of the more mundane chores of the community. Nevertheless, foraging being the most socially respected activity, they feel obliged to fake a nonexistent foraging prowess. Because of their willingness to undertake the less exciting tasks, the

society has evolved the evolutionarily stable strategy of pretending that they are not pretending.

5. ***Bigmoni Projectovoros*** : This species specialises in acquiring and organising ancillary foraging equipment for others for which it gets a part of the surplus. Like *Committimemberii Rulesenby-lawquotus*, they are given to faking a foraging ability which is not really there, but their pretence is tolerated by common consensus.
6. ***Whiningus Leanandhungryfacus*** : This species has low foraging ability. It generally congregates near sources of certain liquid and gaseous stimulants and makes shrill sounds. Their main activity is to build elaborate justifications for their own low foraging ability and to discuss and rank order the more successful foragers from other species. Their social utility is derived from their willingness to function as foot soldiers for other species during intra- and inter- species conflicts.
7. ***Smoothtalkus Jetsetae*** : This species is characterised by a sonorous sound and bright plumage, and is highly mobile. Its role is analogous to that of a canary and it traverses different parts of the region entertaining other species. For this it is allowed to live off the community surplus.
8. ***Genealogicus Favorabilis*** : These are offspring of highly successful foragers in *Communati Indianae Scientificum* or from neighbouring habitats such as *Communati Indianae Administrativii*, *Communati Indianae Politicum* or *Communati Indianae Commerciali*. They are allowed to start their lives with an abundant supply of food from the community surplus and an artificially

implanted plumage. After the supply runs out, they usually mutate into one of the other species, notably 4 and 7 above.

9. ***Beamingfaceus Peckatfringeus*** : This is a very benign species, very diligent but not very successful as a forager. Its primary task ends up being grooming of the young ones in the community.
10. ***Senilae Almosttherebutnotquiteus*** : Many successful foragers compete to

Saliuatii Bootlickus:

This species has a symbiotic relationship with *Primmadonnae Fundsenhonourdisbursae* and is allowed to live off the droppings of the latter for services rendered, such as picking fleas in the latter's coat and crooning in unison whenever the latter makes a sound so as to amplify its effect.



match the foraging standards of other better endowed habitats and come close. When their foraging ability wanes with age, they mutate into *Senilae Almosttherebutnotquiteus* and spend their time spinning somewhat inflated tales of their near miss with glory. Because of their inspirational value to the young ones of the community, they are generally allowed to live handsomely off the community surplus.

11. ***Anecdotos Historicalii*** : This species serves as a chronicler of the community and makes a living by narrating real or imaginary tales of great foragers of the past (from fifteenth century to the previ-

ous decade) to the young ones. For this, they are allowed a part of the community surplus.

12. *Sonofsoilii Virtuosi* : This species remains in one location throughout and also refuses to use other than its traditional foraging techniques. With claims of additional spiritual superiority purely on the basis of its immobility and immutability, it claims larger than its share of the community surplus.
13. *Bombasticus Posturomaticae* : This is a parasitic species which lives rather well off the community surplus by successfully faking foraging prowess. In this it is aided by an artificially acquired plumage and a loud voice.
14. *Reflectoglorius Lastyearsnobelprixus* : This is another parasitic species which lives off claims of expertise in foraging techniques that have proved very successful elsewhere in recent past, and on those grounds, demanding (and usually getting) a larger than fair share of the community surplus.
15. *Backgroundnoisus Coauthorshipgrabbae* : This is yet another parasitic species which latches on to members of other species with better foraging skills and by sheer pretence of working along, manages to corner a part of the surplus for itself.
16. *Nirvanae Seatwarmacus* : This is the most parasitic species of all, which does nothing at all and is allowed to live off the community surplus simply because *Communati Indianae Scientificum* has not evolved the evolutionary strategy, prevalent in other similar societies, of killing off its useless members.
17. *Trivialis Letterstoeditorii* : This semi-parasitic species specialises in secondary and tertiary foraging activities, but by the sheer volume thereof and a not inconsiderable bombast to go with it, it manages to fake primary foraging prowess and corner a larger than fair share of the community surplus for itself.
18. *Mezbanus Gracious* : This species has the job of arranging visits of successful foragers from other better endowed societies and playing host to them. As a token payment for this, they are allowed a share of the community surplus.
19. *Exchangeprogrammae Internationalis* : This species is closely related to *Mezbanus Gracious* and specialises in exploiting mutual arrangements between *Comm. Sci. Ind.* and other, usually better endowed societies, to visit the latter and live off the community surplus there.
20. *Primmadonnae Fundsenhonourdisbursae* : This is the most powerful species in this society. Small in number and created by mutation of the more successful foragers of the other species (notably *Bulldozus Upwardmobilitii* discussed below), they control the distribution of community surplus, because of which the other species are obliged to pay homage to them from time to time. This is also aided by the fact that they carry lethal poison in their stings. They are extremely wary of each other, but put up a united front, sharing their surplus with each other generously.
21. *Bulldozus Upwardmobilitii* : This species has moderate foraging ability, but a strong voice, bright plumage and lots of energy which allows them to corner more than their share of the community surplus. The most successful members mutate into *Primmadonnae Fundsenhonourdisbursae*.
22. *Salivatii Bootlickus* : This species has

a symbiotic relationship with *Primmadonnae Fundsenhonourdisbursae* and is allowed to live off the droppings of the latter for services rendered, such as picking fleas in the latter's coat and crooning in unison whenever the latter makes a sound so as to amplify its effect.

23. *Cantankerus Unionleaderii* : This species is sometimes mistaken for *Whiningus Leanandhungryfacus* because of the similar sounds that it makes, but is far more dangerous because of its lethal poison. By willing to act as masterminds in intra- and inter- species conflicts of other species, they gain much social clout, often ending in a symbiotic relationship with a member of *Primmadonnae Fundsenhonourdisbursae*.
24. *Exgenius Frustatis* : This species shows very high foraging prowess for a short time, which then dries out. At this point they mutate into one of 4 – 7, 9 – 11, or 13 – 23 above.

In addition to these, there are three species who emigrate to other better endowed habitat when they are young and return much later:

25. *Firangis Coolcatus* : This is the most benign of these species and is characterised by a bright plumage and distinctive sounds acquired during their travels. They have the advantage of starting with a good initial endowment of food and better foraging techniques acquired elsewhere, and tend to live off these rather well till these run out. At this point, they usually mutate into 4, 7 or 10, an occasional one making it to *Primmadonnae Fundsenhonourdisbursae*.
26. *Pardesii Chiponshoulderus* : These have been reasonably good foragers elsewhere but cannot adapt back to this habitat,

resulting in lowered foraging ability. This makes them develop poisonous stings with which they attack all and sundry. Finally, they either emigrate again or mutate into *Whiningus Leanandhungryfacus*.

27. *Nonresidentus Megalomaniacus* : The members of this species typically have spent a long time in better endowed habitats before return and have been successful foragers there, acquiring an impressive plumage in the process. They expect this to fetch them a position of power on return. This does happen to some, but never to their satisfaction. They then develop lethally poisonous stings with which they attack all detractors. The more successful ones mutate into *Primmadonnae Fundsenhonourdisbursae*. The relatively more benign ones mutate into *Senilae Almosttherebutnotquiteus*.

We are currently in the process of cataloging the various subspecies and a detailed study of their characteristics, including their mating habits. This will be presented in a forthcoming monograph. ●



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Memory of the Meadows on the Everest of Science

Rajendra Bhandari

It is but deceptive to think that the peak of science has arrived and believe that we are already on the top of the Everest of Science. Since there is no summit of human excellence, there will always be higher skies to soar over. The great structure of knowledge we sit upon is the gift of the previous generations to the present one.

The perceived Everest of science looks like a wonderland littered with facts stranger than fiction. Furby, a toy that talks and responds to humans, contains more electronics than the lunar module that landed on the surface of the moon! The latest in semi-conductor nanotechnology are the world's smallest bridge and the tiniest thermometer. Nanotechnology deals with dimensions of a millionth of millimeter- a dimension in which electrons show their dual nature as particles and waves at the same time. The smallest bridge, constructed by the scientists in Bochum, spans over a distance of no more than 50 neighboring atoms, causing basic macroscopic laws of physics to rupture. The tiniest of the thermometers produced is a thousandth of the diameter of a human hair and measures to a precision of 0.001 degree.

As we climb higher and higher, the excitement of discovering the unknown leaves us virtually without any time to recall the wonderful memories of meadows where the

climb really began and when the first words in science were spoken. Those were also the extra-ordinary times, full of romance with science.

The most bizarre example of romancing science is that of Archimedes (c.287-212BC), who was seen running stark naked down the main street of a Sicilian town shouting, "Eureka! Eureka!", upon discovering the law of floatation. He is also known for his statement, "Give me a lever and a place on which to rest it, and I will move the world". Aristotle's (384-322BC) romance with mind came at a time when nothing much was known about matter. Cicero called him a man of eloquence, universal knowledge and fecundity of thought. His personal defect of deformed countenance did not come in the way of his legendary achievements. John Flamsteed (1646-1719), the father of modern astronomy, had great fun with his mind despite rheumatic affliction of the joints, poverty and pin pricks from contemporaries. Newton (1642-1727) discovered the laws of gravitation while sojourning in Woolsthorpe, during the great plague. At the age of 24, he had discovered the binomial theorem and the principles of integral calculus. Then he invented a reflecting telescope. His presence among the peers of the day turned so powerful that he was elected president of the Royal Society annually for the last quarter century of his life.



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And while looking at those glorious days, one could hardly forget Charles Darwin (1809-1882) who stormed the world by unfolding “Origin of Species” and gave a new insight in to creation. So intense was his involvement with the mind that the lifelong dyspeptic trouble made no difference. The most shining example in the later years is of Srinivasa Ramanujan, the man who knew infinity, as his biographer Robert Kanigel called him. Despite severely ill health and suffering due to tuberculosis, and without formal higher education, he could carve a niche in the firmament of science in his very short life span of 33years. Hardy, while pressing Ramanujan’s election to the Royal Society, said that he might not make it to the next election and the Royal Society would

Today, the atmosphere in the scientific world is charged with secrecy and fouled by commerce. The race is not so much for adding to the great structure of knowledge in the purest of its forms but to look at science as a business.



then have to live forever with its failure to honor him.

Chandra Shekhar, the Nobel laureate, in his famous book “Beauty & Motivations in Science” makes the point very effectively by considering the supreme example of

Newton. When some twenty years later, he undertook to write out afresh his derivations of Kepler's first law, for the benefit of Halley, he did not stop with his derivation. He was neither satisfied with his lecture *De Motu Corporum in gyrum* that he gave subsequently. He had to write the entire *principia*: and he wrote it with a speed and coherence unparalleled in the intellectual history of man. Kepler could have been content with giving a simple account of his

We had big names in science that thought big and did big. Today we have big factories manufacturing science to a given set of specifications.



law of planetary motion. He chose, instead, to write "*Astronomia Nova*". Galileo could have stopped with the announcements of his great discoveries; but he, apparently, felt compelled to write his dialogues concerning the two new sciences. And the tradition of Kepler, Galileo, and Newton was passed on to Laplace and Lagrange.

The structure of knowledge was erected on the foundation of curiosity and scientific adventurism. There was no scramble for copyrights, and patents were hardly of concern. Marie Curie once said, "We took no copyright, and published without reserve all the results of our research, as well as the exact process of the preparation of radium. In addition, we gave to those interested whatever information they asked of us. This was of great benefit to the radium industry, which could thus develop in full freedom, first in France, then in foreign countries". There are exceptional cases such as that of Thomas Alva Edison (1847-1931) who netted countless patents. The first patent was taken by him in 1869 when he was just

22 years of age and by the time he was 63 years, the tally was 1300. In a single four year period he had bagged as many as 300 patents. The motivation was problem solving rather than commerce.

A few men of science hold such views even in the recent times. Professor P.J. Crutzen, winner of 1995 Nobel Prize for Chemistry once said, "I study a problem because I find it interesting. The fact that my work is of importance to society is just a happy coincidence. But it is not what makes me choose it in the first place."

Rutherford, in his Nobel Prize address in 1925, stated that nuclear transformations were of extra ordinary scientific interest but he could not envisage any possibility of their ever being commercially harnessed for production of energy. In September 1933, in his address to the British Association, he reiterated that anyone who looks upon nuclear transformations as a source of power is talking moon shine.

Once Faraday was asked about what use his gold leaf electro-scope was. He replied by asking, "What use is a newly born child?" There are numerous other examples of revolutionary results born of obscure pieces of research. In 1928, Richardson won the Nobel Prize for his work in thermionic emissions. His work eventually gave birth to cathode ray tube technology. In 1970, Louis Neel's work in ferro-magnetism fathered direct improvements in computer memory storage units. In 1991, Pierre-Gilles de Gennes' liquid crystal research led to ultra thin flat screen displays.

Research, in the past, flourished in the ambience of utmost freedom and free flow of information. That is why Germany, before the Second World War, bagged 10 out of 45 Nobel Prizes for physics and 16 out of 44 for chemistry. And when the freedom got

eroded due to the war, the decline followed like a shadow.

Today, the atmosphere in the scientific world is charged with secrecy and fouled by commerce. The race is not so much for adding to the great structure of knowledge in the purest of its forms but to look at science as a business. The so-called blue-sky research has gone out of the laboratories and into political speeches. Creativity of a grass-root innovator is not enough for him to get entry into the schools of higher learning. When science danced on the meadows, no formal education was necessary for one to sparkle. James Brindley of Staffordshire was a poor boy working at the mill wheels when he blossomed in 1733 as a practical innovator and gave England the first water wheel based multipurpose machine. Neither of James Watt, Benjamin Franklin, Wedgwood nor Wilkinson were graduate engineers, only practical innovators. Renaissance men like Da Vinci, Alberti, Dyrer and Cellini were practical wizards. Da Vinci and Michael Angelo were builders of military fortifications and designer of weapons with a touch of class.

We had big names in science that thought big and did big. Today we have big factories manufacturing science to a given set of specifications. Very often such acts of small men playing with big science are motivated by short-term personal or commercial gains. When the modern history of science is written, it may be wise to recall Sir Winston Churchill who once said, "The muse of history must not be fastidious. She must see everything, touch everything, and, if possible, smell everything. She need not be afraid that those intimate details will rob her of romance and hero-worship. Recorded trifles and tittle-tattle may- and indeed ought to wipe out small people. They can have no permanent effect upon those who held with

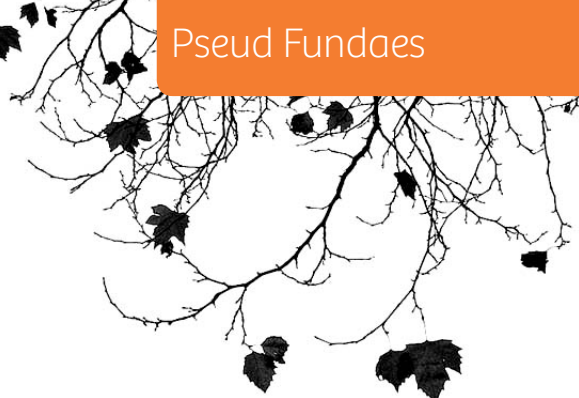
honor the foremost stations in the greatest of storms..

The memories of the meadows of science stir our imagination to say- Those were the days! ●



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R. K. Bhandari is a distinguished alumnus of IIT Bombay, a Fellow of Indian National Academy of Engineering and a Fellow of Institutional of Civil Engineers, London, U.K. He became the first Indian to receive the prestigious 2012 Varne's Medal for excellence in Landslide Research at the UNESCO Headquarters in Paris.



Winter Secrets

Hiro Chhatpar

The winter holds its secrets
Beneath the drifting snow -
And the silence of the season
Hides beneath the glow.

Across the fields and valleys,
Atop each sloping hill,
The muffled sounds of winter
Remain forever still.

The sky is low and graying,
And all the willows weep -
The winter keeps its secrets
Wherever snow is deep.



Mai Mai Chai

Grumblebee

Once upon a time.....wait a minute! Let's start with a disclaimer. This is a fairy tale and all fairy tales start with "Once upon a time". Not quite actually. Some fairy tales start with "Darling! I'll be home late tonight. Got lots of work at the office". Coming back to our fairy tale, Once upon a time, there was an institute named Mai Mai Chai or MMC in short. Mai Mai Chai was Hindi for I I Tea which was probably the institute's name before a mass Hindi-isation movement swept the nation. Mai Mai Chai was an appropriate name because there was some good chai on offer in some of its canteens, notably the ChemE, HSS, and Kresit canteens.

The institute was a nice green jungle when it first started and it is a nice grey concrete jungle now. But throughout the years, its two primary species viz. the bovine kind and the homo-sapien kind co-existed in a spirit of good camaraderie. Some of the homo-sapiens exhibited characteristics that could be described as canine. Some others were feline and a few of them also spoke bovine in classrooms, but everything was forgotten when one was savouring some tea that would put Darjeeling to shame.

The institute was nestled betwixt two picturesque lakes. There was the Hawaii lake on its west and the Bihar lake on its north eastern fringe. Bihar lake was called as such because the stables abutting the lake were H3 and

H4. Inmates of these stables indulged in a daily discourse from their wings and terraces and the language used in this exchange reminded one of the notorious badlands in Bihar. No one is sure why Hawaii lake was called what it was. But the entrance to MMC-pain gate as it was called was very Polynesian in décor. Lot of bamboo, tent cloth and distinctively tentative and make-shift in demeanor. Hawaiian as the pain gate was, the security manning this important edifice were hand-picked guards who were used to manning impregnable fortresses during medieval times.

No matter who you were, what you wore, what you drove in... they would stop you and not allow you to enter the bovine campus until you flashed something called a life membership card. Possibly, these guys were in cahoots with the marketing team of Life magazine. C'mon yaar! If your urge to drink chai is so strong, can you not cough up Rs. 2000 to get a life membership and make your way to the nearest canteen? Don't you remember how tough it is to get into MMC? Why do you want it easy now? These khakhi clad guys also ask you if you have a laptop with you and if you say "yes", they will scribble something and hand out a pink slip to you. After all, you have to wipe your laptop with something if you spill tea on it, right?

Some of the guys who tried to enter the

pearly pain gate would point to their pocket and say, "I have been called here by the guys in the pain building because I am going to donate them a million dollars. It will be used to build a new pain gate and some new tea shops" Arre yaar! A million dollars will get you entry into the pain building. But you first have to enter pain gate, no? So why don't you pay 2000 rupees first and then flash your million dollars before guys who wear blazers and ties? Poorer by a million dollars and two thousand rupees, Mr. ex-millionaire trudges his way to the nearest canteen to invigorate himself with a tea that will rob him of another 2 rupees and then make his way to the pest house to drop his bags, freshen up before meeting the tie wearers and his pall bearers in the pain building.

There are 2 pest houses in MMC. Full Vihar and None Vihar. As you would have guessed, the former is always full and in the latter, number of available rooms are none. One has to stand in a long queue called the "waitlisted queue". Everyone is on a waitlist forever. "I booked the room last year and I am going to donate 1 million dollars in the pain building" is the common refrain that one hears from irate queue members. Response is as inert as the Argon in Chem labs. "You people give money to build pest houses, pain gate, and tea canteens. But some of our people on the campus have relatives who have come to boat in Hawaii and swim in Bihar and they have a family, neighbors' and neighbor's cousins who are here on a holiday. You give your million dollars in the pain building and come back and check your wait list number when you are donating your next million. Your current wait list number is SORRY. NO ROOM." "But that has been my number since the last 3-4 million. One thing I must say. You guys are consistent. No wonder it's called a pest house." What else can one say?

There are a lot of smiles, handshakes and photo shoots that await you in the pain building when you have a bag bursting at the seams with your hard earned millions. Hopefully, you are a nice sweet chap who'll give the millions and dash for the nearest tea joint. But if you're the painful type who asks for a receipt, you'll be told to check next year from the staff. Have you ever heard of a tie-wearer issuing receipts? Staff, stiff upper lip and all, are an imaginative lot who greet you with autoresponder messages. "I am unavailable now. For urgent matters, contact the next stiff upper lip." Cute set who excel in playing musical chairs. And why are they unavailable? Oh God! How can you be so dumb? They're all out drinking tea, didn't you know? How did you make your millions when you do not have elementary common sense?

There are sometimes, a breed of donors—canine ones at that—who go one step further. They want a report for their donations. Are you kidding? They actually have the gumption to ask for reports? Didn't they get enough report cards every semester when they were here? Do they want some more D-grades that will degrade them forever? Do these blokes think we have nothing else to do? Who will knit our sweaters and drink tea if we waste time writing reports? Hard-to-beat logic honed by decades of tea-drinking by staff inert as helium and out-of-office like their responder.

Okay, okay! As we said earlier, this is a fairy tale that started with "once upon a time". Fairy tale ceases when one awakes from his dream. Now, when will MMC wake up and drive away pain and pests?

Tail end of the fairy. ●

Our Greenscapes

As IIT Bombay continues on its growth and expansion path one of the enduring challenges it will face is the issue of balancing out sustainability by maintaining its green spaces and the oasis of tranquility it was once noted to be.

provide food for thought and we hope that it will engage our readers (some of whom we hope are policy makers) and invite response.

Ezbee

It means that policy makers need to put conscious value in nurturing the green spaces on campus, to recognize that the natural ecosystem and the landscapes of your campus has a direct co relation to the Institutional ethos that you seek to build and the image of the Institute that you wish to portray to the world at large. This subsection has two articles that look into this subject one from the trajectory of the transportation system within IIT Bombay and its long range impact on the campus ecology. It is a dispassionate “look in” from Sudhir Badami a passionate practioner of the craft and one who is an alumnus of the Institute.

The other is a piece of satirical whimsy from someone from the “inside”. Edmund Carvalho is a Ph. D student who has been here long enough to witness the “spaces” lost to constructions to pose some gentle but crucial questions of the long term price that IIT Bombay will play in its inexorable march towards development. Both articles raise critical questions related to development and sustainability contextualised in the Institute level. There are no easy answers but it does



Towards Sustainable Mindset

Sudhir Badami

Staying at IITB Guest House for a very short time was enough for me to write this piece. I saw too many motorised vehicles plying on the IITB campus roads. Footpath of widths less than what two people can walk on comfortably, lamp posts encroaching every now and then, and people walking on the roads followed by honking high speed cars or noisy autorickshaws. The environment surely does not prepare people to even try and understand prevalent urban situations and find solutions to them.

* * *

In the 1980's Maruti Suzuki began manufacturing Maruti-800, Maruti-Omni and Maruti Omni XL. This was a dream come true for a young man who by then had met with fatality in an air crash. Relative to the Amby and the Padmini, Maruti was a high accelerator, high mileage and not so low in cost. But surely it was high on accidents. But many bought it because its production was about a lakh of cars a year as compared to low production rates of the Amby and the Padmini and hence the long waiting list for them, though Maruti too had some waiting time before delivery. From the productivity perspective, Maruti production was a confidence builder for a Nation on the move. It was loudly touted that "cars are no longer a luxury, they are a necessity." As a youngster who began fiddling with cars from age 16

and driving from the minimum prescribed age of 18, I too was one of the supporters of the statement!

In the LPG era of the 1990's – that is of Liberalisation, Privatisation and Globalisation – many international manufacturers were welcomed in India to manufacture motor cars and motorised two wheelers and we came to see cars of many colours and shades, and efficiencies and costs, and attractive shapes on the drab roads, which were till then filled with the black or white or occasionally sky blue Ambys and Padminis. Latest engineering technologies in all respects came to India.

The long waiting lists for motorcars no longer curtailed the aspirations to own a motor car or a motorised two wheeler. The aspiration was not its utility but more the prestige of owning a motorised vehicle and that of making the best choice from the market. Car loans were and are available on more attractive terms than for businesses and manufacturing. That is because it 'sustained' an industry and its ancillary industries that employed tens of thousands of people. Point to note is that the numbers were not tens of lakhs as desired or visualised by the planners.

IIT Faculty incomes improved with higher pays and external consultancy works and so also larger number students began coming from the affluent sections of the society.

A natural corollary was that on-campus population of motorised personal cars and two wheelers increased significantly. With growing number of seminars and symposia of different departments, schools, and centres, and student and alumni events such as Mood-Indigo, Tech-fest, alumni day etc. visitors from outside the campus also brought in their vehicles and autorickshaws and taxis.

Thus, a campus that in the 70's comprised of

A campus that in the 70's comprised of barely 20% cycling students and about 15% cycling faculty and had just about four motor cars and perhaps half a dozen scooters/ motorbikes, and BEST plying route number 392 to Vikhroli station every 24 minutes, is today a township where silence zone is only on paper and sign boards.



barely 20% cycling students and about 15% cycling faculty and had just about four motor cars and perhaps half a dozen scooters/ motorbikes, and BEST plying route number 392 to Vikhroli station every 24 minutes, is today a township where silence zone is only on paper and sign boards.

Sale of motorised personal vehicles in large numbers not only adds to the GDP of the country's economy but use of it also adds to the same by way of consumption of fuel in ever growing quantities. Higher GDP is attractive to foreign investors, which is perceived as a necessity for alleviating the 'perpetual' poverty in the country.



Courtesy: Edmund Carvalho, IIT Bombay

To bring in productivity, automation becomes a necessity and automation bringing in products of such high quality that we have practically stopped seeing a car on the road with a breakdown. This has resulted in a significant drop in maintenance requirements as well as compared to the past.

The moot point is what have we achieved? The way I see it is we have achieved growing GDP, tens of thousands people in the motor car and ancillary industries getting employed at high salaried jobs, more foreign investments with rider clauses, a nation on the move... a nation that could be stated to be merely five percent of the nation's population.

So what have we achieved besides these that we can proudly say that our nation is really on the move? Sad to say that we have done

almost everything that goes contrary to what an intelligent and sensitive national leadership should have done. We are a nation with a leadership that accepts the fact that nearly 1,40,000 persons get killed on roads annually (and the figure is growing) and does precious little to make the roads safer. Our leadership accepts the fact that nearly 4,000 persons get killed in Mumbai suburban rail systems primarily because of severe under capacity of public transportation, whether railways

Most of us, as students, walked to the academic sections and the walks were interesting because of the ten minutes of conversations with friends met randomly on the way. Does the IIT campus provide such environment today? I think not. Is it good or bad? I would say that it is good for individual-focused development which allows personal career growth but sadly bad because it blinkers one to see the world only from the perspective of making one's own life comfortable.



or road public transport. An acceptable peak hour crowd density of 5-6 persons per square meter is nowhere in sight with nearly 16 persons per square meters in Mumbai rail-way system and the leadership does not want to know how to address the problem. We are a nation where some privileged sections feel that the time of the affluent is more valuable than those of less affluent and so also are their lives. These people do not subscribe to

what the Delhi High Court said recently in a Public Interest Litigation in connection with Delhi's Bus Rapid Transit System – “A developed country is one where the rich travel by public transport”.

Although at the level of Constitutional details, the National Urban Transport Policy (NUTP) is somewhat flawed, but as a guideline, the NUTP does address the need of making commute safe, comfortable, and quick for all and while doing so, give priority to walking, cycling, and road public transport and the Mass Rapid Transit system rather than personal transport.

Why have I written all this for a magazine of the IITB Alumni? That is because we IIT alumni hold vital positions in society even as early as when we enter the job market. We, by and large, provide leadership wherever we are and can influence directions of development even in our respective work places. We also get influenced by the relative narrowness of engineering attitudes and forget that our background is to provide the societal needs using engineering skills. It is this perspective that I thought my fellow alumni could look at.

Most of us, as students, walked to the academic sections and the walks were interesting because of the ten minutes of conversations with friends met randomly on the way. The fertile minds had time to think and talk and allow seeds to germinate ideas. Does the IIT campus provide such environment today? I think not. Is it good or bad? I would say that it is good for individual-focused development which allows personal career growth but sadly bad because it blinkers one to see the world only from the perspective of making one's own life comfortable. It does not let you think of how to tackle problems that would benefit the society at large.

Besides creating skilled people in their respec-

tive chosen fields, the campus must provide opportunity to enable these materials of leadership to view little beyond engineering for the betterment of society. I strongly believe that this attitude germinates from simple lifestyles and common commutes on foot or on a bicycle.

You do it on the campus and you take with you healthy attitudes. Is this possible? Well, let us begin by thinking and debating about it. ●



Sudhir Badami
B.Tech '71 Civil
Engg

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Life @ room no # 203

Suyansh Jain

The wall had words scrubbed
Posters covered the dark
Rock-bands, mountains, celebrities
And sometime Indian gods

A table always dusty
Books untouched for long
Linux / windows on the Intel PC
As we wished to install

Videos, movies and games
Unusual genre of songs
Singing verses after verses
Missing her all night long

Voices of laughter
Serious discussion on math
Never ending arguments
To be continued over yahoo chat

But with the exams overhead
Our bond became stronger
Fearful faces asking each other
Can you stay little longer?

The room had a green view
With friends as neighbour
It knew us inside out
It knew us better

We lived a dream
An imaginary world of our own
A garden enriched with friendship
Trees of treasure we've grown

The bonds that we have made
And the achievements that we laid
Might not last long,
But these incredible memories
Will always stay like a beautiful song



Suyash Jain
B.Tech '08
Mechanical Engg

Suyash Jain completed his B.Tech in Mechanical Engineering from IIT-Bombay in 2008. Since then he has been working as a Financial Analyst in Mumbai. During spare time (which is occasional) he enjoys travelling, cycling, writing, playing guitar and singing. The poem captures the memories of his stay at Room no. 203, Hostel 8, IIT-Bombay.

You can email him at suyashiitb@gmail.com or visit his blog <http://recreated-memories.blogspot.com>

Anna Dreams of Space and Beyond

Edmund Carvalho

Anna looked to the skies in search of planets and exclaimed with some loud thinking, “It has to be a manned mission into the unknown. Shh! It’s a secret that IIT has been holding for a long time.” In his mindless chatter Anna said, “There are trees and buildings and people and animals.

But shhhhh... it’s a secret.”

“What’s a secret? Anna!” Buddu asked in dazed stupor.

Buddu was the definition of a dumb freshie, who just fresh out of JEE was ardently attending fourthie Anna’s fundae session atop the Main Building. Anna, had wandered from Hyderabad into the Aerospace department 4 years ago in the hope that one day he would make it to ISRO. He was famous for this vast expanse of information about the institute, and freshies and poltu wannabies would flock to him for fundae.

On this fundae night he said cryptically, “The thought, the possibility of intergalactic travel.”

“But why so, Anna!” asked Buddu curiously. “Have you noticed the space crunch at Hostel 11, whose inmates now are shifted to the QIP quarters in compensation, a dial in Tum-tum in tow to prevent being baited by Leopards?” Buddu was baffled. “And why are the girls getting special treatment?” he retorted in spite.

Why an umbrella for a building, Anna?” Buddu questioned.

Anna sarcastically added “To save the birds from the monsoons, so that no bird is left in the horrid monsoons that hits Mumbai. And lots more dry flying space is left below the umbrella



“Calm down Buddu” said Anna. Anna went on to explain further, “With the construction of hostels 12 and 13 the institute ventured into vertical expansion as opposed to horizontal. The two lecture theatre complexes and the VMCC, the staff housing and hostels 15 and 16 are successors of this onslaught. I feel proud to walk along these structures and know that the institute is walking towards a brighter future.”

“Buddu,” Anna reassured, “the alumni have put lots of monies into this initiative. Conferences which were held in various locations around the institutes, now can call VMCC their home. Bus loads of frangs can make their way just to VMCC and out of the institute without even a glance at the old ramshackle fluid mech labs, and the old infinity corridor which is in a state of renova-



tion for the last 6 months. The only hope is that the rain does not play spoil-sport at by making an early entry, or more so a scheduled entry.” Anna said playfully.

“But space travel? Anna! Surely there is no reason for it.”

“Buddu,” Anna continued as Buddu was confused even further, “Hostel 12 was built and handed over in a record 9 months. Like a baby it was delivered into the hands of the institute to house around 600 students, the ships, so to say, moored off Lake Powai. VMCC was designed too, with an umbrella.”

“Why an umbrella for a building, Anna?” Buddu questioned.

Anna sarcastically added “To save the birds-from the monsoons, so that no bird is left in the horrid monsoons that hits Mumbai. And lots more dry flying space is left below the umbrella which is visible from every high rise of the institute. Finally, with a hope that the frangs don’t mind a few blessings from

above as they pass below.”

“ Buddu, another building is ready. The BSBE building for the folks of Bio. Although having made ample space for the birds there, the institute forgot that the bipeds of the institute would not allow birds.” Laughingly Anna said, “Next time the designers will need a paradigm shift in biometrics technology to allow birds access, notwithstanding other technologies that may make their foray then. I am sure the day is not far when birds will fight to death to enter the facility. There are two pigeons already battling for their rightful place as we speak. I do wish the institute had given more thought to the migrant animal population that is the soul of the institute.”

Buddu suddenly began connecting the dots. “Oh! now I understanding the need for the rocket, Anna! and space travel.” Buddu jumped up and down with excitement as he realized this. “ Now I understand that we will need more space from space to build for the bipeds, so there is more space for the



birds and buffaloes and dogs here on Earth. I do agree that the birds and bulls/buffaloes need their space to graze wander and create work for the gardeners of IIT Bombay. Respect is also due to those souls in transition within the institute who make all the new spaces a possibility. I do wish the institute to be more reasonable and tightfisted in giving away spaces. Or surely we can design a space shuttle with an academic hatch.”

“Shhh!! That’s a secret, remember?” Anna reprimanded.

For “Education and Beyond” will then be the motto of IIT(Interspace Institute of Technology).”

The night went on and Anna and Buddu spoke endlessly of how they would fight for space and the quest for space. Guess they forgot that there were lectures in the morning and reaching the lecture theatre would be hurdle race, with no space in the tum tums too. ●



Edmund Carvalho
M.Tech. Bio
Engg, '08

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Is it in? Was I for that? And with the to of a?



Jumblebee

Thirteen words. Just thirteen words in this foxy title. Starts straight and ends cryptic. To tell you that TUT TUTthis edition of TUT – totally useless trivia – made Jumblebee count the number of occurrences of each word in the last (i.e. 5th) issue of *Fundamentals*. After sweating, counting, ticking and adding 67,987 words, Jumblebee discovered to his delight and to your shock that we, the people of India (English-speaking ones), are a verbose lot whose tongues' utterances speak the abovementioned 13 words in 25% of our vocabulary. In other words (Oh my word! Do we have a pun here?), if you've read the title, then you've read 25% of *Fundamentals*. If you've read the title 5 times, you've read 25% of all the issues of *Fundamentals*. Because that's exactly how the words play out in *Fundamentals*. See the table below to show you what the English language and your usage of it is all about. We kind of knew that "the" was the most commonly used word in English, though its meaning and its equivalent are unknown in most other languages of the world. So it is with "a" and "an". Articles! That's what some Wren and some Martin called them. When we asked for articles for *Fundamentals*, we did not know that you would send some 14,141 "the"s and 6,193 "a"s and say that we have sent you 20,334 articles. Articulate, we all are. Article writers, most of us are not.

This set us thinking. After all, the 5th issue of

Fundamentals was centred around environment and ecology. So maybe the writers were trying to conserve on valuable resources like English words and went overboard with their stinginess and ended up using just 13 words to do 25% of their talking. How many more words would it take to constitute 50%? Surely more than 13. How many more? This threw up another surprise. We counted another 250 words and reached just about 42%. So, after 13 words, we get versatile and flowery with our language. Less surprising is the fact that "educational" occurs 5 times while "alcohol" is mentioned 9 times. With so many of our writers being from H4, what else do you expect?

Ok! So this issue sees the stingy word user in us. What about the other 4 issues? Surely, some other words than these 13 get spoken more often and surely, we speak many more words to reach 25% of our vocabulary. Our writers are an imaginative lot, aren't they? Our quest and the subsequent results freaked us out. Bizzare! Surreal! Uncanny! See this table which is bound to floor you. See how "the" varies from 5.16% to 5.47% over 5 issues. And "a" from 2.22% to 2.43%. Most of the 13 words have a variation of just around 0.2%. The word "I" varies most compared to other words. It peaks at 1.24% in the 4th issue and ebbs at 0.78% in the 3rd issue. This is surprising again, considering that the 3rd issue's theme was on entrepreneurship with a focus on many first person accounts. Our entrepreneurs are successful, but a humble lot indeed.

So how is it that over 120 contributors, writing on subjects ranging from economics to education to trivia to humour to mountaineering to poetry to mess-worker interview to politics to poll surveys to just-about-everything-under-the sun, manage to choose the same favourite 13 words in almost the same percentage to the closest decimal point, issue

	Issue 1		Issue 2		Issue 3		Issue 4		Issue 5	
Total words →	81944		36335		52430		26398		67987	
Words ↓	Count	%	Count	%	Count	%	Count	%	Count	%
the	4231	5.16%	1984	5.46%	2823	5.38%	1385	5.25%	3718	5.47%
and	2427	2.96%	1087	2.99%	1661	3.17%	898	3.40%	2181	3.21%
of	2274	2.78%	990	2.72%	1462	2.79%	705	2.67%	2035	2.99%
to	2202	2.69%	1045	2.88%	1508	2.88%	725	2.75%	1808	2.66%
a	1927	2.35%	882	2.43%	1270	2.42%	605	2.29%	1509	2.22%
in	1748	2.13%	767	2.11%	1024	1.95%	574	2.17%	1355	1.99%
that	877	1.07%	349	0.96%	604	1.15%	320	1.21%	816	1.20%
is	932	1.14%	389	1.07%	541	1.03%	262	0.99%	737	1.08%
I	984	1.20%	368	1.01%	407	0.78%	327	1.24%	667	0.98%
was	758	0.93%	413	1.14%	505	0.96%	245	0.93%	632	0.93%
for	691	0.84%	346	0.95%	557	1.06%	253	0.96%	603	0.89%
it	640	0.78%	293	0.81%	363	0.69%	213	0.81%	598	0.88%
with	602	0.73%	277	0.76%	413	0.79%	228	0.86%	522	0.77%
Total	20293	24.76%	9190	25.29%	13138	25.06%	6740	25.53%	17181	25.27%

after issue after issue after issue after issue? Simple coincidence? Very improbable as the pundits from Maths department will tell you. Anomaly of the English language which is perhaps not as versatile as one would think? Probably. Or is it the case that our writers are a homogeneous lot? All wise men who think and write alike? More probable. But to put this last hypothesis to the test, we picked up 3 pieces at random and found that columnist Ali Baba is stingy with the word “the” that notches up a score of just 4.51% compared to columnist Ajit Ranade who needs “the” at 7.03% to make his point. A case of inflationary trend in this economist columnist’s pen? Also noteworthy is the fact that Ali Baba needs just 9 words and Ajit Ranade needs just 10 words, not 13, to convey 25% of their respective points. Did someone not say that brevity is the soul of wit? Ranade trends with “the”, “to”, “of”, “a”, “in”, “and”,

“was”, “for”, “with”, “it”. Alibaba drops “was”, “for”, “with”, “it” and brings in “is”, “that”, “I”.

So, at an individual level, writers vary a bit and use some words more and less than other writers do. But somehow, they all average out in the issue taken as a whole. This then begs the question. What is the word count of words in this piece up to the last paragraph? We find that “the” continues its status as the king of the English vocabulary, albeit at a reduced 4.54%. But the word “word” steps in as a runner-up.

To steal a phrase from our title, we ask again, “Is it in?” Did we just hear you shrug and say, “It was in and now it is out of our head. What’s in our mind is to find Jumblebee and assault him for contaminating our mind with yet another edition of ATUT – absolutely and totally useless trivia.” ●

Catch a Gold Fish

Arnapurna Rath

During the last semester, I had a heady happening encounter with the *freshies* (1st Years) in “another place” at “another time”. As I observed their activities closely, every little act of theirs took me back to my own ‘fresh-woman’ year at IIT Bombay.

Let me recount a story from the many episodes of my life during those days of struggle while I was searching for myself (the search is still ‘on’). The story is a part of a memory of my second semester as a hostelite in H-11 (known as ‘Athena’ now). I was going through the rigours of coursework and was trying my hand at multitasking for the first time. My hostel room was the only haven for me, designed and built in a way that whoever visited me wanted to stay back in H-11, Room-151.

One night, having returned late from the lab after completing my submission for a course assignment, I fell asleep — exhausted, lost in dreams. My mornings had always begun late — very late even as per the standards of IST. Around 8:30am, I heard a knock at my door, but did not bother to open and see who was calling. Thought one of my friends must have knocked for breakfast, shouted in sleep, “yaar tum log jao, main baad main kha loongi kuchh KRESIT pe ... sone do yaar!” (You all go ahead; I will eat something later at KRESIT ... let me sleep!)

After about half an hour, I got a call on my

“You see! It might happen that when I come back from class, the boys might have roasted the fish in the backyard and eaten them up with rice during lunch. See it’s just for a month. They are really well-behaved fish.”



cell-phone. With half-open lids, I checked my cell to see that the call was from a landline phone. I picked it up immediately, thinking that possibly someone from the department might be calling since it was end-semester time.

The voice was of a male, somewhat unfamiliar to me because I was not used to too many friends then on campus. He was also slightly clumsy, but said, “Hi! Anne? Did I disturb you? Remember me? We are doing the course on creativity together.” I immediately thought, Oh my! Class notes! No way! Then he said, “I knocked this morning on your door. I had come with A__ (my hostel mate). I wanted to meet you urgently. I am calling from Hostel-8 booth. Could you please open your door?” I was afraid. Questions like Why? What for? Why me? kept cropping up. At the same time, I could not say ‘no’. It appeared as if he was hold-



ing something heavy that was weighing him down. I sounded brave, “Yeah, sure, why not come over ...”

In the next five minutes he was in front of my door. I was right that something was weighing him down. I was surprised to see a large bowl of water and two *goldfish* happily swimming, oblivious to the world. My course-mate was grinning sheepishly, with pleading eyes.

He just walked inside my room with the glass bowl in hand and kept it on my study chair. I could not understand what was happening! This was my first interaction with this person. Even before I could ask anything he said, “See I need a favor from you. Your hostel-mate is getting married to my wing-mate. These goldfish were meant to be a wedding gift for them as they shift from hostel to Tulsi quarters. However, they are going away on honeymoon for a month. Please handle them for a month; I am really

requesting you to do it because I don’t know anyone in this hostel. I will teach you how to take care of them.”

I was flabbergasted! I knew I was strange, a counselor for friends, a happy-go-lucky girl, not giving much thought to life and people, but was never thinking of myself in the role of a ‘caretaker’ of other people’s wedding gifts. I asked this person “But why don’t you keep the goldfish in your hostel room?” He replied, “You see! It might happen that when I come back from class, the boys might have roasted the fish in the backyard and eaten them up with rice during lunch. See it’s just for a month. They are really well-behaved fish.”

The hostel-mate who accompanied him (I came to know from our conversation that she was the one who had got married recently, and the fishbowl was her wedding gift) also looked with pleading eyes. Finally I relented. They quickly handed me a huge

packet of fish food and gave me a thorough briefing on handling the goldfish, changing their water once in a while, feeding them only four-five nibbles, and not exposing them to too many place changes. I heard through the tutorial, bid them a 'bye', and said a 'happy honeymoon' to a perfect stranger who had just handed me over his responsibility.

I was left alone with my new uninvited guests. I closed the door of my room, looked at the goldfish, they looked back at me, immediately turned about, wagged the famous golden tail, as if teasing me — and 'moved on'! I was surprised — how dare they stay in my room and ignore me! I really did not know what to do with them. I felt that an unnecessary burden has been thrust upon me during the peak-semester when I should be studying and writing assignments.

Until, nightfall! I was sitting and writing something on my computer, absent-mindedly looked around and saw the two fish. In the darkness of my room and in the lamplight, I saw them glitter and shine! They were just the most beautiful things that I had come across in my life! I left my work, went near the fishbowl, and kept staring at the two fish. They were playing around; hitting the glass bowl with their tail. Watching the bubbles from their breath was a delight! Then I just playfully placed my fingers on the surface of the bowl. Lo!! They seemed to love it, animated, funny, fast movements through the bowl!! I was giggling, and it seemed they enjoyed the feel of my giggle!

We had now become friends! I would finish my work in the department and run back to the hostel to meet my new friends. I played with the fish for hours, talked to them, fed them fish food, and then fell asleep watching them. I kept observing these fish to see if they sleep at night — but they always seemed to be shimmering and happy with their mouth

constantly doing 'pak-pak'. We shared a deep connection — a language which only we understood. If I came in a bad mood, the fish would look quietly for a while and then circle round-round fast — until I laughed.

The month was coming to an end. About four days were left for the couple to come back and claim their gift. I got a call one evening from this friend thanking me profusely for taking care of his friend's

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wedding gift. I smiled, but was also sad within that it was time to part with my friends. Next morning when I woke up and went straight (as had become my habit) to the fishbowl to play with my friends, I saw that one of the fish was floating with its back up on the surface of the water. I tapped the bowl thinking that it was asleep — and gave a low shriek when I discovered that the fish was dead. It seemed as if something snapped inside me, a feeling of losing a child perhaps.

I frantically called up the person who had given me the fish and told him all that had happened. He calmed me down saying, "Cool yaar! It wasn't your fault! Fish are delicate things! It's okay, they do die sometimes." Internally, he was as sad as me perhaps. He went again to Crawford Market (South Bombay, one hour by local train from the campus), bought a single goldfish, came back, and gave it to me. I took care not to get attached to the fish this time.

The day finally came when I had to hand over the fishbowl to the people who actually owned it. The place had become empty and I was on my own again. After giving them back the bowl, my friend teased me, “*Begani shaadi mein abduallah diwana!*”

One day as I climbed down the stairs (my room was on the 2nd floor) to the store area below, I found the empty fishbowl. I ran to the room of this girl who was the actual owner of the bowl. I knocked at her door, and breathlessly asked her, “Hey! What happened to the fish? I am sorry. I just saw the empty bowl at the store area.” She replied, “Oh the fish! See we could not take care of them in the beginning of a new life, shifting and all. So, we took the fish to the academic building area. There is a nice fishpond there with a lot of goldfish, and we dropped them inside the pond. That is where they belong now.”

I have kept visiting the ‘Main Building’ fishpond with the hope of catching a glimpse of my fish. I have never been able to recognize them though — except a feeling that perhaps one of them would know me well.

Gyan: (a) *Never take care of other people’s wedding gifts as if they were your own.*
(b) *Life is also like a goldfish, handle it with care!* ●



Arnapura Rath
Ph.D. HSS ‘10

Arnapura Rath (PhD, Humanities and Social Sciences, 2010) is an “aspiring” academic and an avid blogger. She is working as Assistant Professor in Humanities at IIT Gandhinagar. Her PhD work received the “Best Thesis Award” during the Golden Jubilee Convocation of IIT Bombay, 2012. Her research interests are in contemporary South-Asian literature and literary-philosophical theories. Arnapura writes a blog “Iris” under the pseudonym Anne de Plume. She can be reached at anu.ecku@gmail.com or arnapura@iitgn.ac.in

NCC Sole Searching

Ravi Upadhye

When I joined IIT Bombay in 1962, the campus and its surroundings were depressingly dreary. Except for the weekly movies, there was no entertainment on the campus, and there was absolutely nothing outside the campus. The Y-point, as we used to call the spot just outside the Main Gate, had a few run-down shops, and nothing else. However, in the desert of logic, rationality and clear fundas that was IIT, a welcome relief was brought about by NCC, which became compulsory sometime between 1963 and 1965. It was a welcome oasis of irrationality, and fuzzy logic.

I still remember the day they gave us our uniforms (shirts, a pair of pants, boots and socks). I was standing in the shoe line. When my turn came, the Subedar handed me a pair. I looked at them, and said they were too small.

“I see. Have you tried them on?” he asked me.

“No sir, but they look too small”, replied.

“NCC shoes are not something you look at. You are supposed to wear them. If they are too small, we’ll give you larger ones. If they are too big, we’ll give you smaller ones, you must try them on first”, was his response.

So I took the pair he gave me, and tried the shoes on. As I had guessed, they were too small for me. So I went back, with a smug

Remember, this is NCC, and IIT rules don’t apply here. Only NCC rules are allowed here.



look of victory on my face. Little did I know that I was walking into a classic NCC trap.

“Sir, tried them on. They are too small”, said.

“I see! Did you try them on? Over our socks, or over your civilian socks?” asked the Subedar.

I said, “Over the civilian socks.”

“That would not do. Our boots must be worn with our socks. So go back, put on our socks, and then try on our boots. If they are too small, we’ll give you larger ones. If they are too big, we’ll give you smaller ones. You must first follow all the regulations”, I replied.

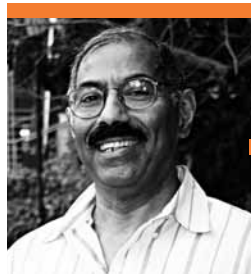
At this point, I tried to demonstrate my mastery of logic. “But sir, my socks are very thin, whereas the NCC socks are quite thick. So if the boots are too small with my socks, how can they fit with the thicker socks?”

“Look, I don’t have time for this nonsense. Remember, this is NCC, and IIT rules don’t apply here. Only NCC rules are allowed here”, he thundered, quite a bit annoyed at me at this point.

It was clear to me at this stage that his logic was at a higher level than mine. Besides, he was much bigger than me, and had an intimidating persona, so I went back, took off my thin socks, wore the thick NCC socks, and tried the shoes on. Of course they did not fit. So I went back, convinced that by this time the Subedar would recognize (and, perhaps, acknowledge!) his error. But it was clear that I still had a lot to learn about NCC.

When I approached the Subedar, he had a grin on his face.

“Now everything is alright”, he said. “See, when you follow regulations, it becomes simple and straightforward.” With a triumphant smile on his face, he handed me my new pair of boots. ●



Ravi Upadhye
B.Tech. Chem
Engg '67

Ravi Upadhye (ChE-67, PhD UC Berkeley -74) retired from the Lawrence Livermore National Laboratory in 2007 and joined the Berkeley faculty as an adjunct, where he teaches Process Design. Ravi is active in Toastmasters (DTM-2004) and acting (4 plays to his credit so far). He lives with his wife Aruna in Pleasanton, CA.

Dr. A.S.Mahajan

An Outstanding Teacher and Gentleman

S. Muralidharan

Today I met up with a man from my past. Ordinarily this would not be something to talk about or air in public, "past" being what it is; especially if it happens to cover the period from late teens to early twenties and away from home. But then that man is not ordinary.

He has taught thousands of students at IIT Bombay and mentored hundreds of Masters and dozens of PhD students in Physics. Dr. A. S. Mahajan (affectionately known as ASM) taught at IIT Bombay over four decades, from the Sixties through the Nineties, and retired in 1996. Thereafter he continues to teach and develop young minds, albeit in different settings. Whenever and wherever he travels, he makes it a point to trace his former students and meet up with them be they in the good old U. S. of A. or Hamara Bharat. He either does not remember our various transgressions as students or indulgently forgives them as rites of growing up. Knowing the man, it is surely the latter. The fact is, he was genuinely fond of his students and his affection had nothing with how good (or not, as was my case) one was in his classes. He still retains that fondness for his (ex) students.

If memory serves me right, his was my very first class at IIT Bombay. He was trying to bring us up to speed in vector calculus before plunging into the exotic world of Classical

Mechanics, a world populated by Lagrange and Hamilton and Transformations and Invariances. The magnitude of his task was monumental verging on the hopeless where some of us were concerned – our skills in vector calculus were non-existent at best. Nevertheless he undertook the task manfully and gave it his all. Despite the plentiful supply of provocations that we provided, I have never, ever, seen or heard him lose his cool in a class. That is something I cannot say about many of his peers whose chief pedagogic technique consisted principally of berating us for our shortcomings and reminding us of our inadequacies in contrast to their own mastery of the subject.

My mind does not remember things that happened a few weeks ago and constantly fails to associate names with faces, but can recall vivid pictures of his lectures. The contents of his lectures, though, evaporated a long time ago, the fault being entirely mine. He was by far the best teacher I ever had, bar one. The exception was one who came in halfway through my final year at school and rescued me from the mathematical hell-hole into which his predecessor had dropped me. ASM displayed many traits of great teachers – empathy, unflappability, quiet confidence, and love of their students. There was affection, yes, but no indulgence. If we did not submit our assignments or quizzes on



From left to right, Ramesh Subramaniam (C'71), Muralidharan (C'72), Dr.A.S. Mahajan, Mrs Mahajan and Rani Subramaniam (C'72)

time, there was no drama and no screaming bloody murder; just a quiet reminder that the lapse would count towards the final grades and that we should take responsibility for our actions.

ASM's blackboard was very well organized with sections marked out so as to keep different aspects of the lecture separate. Not for him the afterthoughts of marginal notes in different colours and criss-crossing arrows linking different equations in the lecture. No to-ing and fro-ing that betrayed disorderly thought and poor preparation. The lectures flowed. If it was important, it was included from the beginning and found its rightful place at the right time. I have never seen anyone, before or since, use the blackboard as effectively and clearly.

He prepared for and planned his lectures and it was plain for all to see. He was always well presented but was no dandy; nor did he affect the academic fashion of the day. Not for him the long hair or facial hair which was de rigueur for academics of that era. I was long gone by the time bell-bottoms and flared trousers became fashionable, but I doubt if he ever wore them to classes. I do remember his narrow trousers – not quite drain pipe when that was all the rage – which hovered around

his ankles and the long-sleeved shirts occasionally rolled up to the forearm on a slim – even slight – frame. He sported a functional crew-cut, not quite as short as a military one. Neither loud checks nor bright colours which attracted attention. Everything about him said "Focus on the lesson, not me". After explaining a particularly difficult point, he would give a piercing look (not the baleful stare some his senior colleagues were famous for) asking, "Sounds reasonable?" and inviting "comments, questions and suggestions". The man was polite to a fault.

He was averse to getting lost in a thicket of equations and mathematical sleights-of-hand saying "when you cranked all that out, you will get this", and wrote the result down prefixed with ICBST (It Can Be Shown That). For years later we used the phrase "cranking out" to mean mathematical calculations. There were some dark mutterings that ASM was "weak" in maths and hence his reluctance to publicly wrestle with it. We were young and callow and were easily impressed by mathematical machismo and Wronskian wizardry. It was years before we realized that he was trying to get us to focus on the underlying concept without getting lost in the grammar of maths. He preferred to not let the trees get in the way of seeing the woods

and not let Maths get in the way of understanding Physics.

He did not just stop when the classes were over. We could call on him any time at his residence, and we did, even to the point of arriving there with not a question of Physics on our minds but in the hope of being offered something to drink or eat. Surely he was not fooled, but he understood our desperation for good food. He introduced us to the pleasures of "Monsoon Hikes" and the pains of rock climbing. We hiked to most of the lakes around Bombay during monsoon, climbed the rocks around Mumbra, went bird-watching to Karnala bird sanctuary and hiked up the Matheran hills (sliding most of the way down on our back sides). He did not have to do this, not when it involved 4 a.m. treks to Kanjurmarg station and missing the last bus or train on the way back; but he did. He supplied all the climbing equipment, binoculars and such like, and we supplied the raucous and boisterous company which he tolerated, and at times even seemed to enjoy. He was also an avid photographer, if I remember well, and had many albums full of beautiful black-and-white photographs. The man simply went beyond what he was required to do or what he needed to do.

He even purveyed "love advice" once or twice that I am aware of. His take was that the Rakhi day was an opportunity for girls to keep away unwanted male attention; all that the girl had to do was tie a "rakhi" around the suitor's wrist and he was instantly obliged to be a "brother" and act like one. One girl took this advice seriously, having sensed the amorous intentions of a classmate. Come Rakhi day and all hell broke loose: she was trying to tie a rakhi to her suitor's wrist and he was running around the class furniture trying to evade imminent "brotherhood". Quite a hilarious scene it was too. He was

a good parent too, from what we could see. His son Sirish was three or four at that time and was a curious and somewhat precocious lad. His numerous questions would always be answered by ASM as if he was talking to an adult and not the way we usually talked to kids of that age.

One could engage with ASM just as easily on Advaita philosophy as on Aharonov-Bohm effect or Animal Aggression, and some of us did. Some are still doing that, full four decades after leaving IIT. Personally speaking, he introduced me to Konrad Lorenz's work on animal behaviour which later fed into my interest in the behavioural aspects of finance. The man was a polymath! He wasn't just looking to develop good physicists; he was looking to mould good humans.

The first thing he does on arriving in Chennai is to meet some of us, his former students, even before meeting his family. No wonder that even after four decades, even after our own retirement, we still seek him out and meet him. ●



*S. Muralidharan
MSc Physics '72*

The self-styled "Cool Cat" of H9 joined the Banking industry in '72 and went on to found India's biggest private Life Insurance Company in 2001. Retired in 2011 and lives in Chennai. A jazz fan, he never missed a Mumtaz movie at the Convo, sometimes watching both shows.

Musicology of 27

Living Large and Dying Young

Kritin Joshi

Music is an expression of the human soul and the connecting fabric across all differences and classifications. A character shaped through music is enlightened. It can see through the repeating nature of life, using it to create an alternate universe of symphony and wonder.

We were born into a world where Hendrix sang, “Freedom! That’s what I want now. Freedom! That’s what I need now. Freedom, to live. Freedom, so I can give” and Morrison asked, “We chased our pleasures here, dug out treasures there, but can you still recall, the time we cried?” Kurt Cobain educated us as he said, “I don’t need to fight, to prove I’m right, I don’t need to be forgiven; don’t cry, don’t raise your eye, it’s only teenage wasteland” while Amy Winehouse tried by saying, “Darling they empathize, looking through your bloodshot eyes. And I know you you’re so frustrated. Above we all become what we once hated. Be slight, nobody can be that wise”.

It is rightly said that being exceptional and successful renders us more susceptible to isolate ourselves from the world. We find reasons to find association and dependence, but the winner, the exception, stands alone. It is, maybe, this that caused legendary musicians to reach out to the arms of drugs and alcohol, which ultimately consumed them.

“When you’re dead, you’re gone. You exist

“When you’re dead, you’re gone. You exist only in the minds of those you leave behind. You become a fragment of a story; a beginning, middle or end.”



only in the minds of those you leave behind. You become a fragment of a story; a beginning, middle or end.”

September 18, 1970- Jimi Hendrix (then 27 years, 295 days) was found by medical officials, asphyxiated in his own vomit, red wine filled in his airways. He had consumed nine times the normal dosage of a Belgian sleeping pill, which may have been the culprit. However, the differed comments of his girlfriend regarding the event, a premature announcement of suicide by his managers and the doctor not performing autopsy, all smudge the clear picture of events. The world lost a legend, the father of modern day rock and roll.

From the sixty’s till today, even though human kind has evolved as a race, it has never let go of its addictions and eccentricities.

April 8, 1994- Kurt Cobain (then 27 years, 44 days) was found by officers of the Seattle Police Department with a shotgun across



©Tony Fischer Photography

his body, a visible head wound and a suicide note nearby. The King County Medical Examiner noted that there were puncture wounds on the inside of both the right and left elbow. Despite the official ruling, several theories have arisen, offering alternate explanations for Cobain's death. But one is forced to ask, "Was this the Nirvana he always wanted?"

Perhaps there is a divine balance between being creative and being able to express that creativity. The more creative, artistic or abstract a musician becomes, the more he or she is isolated from the normalcy of common existence.

July 3, 1971- Jim Morrison (then 27 years, 207 days) was found dead in a Paris apartment bathtub by his girlfriend. As per French law, no autopsy was performed as the medical examiner detected no evidence of foul play. It was later claimed by Alain Ronay and Agnes Varda that Morrison had taken heroin after a night of drinking. He was observed coughing badly and then had gone to take

a bath, when he vomited blood. Pamela Courson, his girlfriend, said that he then had appeared to recover and after that she went to bed. Sometime later when she went to check on him, she had found that Morrison was unresponsive which forced her to call for medical assistance. It was then that one of the most legendary singers and front men of all time truly did "break on through to the other side". The absence of an official autopsy has left many questions unanswered regarding Morrison's actual cause of death.

4th October 1970- Janis Joplin (then 27 years 258 days) was found dead, overdosed with heroin and alcohol, by her manager John Crooke. It was later discovered that in that week, the dealer, who Janis took heroin from, had sold a different and stronger strain on which many clients had overdosed. Her will contained terms that a \$ 2500 wake party be held in her remembrance. The Queen Of Rock and Roll left imprints on history that can never be forgotten.

In 2011, twenty one years after Janis's death,



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Amy Winehouse (aged 27 years 312 days) died due to alcohol poisoning. Three years earlier, she had expressed a fear of dying at that age. The infamous club 27 of musicians, who have died more often than not due to drugs and alcohol abuse, has more than 45 victims among its ranks.

Life has its way of maintaining a balance. Like energy, there can never be talent that is created, or destroyed, even by death. But nature, in its divine conservation, balances the bursts of talent to fit the evident normalcy of human existence. All these individuals died at the age of 27, which has become a legend or a myth in the rock circuit. Although it is really difficult to decipher, this pattern almost borders on apophenia (finding patterns that you are looking for subconsciously in everything around).

In real life, the number 27 may highlight itself more than once and many more may die at 27, many musicians, many not. It is the human mind that attributes the value to a number and forces itself to make a pattern out of every clue it seeks. It is we who have forged the 27 club in our heads and it is we who have carried it forward to mean more than it should. What it should mean is that if you uncontrollably fill your life with addictions and isolate yourself as you become

more and more successful, your life expectancy may very well be 27.

Death, in itself, is nothing; but we fear,

To be we know not what, we know not where. ●



Kritin Joshi
B.Tech. Civil Engg
'2011

Kritin is a graduate of the Indian Institute of Technology, Bombay class of 2011. Currently employed with Deloitte Consulting in Mumbai, he co-manages US Global Office communications and trans-border alliances for the Deloitte initiative Lamp Post Kids to educate underprivileged kids from slum areas. He has worked with the international NGO Rakshak Foundation (www.rakshak.org) to conceptualize and deliver a mega event Desh Raag (www.deshraag.org). He is one of the founders of the initiative Be The Change Radio (www.bcradio.in : A new age platform for non-Bollywood artists in India) and consults pro-bono for them alongside work.



To B.E. or not to B.E.?

Queen bee

If one went by recent media reports, the trends in urban India and in Liberal Arts studies in India, both appear to be at a healthy transitional phase. A number of private universities offering interesting arts programmes have sprung up and they say the number is on the rise.

However, the book *To B.E. or not to B.E.* written by Dipen Ambalia is not about that. The author has written this book based on the observation that India still belongs to those parents who want their children to choose either medicine or engineering as a career. Calling it a light read, this book in particular is a satire on the life of engineering students and tries to give a glimpse of the life and time of the children of this group. It's a book for aspiring students on what to expect from an engineering college life. It also addresses current students to connect as a kindred tribe with their common experiences and their fun and tribulations that they are going through right now, while in college. It is also a book for those who have graduated and are at different stages of their careers. Alums who have left college but the college has still not left them. The kind who may want to go back in time and relive those magical moments again and enjoy the roller-coaster ride one more time. Dipen, himself is an electrical engineer from VJTI who has also authored - *In Their Shoes* and *LOSER (Life of a Software Engineer)* in the past.

This book is special for the IIT Bombay community, not only because it has some inspired spiel on engineering and engineers, but also because it is co-created by our young, old boy - Shreyas Navare. Shreyas - a 2008 management graduate from SJMSOM passed out of IIT Bombay to join a leading bank as its Senior Manager, Marketing and Corporate Communications. While working at the bank, he also freelanced as Hindustan Times cartoonist and was particularly well known for covering the elections in six Indian states for HT in 2011 through his cartoons. In 2012, he went a step further and covered the US Presidential polls in a similar fashion.

After a few years of leading a dual life - of being a banker and a freelance cartoonist, he has now chosen one and crossed over to being a full time devotee of his first love - sketching and drawing. A published cartoonist with his first book called *Dabs and Jabs* - Shreyas has been touted by both media and critics as an authority on satirising politics and current events with his brilliant visuals and witty one-liners.

The book - *To B.E. or not to B.E.* is a light read and does not pass any judgment on career choices made both by engineers or non-engineers. It, however, does make humorous commentary on some of the absurdities of latest technologies and also the hollowness of the entire system especially in the engineering field. Shreyas has drawn the cover in a visually appealing manner with gentle touches of humor and satire. His sketches with his unique drawing style and unexpected quips and digs complement the narrative well and leave the reader with a lingering smile. ●

Be the “Go To” Person

Let-it-bee

In previous columns LetItBee advised that one needs to work like an Ant to be able to sing like a Cricket. Wannabe Cricket's should move to "warm" climates and in order to escape the hardships of winter. One has to move to where the opportunity is. Another important financial strategy is to work hard and salt away assets during the first part of one's career and when successfully implemented, a time will come when those assets will work for the individual.

The following advice was given at a seminar by a gentleman who rose to become the Managing Director of a publicly held bank that he joined as an entry level candidate, after graduating from college. People would ask him why he had spent his thirty years or so at the same bank and what did he attribute his success to. Besides being at the right place at the right time, luck, hard work, a good performance track record, etc. he highlighted two attributes that contributed significantly to his success namely; "attitude" and not refusing any job request that came his way.

Typically when one is approached with a request that is beyond one's span of responsibility or scope, the response is, "Aap usko puchiye," or "That is not my job," or "That is simply not possible." or "I am too busy". He approached these requests differently. He did what was requested, if he could get

it done, even if it was not his domain or if it was beyond his domain, he would clarify what was being requested and respond with, "Let me get back to you." He would then figure out who needed to be roped in to get the job done, get back to the person who requested the assistance, with whether it could be performed, or if not, why not. Furthermore, he would follow through in ensuring that the request was indeed completed to the satisfaction of the requester.

As a result, he acquired a reputation of a "Go To" person. Co-workers and Management could be heard saying, "If you want this done, "Go To" this chap. He will get it done." This worked extremely well in his favour. It kept him busy, he got involved in many interesting assignments, some not so interesting. He put in a lot of extra hours and effort and in the end it all paid off.

The moral of the story is if one wants to get ahead rapidly, don't refuse challenges - Big or Small, that come one's way. Rise to the occasion, either perform the task oneself, seek solutions from others, involve others if necessary and follow through on the execution. By establishing a track record of a "Go To", person, and one will Go a long, long way. ●

Thanking you Yours faithfully PC (Present Continuous) Bee

IITB, Fundamatics, and this ‘thank you’ section has one thing in common. They are all present, continuous and a tad tense. Hence, the Queenbee recruited the services of PC Bee to thank all in the present continuous tense.

Editor madam is calling and telling to giving thanks to CARS. I am not understanding editor madam. Why we are thanking CARS. Editor madam is telling that CARS is driving *Fundamatics*. It is confusing and again I am not understanding. We are driving CARS. How CARS is driving anything? Madam is laughing and telling that when we are telling CARS, we are telling short form. We are actually telling Contributors, Advertisers, Readers, and Subscribers. So yours faithfully is thanking CARS and requesting that you should continuously be contributing, advertising, reading, and subscribing.

I am believing that this is the IITB Foundation Day issue. So I am thanking Pandit Jawaharlal Nehru who is coming one day in open jeep, wearing red rose and laying foundation stone. If he is not laying stone and cutting ribbon, how IITB is becoming? How alumni are borning? How *Fundamatics* is forming? I am simply saying that if Nehru is not coming, *Fundamatics* is not happening.

People are telling that IITB is great. WWhy? Because it is running like a film which some persons are directing very well. Persons who

are directing are Brigadier Bose, Prof. Kelkar, Prof. De, Prof. Nag, Prof. Sukhatme, Prof. Misra and Prof. Khakhar. Another person Prof. Bedford is doing acting directing. He is delivering Silver Jubilee hit and Prof. Misra is delivering Golden Jubilee hit. Some directors are writing in this issue and some are ghost writing. So I am thanking all people who are doing good directing and requesting to do more directing and writing.

I am thanking *Honourable Rashtrapatiji* because he is giving Padma Shri award to our beloved Prof. Phatak. Even if he is not getting award, we are taking interview of Prof. Phatak. But because of award, PDP (Prof. Deepak Phatak) is becoming PPP (PadmaShri Prof. Phatak). You are not confusing with political parties, no?

I am thanking PPP. He is giving good interview and is giving humbling experience. Many alumni are telling neighbours’ wives that PPP is teaching them Fortran IV and Cobol. But neighbours’ wives are also showing cunningness. They are telling that if you are giving us free Aakash tablet, we are believing you. Otherwise, we are not impressing.

Madam is telling that *webteam* persons are sleeping for last two issues. So she is waking up them by telling them to hosting Poll Khul Gayi. They are doing good job. But still, only few persons are doing polling. Webteam

persons are also sending bulk mail asking people to sending articles. Junta is sending articles like anything. So I am thanking again and politely requesting these fellows that Sar, please! No more sleeping.

Delhi rape is shocking everyone. People are shouting and fighting and lighting candles. Candlelight is illuminating our thoughts like 1000 W bulb. We are getting idea for Poll Khul Gayi. Angriness is coming to us also. Without seeing candles, how we are shocking? So we are thanking all *candle manufacturers*.

Some people are wanting high quality ezine and working like anything. They are calling late night and talking and talking. I am not understanding what all they are telling. Some code and wordpress and domain and platform and scrolling ads and what not. So I am thanking Paresh Vora, Swaroop Vajrapu, Parul Gupta and Sandip Tarkas, and Shridhar Shukla's kTalk bridge and all phone companies. Very soon, we are seeing www. Fundamatics.net

Fundamatics is giving exchange offer. If you

are liking our Facebook page, we are liking you.

Once again, I am

Thanking you,

Yours faithfully

PC Bee.

PS: After reading this, Madam is giving me marching orders. (she "may" wait till April). How it is my fault? She is not understanding simple ing-lish. ●

Creative Bees at Fundamatics

Illustration



*Shreyas Navare
C'08, SJMSOM,
H-13*

*Shreyas Navare:
(C'08, SJMSOM,
H-13), Mumbai,
Senior Manager,*

Marketing and Corporate Communications at a private bank. He freelances as a Editorial Cartoonist for Hindustan Times. He has covered elections in 6 Indian states through the eyes of a cartoonist on behalf of HT.

Shreyas has held many cartoon exhibitions, two of which were inaugurated by Dr. A. P. J. Abdul Kalam. His first solo international cartoon exhibition was held recently at Bangkok. His second exhibition was held at Nehru Centre recently. Cartoons featured in this issue are from the exhibition.

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Design



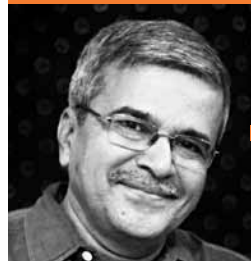
*Anand Prahlad
C'07, IDC, H-8*

Anand Prahlad is an independent graphic designer and artist.

When not designing books, magazines, corporate identities or illustrating, he is an active gardener, culinary expert and amateur musician.

He runs www.thenewvitruvianman.com, where he writes and illustrates articles on design, gastronomy and music.

Illustration



*Arun Inamdar
B.Tech. Geo C'76*

Arun Inamdar is an example of the breadth and depth of talent in IITB. A geologist by training and a professor at the Centre for Studies in Resources Engineering, he is a perceptive cartoonist and caricaturist with a soft corner for the campus and its ecology. His caricatures have brought smiles to an array of celebrities who have visited the campus and his cartoons hold up a mirror to our follies without causing offence. An alumnus of the C' 76, he can be depended upon to come to the rescue of the ACR office and IITBAA with his talent at very short notice.

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