Reflections, Refractions and Reactions (PART 2)

In the third issue of Raintree, we initiated a discussion on IIT Bombay’s evolving self-image under the broad idea of ‘Connect and Disconnect: The world within and without IIT Bombay’. Of the three themes identified to guide the discussions, Raintree has covered the first topic, i.e. Teaching vs. Research. In this issue, we continue the debate while taking up the two remaining themes, i.e. University vs. Institute Model and Fundamental vs. Applied research.

Public institutions like IIT Bombay have to contend with a number of challenges in the new millennium. One of them was recently thrust into prominence, following an articulation by the HRD minister that IITs must evolve into broader-based ‘universities of technology’. Such aspirations, however, have to be tested against limitations — both real and pressing — that IIT Bombay faces on the critical ingredients for excellence: resources, talent and funding.

On one hand, there is a very real fear that the institute might be spreading itself too thin, and that core areas need to be strengthened before venturing into new terrains. Also, expectations often give rise to inner tensions. In this particular discussion, we looked into the unique dichotomy between the University vs. Institute of Technology model by exploring the views of different stakeholders...

Jaya: Is the proposed move towards a university model a welcome one? Does IIT Bombay stand to profit from the wider range of disciplines and ideas? Or will the move risk diluting our traditional strengths?

Anurag Mehra: It is tautological to say that any institute will stand to gain from a widening of the range of disciplines. There are logistical issues involved in carrying out any such broadening of scope. Currently, we seem to be running headlong into doing all these things without any sense of consolidation of past gains/achievements, proper preparedness or planning. Much of this broadening has to evolve naturally, with the building up of the needs of inter-disciplinary work. While here it seems to be more a case of living up to a slogan, imposed by a government which wants to “show” how committed it is without much actual commitment (and money for that matter). As a result, eventually everything — intellectual and financial resources — will be spread too thin.

Sushant Sachdeva: Yes, in a utopian world, I too would strongly agree for such an expansion into a much wider range of disciplines, and conversion into a complete University model. Unfortunately, the current situation is... (contd. overleaf)
precarious and delicately balanced. There is a shortage of faculty and administration with an increasing student body, and the resultant lack of hostels, classrooms, etc. In addition, there is a host of new IITs, including the two that IIT has to mentor. This is all happening when unfortunately, IIT Roorkee and IIT Guwahati have yet to establish reputations, comparable to the older IITs. At this stage, I definitely believe that with any step that we take towards expansion, and yes, a lot of the steps that we have already taken, we risk diluting our strengths further if I believe that we have already significantly suffered. I am quite pessimistic about the situation as it stands today. I believe that unless drastic steps are taken, we will suffer greatly from the erosion of our standing as an institution and as members of a community that has been proud of the quality of everything associated with the institute.

"Currently, we seem to be running headlong into doing all these things without any sense of consolidation of past gains/achievements, proper preparedness or planning. Much of this broadening has to evolve naturally, with the building up of the needs of inter-disciplinary work." PROF. ANURAG MEHRA

Jaya: Both of you are painting such a grim picture. How would you, Sushil, as a representative of the student community respond?

Sushil Shintre: As students, the single largest influence that we had on our lives in IIT was the fact that we got to interact with a different and immense talent of men and women and students. And adding on to that, already diverse range of students through the proposed University model will certainly be a good idea. But then, this argument will hold only if somehow these students can be accommodated within a single campus. If we leave out this aspect, I don’t see any practical benefit in the University model, other than the fact that IIT will initially lend some of its glamour to these new institutions, which in all probability, will be of no consequence if it does not live up to the expectations.

Mukundan: I would tend to disagree. Rather than a University setup which is practically not feasible in any of the IITs at present, because of no physical and financial support available it is best for IITs to remain what they are currently. Expansion can be in areas where technology plays a significant role. For example, rather than having a Music Specialty department, have the Physics of Music as a research area. This is what differentiates the work done at IIT from a better male-female ratio. But UC Berkeley is not better because it has a higher female percentage. Neither, for sure, is University of Maryland which has a much better male-female ratio. Expanding IIT because we want a better male-female ratio sounds controversial. I have no objection if IIT ends up being a wonderful place to go, like St. Xavier’s in Kolkata, St. Stephen’s in Delhi, St. Joseph at Bangalore, or Stella Maris at Chennai. But there should be ONE place in India — maybe not IIT Bombay if you so desire, Yashodhan — where there is only one definition for being there, for faculty and students alike — merit. Okay, make that five places, in the engineering sphere.

Ganesh Samdani: The feedback of Postgraduate students is that interdepartmental courses (and IDPs) should be encouraged, as they give a broader perspective on scientific knowledge, offering variety and allowing us to be exposed to the fields other than their specific research area. However, new programmes at IIT Bombay should not become burdens on our traditional strengths.

Yashodhan Kanoria: Jaya, I am also of the opinion that IIT would profit from having a wider range of disciplines. Stronger programmes in the Humanities and Basic Sciences could greatly benefit the IITs. An aspect that perhaps receives less attention than it deserves is the extremely skewed sex ratio on campus. In my view this is unhealthy, and has multiple negative fallouts. Having a broad range of disciplines is likely to lead to a positive change on this count as well, in addition to providing academic balance.

Jaya: In an ideal scenario, yes, of course, we’d like to change the male-female ratio, but do we need to branch into Liberal Arts for that? There is also an implicit assumption here that disciplines themselves are gendered. Would anyone else like to respond to this?

R. K. Shevgaonkar: I don’t see the need to branch into Liberal Arts. Why have more women not come into engineering streams? Performance-wise, girls perform better than boys, yet few take such courses, because maybe their parents don’t allow their daughters to live in residential campuses. In the last ten years or so, I’ve seen interaction between the professors and students lessen. I rarely meet them outside class. So what is the use of a residential campus? I would also like to see better interaction between students and professors.

Mukundan: I would tend to disagree. Rather than a University setup which is practically not feasible in any of the IITs at present, because of no physical and financial support available it is best for IITs to remain what they are currently. Expansion can be in areas where technology plays a significant role. For example, rather than having a Music Specialty department, have the Physics of Music as a research area. This is what differentiates the work done at IIT from a better male-female ratio. But UC Berkeley is not better because it has a higher female percentage. Neither, for sure, is University of Maryland which has a much better male-female ratio. Expanding IIT because we want a better male-female ratio sounds controversial. I have no objection if IIT ends up being a wonderful place to go, like St. Xavier’s in Kolkata, St. Stephen’s in Delhi, St. Joseph at Bangalore, or Stella Maris at Chennai. But there should be ONE place in India — maybe not IIT Bombay if you so desire, Yashodhan — where there is only one definition for being there, for faculty and students alike — merit. Okay, make that five places, in the engineering sphere.

Jaya: So the assumption seems to be that University model equals St. Xavier’s, St. Stephens, etc. Shishir Jha: Much as Prof. Sharat anticipated, a University model could be theoretically welcome, not because I would like the St. Xavier’s model, but because I want seriously to teach and collaborate with non-engineers too. Does this mean arguing for a massive change in orientation of IIT? No. But perhaps this can be achieved by examining even more substantively what technology really means for a country like India. Even if we argue that “traditional strengths” should be consolidated first, my question would be in what enriching way can this be done? Would it be the same status-quo with the threshold levels of research and teaching tolerance?

Shishir Jha: As with respect to the University vs. Institute model, "small is beautiful" can unintentionally become an excuse of exclusive excellence, while "large is (splendid?)" can represent the tolerance of lower and lower thresholds.

Mukundan: 99% of the population concerned would be against it, for reasons that have been raised previously.

Shishir Jha: With respect to the University vs. Institute model, "small is beautiful" can unintentionally become an excuse of exclusive excellence, while "large is (splendid?)" can represent the tolerance of lower and lower thresholds.
Anybody there?  ■ JAYA JOSHI

With this issue, Raintree is four issues old. You have liked us. We can never resist overhearing or listening to anything about Rain-Tree. The design is good” — the content is bold and meaningful”, “it is a bit all over the place”... and so on and so forth. These are good and encouraging, but honestly, we could do with a little more constructive criticism and active participation in the form of contributions sent by you.

With every issue, we try to give you a collection of articles, feature stories, news, humour and illustrations. The opinion pieces mostly find space in the magazine if they are analytical, well researched and present their case well. A lot of effort goes into finding and selecting news pieces for the news section. Raintree also attempts to tap the talent of the lesser known but extremely gifted poets, travel writers, fiction writers, photographers and illustrators. Editorial discretion only goes in to selecting the pieces that fit the tone and calibre of the magazine.

The editorial board is flexible and ultimately it is you who constitute the board. All our contributors freely express their ideas, thoughts and opinions, but you, the reader, may have your own. Bertrand Russell once said, ‘the fact that an opinion has been widely held is no evidence whatever that it is not utterly absurd’. We agree with him.

We want your frank and pointed opinions and thoughts about the content. What did you like, not like or feel differently about and why? Did something in particular or inspire you? What was absurd or silly? The magazine, after having looked within and analysed itself, comes to you to be analysed more. To put it honestly, be as critical as possible. The team at Raintree abhors indiffer-ence and would like to be forever curiously testing new opinions and courting new impressions. So please help us and write in soon with opinions, stories — real and fictitious, articles and criticisms.

Perspective
Reflections, Refractions and Reactions (PART 3)  ■ by TEAM RAINTREE

“There’s no debate between fundamental and applied research as long as we’re doing quality research. We should monitor quality, but at the moment we’re not doing that because a monitoring system is not in place. The number of publications is not the only way to judge quality of research.” — PROF. R. K. SHEVGAOANKAR

Bom-bay’s achievements in technology development have improved somewhat over the years, the question still holds true — should the institute focus great-er attention on targeting more research funding to national priorities?

In our debate we posed the following question — “Is there an opposition between research aimed at the generation of new knowledge, and research aimed at the development of socially relevant knowledge. Should the institute prioritise between the two, and what are the dangers of disenchantment amongst faculty, students and other stakeholders within the institute?”

The responses that this question elicited were quite revealing: they highlighted the varied mindset of the different stakeholders within the institute. There are those like Mukundan, a Ph.D student from School of Management from IIT Bombay, in whose opinion, “the institute should prioritise and the vision document would provide a good starting point for this. As an IIT, the inherent focus should be on anything about fundamental research. Particularly considering the dwindling state support, applied research has to be provided this necessary backup”.

Student perspectives on this issue, however, were quite divergent. Ganesh Samdani, who is an M.Tech student, felt that prioritisation should not be done as it would kill the objective of research and the freedom of the researcher. A view echoed by recent alumnus Suhant Tewadeva (Class of 2008) was that there was no need to prioritise between the two. He elaborated, “Researchers have their own personal goals, and different people gain satisfaction out of different aspects of their work. I believe this decision is best left to them, as long as they work hard towards producing good work”. Interestingly, for an undergraduate student like Sushil Shintre (B.Tech, Civil Engineering) this was largely an irrelevant question, “because like most other UGS, he said, “I have hardly been exposed to real research for various reasons”.

A part of the problem in this debate is also about how one defines and measures Basic vs. Applied research. For Professors Anurag Mehra (Chemical Engg.) and Sharat Chandran (CSE), the contradiction between fundamental and applied research is not a straightforward one. Many members of the scientific community talk about “targeted” research, but that is not necessarily the same as “applied” research, although it can be confused with the sort of “blue-sky, wherever it takes-me” type of research that we generally refer to as “fundamental,” “basic” or “curiosity-driven.”

(contd. overleaf)

Obituary
Prof. Kartic Chandra Khilar  ■ Feb 27, 1951—Dec 13, 2009

Professor Kartic Chandra Khilar, Department of Chemical Engineering, passed away in his Gandhinagar residence after a cardiac arrest. He had recently been appointed as Director General, Pandit Deendayal Petroleum University (PDPU) Gandhinagar.

A gentle soul who was an inspirational teacher, guide and mentor, and also an able and committed administrator, Prof. Khilar joined IIT Bombay in 1982 after his Ph.D. from University of Michigan. He did his B.Tech from IIT Kharagpur in 1975 and his M.S from Drexel University in 1977. In his long and distinguished career at IIT Bombay he held a number of important positions including, Head of the Chemical Engineering Department and then later, of the Center for Research in Nanotechnology and Nanosciences (CRNTS).

He was Professor in Charge of Continuing Education Programmes Cell, JEE Chairman, and the Dean (R&D). He was elected Fellow, Indian National Academy of Engineering, in 2004 and was in the editorial Board of a number of prestigious journals. His own research related to flows in porous media, colloids and interfaces, and nanotechnology, and was truly world class. Most importantly he was successful in inspiring a culture of research in young faculty members who joined the institute after him. His entry in the Chemical Engineering department marked the beginning of a new era in which a modern, research-based work culture developed in the department.

May his soul rest in peace. He is survived by his wife Jaya and their sons Kunal and Mrinal.

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(contd. overleaf)
It also needs to be reiterated here that technological solutions to problems are not always the answer in a country where often basic social and economic rights have not been secured. As Prof. Mehra interjects, “...any conflict appears because the socially relevant issues usually do not (necessarily) require very high-tech solutions but political solutions. If the latter are not forthcoming, then there is a tendency by those in power to substitute real solutions with techno fixes. Water, food, electricity are good examples: a large majority of the people have no access to or do not have the financial capacity to buy these fundamental assets because of their impoverished state of existence. Handling these resources in a more high-tech manner (water purification technologies, more efficient electricity generation, food processing/preservation, etc. are all fine to study and develop in their own right [knowledge], but the effect on an impoverished populace is marginal.”

Prof. Shishir Jha (SOM) does agree that there should be no prioritisation, but his opinion came with a rider, that “it should not just allow the status-quo (i.e., the freedom to do X or not do X) to prevail either, in the sort of lame way that it happens. Building an exciting research culture will not happen by default and neither does it need to be imposed. It needs to be carefully nurtured”.

Prof. N.C. Narayanan from CTARA points out that the institute’s centres can be used to encourage applied research, because core departments, like for instance, the Department of Mechanical Engineering can do fundamental research anyway.

Akhay Mishra (Class of 2002) would disagree that the issue of socially relevant solutions is less a matter of technology and more a matter of political will. Simpler socially relevant solutions do require smart brains, if not linear algebra or matrix inversions. Starting with the traffic jams outside IIT to the chaos in the traffic police headquarters in Bombay, there are areas where IITB can make a definitive contribution. Mishra is of the opinion that we must have “an institute-wide engineering division to solve problems with students, and recruiting done from the industry. Don’t make it an incubator. Put the institute’s research to practise.”

Prof. Raja Mohanty (IDC) also made a valuable point when he pointed out that for an institution such as IIT Bombay, there should be no presumption that the faculty profile is such that there is a good balance between applied and fundamental research. As he says, “Occasional checks may help establish if research is tilted towards any one of these. However, it does appear that we at IIT live in a vacuum of help establish if research is tilted towards any one of these. Fundamentally, research, because core departments, like for instance, the Department of Mechanical Engineering can do fundamental research anyway. ‘At CTARA we deal with technology and development and people from different disciplines come together to work on a problem. If research...”

“Researchers have their own personal goals, and different people gain satisfaction out of different aspects of their work. I believe this decision is best left to them.” Sushant Sachdeva, embarking on another journey of scientific exploration.

Prof. Anurag Mehra further points out, “I don’t think that the institute can prioritise. Faculty members work in academia for a variety of reasons: fun, science, development, invention... a homogeneous world view cannot be imposed, as it will immediately lead to a feeling of loss of autonomy, etc. The institute can (and sometimes has through the Planning Commission or MHBD) run schemes that are more socially oriented; interested faculty can participate if they wish.”

This is echoed in the views of Prof. Sharat Chandran, who points out that “Faculty members will rebel any imposition, and rightly so. A good leadership will set specific goals, subtly influence the process, and go after those goals day in and day out. To the faculty, it will not say, go and do everything. It will vehemently protect faculty and students who do just what they are good at. It will hire faculty who share their passion and mission, and make sure it communicates this at the time of hiring.”

Individual choice, however, does not resolve the issue of evolving mechanisms to reward applied researchers adequately. Dr. Manchanda has discussed this at length in his book ‘Monastery Sanctuary Laboratory: Fifty years of IIT Bombay by A. W. Date of the Mechanical Engineering Department, and current HOD of CTARA in the following words: “There’s no debate between fundamental and applied research as long as we’re doing quality research. We should monitor quality, but at the moment we’re not doing that because a monitoring system is not in place. The number of publications is not the only way to judge quality of research”. The problem has been perhaps best summarised by Prof. A. W. Date of the Mechanical Engineering Department, and current HOD of CTARA in the following words: “We do have structures and mechanisms for rewarding excellence, but not for rewarding relevance.”

Increasing focus on interdisciplinary research is a healthy trend within the institute. N.C. Narayanan from CTARA points out that the institute’s centres can be used to encourage applied research, because core departments, like for instance, the Department of Mechanical Engineering can do fundamental research anyway. “At CTARA we deal with technology and development and people from different disciplines come together to work on a problem. If research-
Conversations with the Medicine Man

DR. ARVIND MESHRAM, Permanent Medical Officer, IIT Bombay Hospital

Doctors to me are intimidating creatures; perchéd as they are, on a pedestal of knowledge. Most doctors would want either a large private practice or a part of the campus community. Unlike the IIT Hospital, which help in building trust between a patient and his doctor. Over a relaxed Sunday morning brunch and tea, I got to know a little bit about the man behind the doctor, what had brought him and now keeps him at IIT Bombay.

Introduction by DAMAYANTI BHATTACHARYA

Dr. Meshram, tell me a little bit about yourself and how you landed up at the IIT Bombay Hospital.

I am what you would call a true hybrid Indian — an amalgamation of many places and cultures. I am a Maharashtrian, whose forefathers had settled near Kharagpur in West Bengal, and whose father (a telecommunications engineer) worked in many places before finally settling down in Delhi. My formative years were spent there and I graduated from University College of Medical Sciences (UCMS) Delhi. After I graduated, I worked in a number of hospitals and nursing homes in Delhi and eventually decided to return to my roots in Maharashtra. Hence, I decided to shift to Mumbai (a city which I had already visited for a short stint of work), and settled down at IIT Bombay Hospital as a permanent medical officer, way back in 1996. My duty starts at one p.m. in the afternoon and continues till six p.m. For the past ten years, I had been assisting the specialist orthopaedician, although I haven’t been doing that for the last two years. Now I go to the hospital and first see the general patients at O.P.D. After that, I go to the ward to check on patients. I do four to five nights of night duty on an average in a month, which may include a Saturday or a Sunday. During this time, I am on duty for 24 hours straight. This, however, is a light workload compared to most hospitals, so you won’t hear me complaining.

Tell us something about you connected to the hospital that most of us would not know.

Well, I found my wife here at the hospital. When I first joined the hospital, her grandfather (who was in coma) was admitted for four days. She was one of the doctors looking after him. Every evening I used to change his dressing (for bedsores), and she would visit at the same time to assist me. If it was a romance, it was more of the old school. We were initially cautious of each other. I didn’t tell my parents though, that there was this girl I liked, and for me both her parents approached me independently. So to cut a long story short, after a 19-day whirlwind courtship, my parents came down and we got married. The night before we got married, I had night duty. I was wearing mismatched clothes bought at different places and looked a bit funny at the wedding, but I think she has been reasonably happy with me in the ensuing years.

What is your typical day at the hospital like?

In my early years when I was posted in the casualty ward, a funny incident happened which I remember to this day. My wing was under renovation, and things were in a bit of mess. No one seemed to know where anything was. Late into the night a woman was brought in, illiterate and in labour. She was lying on the couch. I told her, “Aap neechhe aa jao” in Hindi, and rushed to get a sheet to deliver the baby on. I don’t know what she understood, but when I came back she was standing with her legs apart with the baby dangling between her legs! It’s a good thing I managed to grab the baby before something serious happened to her and the baby.

Tell us about an experience that left a mark on you, which has made you the doctor that you are today.

Most doctors would want either a large private practice or the challenge of working in a large hospital. Yet you seem happy and content in IIT Bombay Hospital. Why is that?

To tell you the truth, I was intensely homesick for the first six months after joining IIT Bombay Hospital. Yet this place works its own magic on everyone, and I was no exception to it. So here I am, (smiles) 22 years later, still very much attached to it. There is often a great deal of sharing, and I feel as if I am connected to and often get to know intimately. We stay on campus and get to interact with others as families, all of whom are created from personal and human bond. There is often a great deal of sharing, and I feel as if I am not only providing health care, but also often providing a listening ear to my patients and sharing in their troubles.

This to me resembles a familial relationship rather than a simple professional one. Sometimes, it also allows you a greater freedom to experiment, try things that otherwise you could not do in a larger hospital set up. So I think I am not just speaking for myself, but on behalf of the entire staff at IIT Hospital, of whom have a great sense of belonging and feel very much a part of the institute.

What is your workload like? How many patients do you see in a day?

Illness or wellness depends upon how you perceive it. You would be surprised to know that this is also somewhat seasonal. So my workload also varies. During the summer months the load is less, as most of the students are off home. But July onwards, I do see an average of 35-40 patients in a day. But let me interject here that although this is a hospital which concentrates on primary health care giving, it is probably one of the best among all the IITs.

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What is your typical day at the hospital like?

When this student peeked in. First, he claimed that he couldn’t sleep, and soon he started saying that it was because he was hungry. He then requested us for a taste snack to eat. So there we were, preparing some bhelpuri, and before we could protest, almost all of it was gone, while we looked on in hapless bemusement. That is such a cute story, almost like a storybook romance! Are there any other anecdotes about the hospital that you would like to share with our readers?

Tell us about a few projects that you have taken on that you enjoyed in the recent years?

Halfway through my stint here I felt a little jaded, and wanted to do something that would help me grow in my profession. I enrolled myself for an M.Phil in Hospital & Health System Management at BITS, Pilani. Well, although it was hectic, I did enjoy going back to school. This was especially because I gained new insights about the job, particularly from the patient’s perspective, and how friends and colleagues in the job (in terms of its administration and management) to the patient. This knowledge came into good use when I was a part of the Hospital Expansion Committee. The expansion plan that we prepared covers the next ten years. As per this plan, although the number of services provided might remain the same, the idea is to increase its quality. For obvious reasons, the increased intake of students presents an additional challenge. And as the job is one of its greatest satisfactions, I do spend time trying to mentor new IIT graduates. However, only some renovation work has taken place for the hospital’s building so far. I also discovered that I enjoy the challenge of administrative responsibility.

What is your typical day at the hospital like?

The pressures here at IIT Hospital are different from a regular hospital outside. Here, the language barrier often becomes a stumbling block, and personally I have often felt the most pressure from students who almost inevitably want to be cured in a day! But irrespective of whether I can help them or not, I make sure that I listen to their problem first.

Dr. Meshram secretly dreams of an IIT Hospital that has a specialist facility that not only caters to the campus community, but also looks into treating our retired staff and faculty. We wish him luck and hope he realises his dream. And as for you, dear reader, the next time you have a persistent fever that refuses to go away or anything else that requires medical help, head to the hospital and seek the help of our resident medicine man.
The Changing Wall

On the second floor at IDC, as you finish climbing the staircase, there is a wall that is painted white. This wall keeps changing every now and then — rather unusual for walls, as they are meant to stand steady. Keep the outside out, the insides in, hold the roof in place and so on. These days if someone shouted, “China!” and asked you to say what that triggered off, you are likely to say, “Tiananmen Square” or “ Tibet” or “cheap-goods-flooding-gullible-Indian-markets”. But, if you are the sort that responded to the shout “China!” with an equally loud shout of “Lao Tzu”, then this changing wall is just the sort of wall for you.

It is said that hearing of Lao Tzu’s wisdom, even Confucius travelled to meet him. At some point in his life, Lao Tzu climbed down from his buffalo and wrote, and thus the Tao Te Ching came to embody the wisdom of ancient China.

This wisdom tells us that it is the emptiness within a cup that holds the tea; it is the doors and windows that transform the walls that we surround ourselves with. On the second floor at IDC, is a wall that has no doors and felt that the kingdom was deteriorating and it was time to leave. He travelled on a buffalo and when he came to the Han Gu Pass, the keeper of the pass realised that Lao Tzu was leaving for good. “Please sir!” the keeper begged Lao Tzu, “write down some of your wisdom, before you go”. Lao Tzu climbed down from his buffalo and wrote, and thus the Tao Te Ching came to embody the wisdom of ancient China.

This wall is all around us, when we bother to notice. Wildlife reminds us of how close we live to a National park. Wildlife is indeed all around us, when we bother to notice.

There’s the glossy black crow that raids the dustbin outside my door every morning. I often startle him when I open my door in a sleep dazed stupor, vaguely clutching my tooth-brush. He immediately retreats to a nearby tree branch and from there, caws reproachfully till I shamble away.

There’s the squirrel that comes to share the crow’s spoils. He’s surprisingly tame, and lets me get within an arm’s reach. He pecks at my shower rod and staring at me with its ruby eyes. I never thought I’d see a barn owl, let alone one primly perched on the ceiling, or moths flying out. I never thought I’d see a barn owl, let alone one primly perched on the ceiling, or moths flying out.

Art that is beautiful may well be art, but art that transforms the wall and those who view it, is a window like no other window. It is a window that leads us to invisible realities.

Random Meanderings

Friendly Neighbours

The Mumbai outside our campus is a concrete jungle, where the occasional street-smart dog or suburban sparrow is all the wildlife we see. But the recent leopard sighting reminded us of how close we live to a National park. Wildlife is indeed all around us, when we bother to notice.

There’s the grey cat that raids my dustbin outside my door every morning. I often startle her with my teeth and barked loud enough to scare me out of my wits. She grew up so fast. We knew that the day she proudly brought a dead mouse to the wing, she had learnt how to fend for herself. Now she’s moved out and only comes to visit on the occasional holiday.

Other occasional visitors include a monkey that peers in at my door in a neighbourly way, from time to time. He appears to delight in startling me, barring his teeth in an ingratiating grin before running away. These monkeys can be very rude though, entering rooms without permission, frightening their occupant silly, ransacking cupboards for food and then sitting in the corridor, eating their spoils, without offering to share.

“Bird-brain!” How I relate to this term now. I returned after an exhausting day at the lab, stunned to hear fluttering and baritone murmurs in my room. With trembling hands, I opened the door to find, quite literally, a bird-brained pigeon pecking at its reflection in my mirror. It took me a good half hour to convince the bird that none of its friends were actually there behind the looking glass, and showed it the door.

My doormat makes for a comfortable bed for one of my furry wing-mates — a doolie dog (or so I thought!) I felt a strange sense of power and control watching her jump out of her skin and vanish downstairs the moment I opened my door. Sadly, the tables turned on me when one day I tried chasing the dog down the stairs. She chose to bare her teeth and barked loud enough to scare me out of my wits, then peacefully settled down on my mat once I locked myself up in my room.

Going for a bath, one is ordinarily mentally prepared to see a lizard on the ceiling, or moths flying out. I never thought I’d see a barn owl, let alone one primly perched on the shower rod and staring at me with its ruby eyes.
Gulmohar Cafe vs Gulmohar Restaurant

Gulmohar Garden Cafe looks like a refreshing experience for many whose definition of a garden cafe ended in a few plastic huts between Main-building and S.I.N.S.O.M.

For someone with an avid appetite for the south-Indian palette, this restaurant serves close to home delicacies, sufficiently urbanized not to bug various regional tummies. Half a dozen varieties of dosa/uthappa/upma are sold at affordable prices (no matter what, they can always be cheaper!) and little compromise is made on the authenticity. Take masala-dosa, for example, though the flour has a distinct commercial taste, the masala preparation and quick service will match some of the good ones back home. One appreciable fact is that the dosa-stone is kept hot all the time. And for those a bit careful about their stomachs, even after a decade of invasion by European and aboriginal bacterial flora and fauna, mine still plays a decent host to the food here.

On the flip side, a Bisleri water bottle costs Rs.15, while the same at Y-point costs its MRP, i.e. Rs.13. I wonder whether the cafe has a bar license. This is a gross violation of the fundamental norm of MRP.

Let us come back to the food. Apart from snacks/chaats, the garden cafe is just an extension of the eatery two floors up. Walk in to both places and ask for a glass of fruit juice. Instead of the fresh one with its squashed taste served on the upper echelons, a ready-made freezing version reaches your table. Ask a Bengali/Malayali how frozen fish compares to fresh. Add to the horror, I am given the same bill at both places.

To make matters worse, let me ask a question: why is it a garden cafe? One of the first things the owners did was to make a shabby polythene tent over a big part. The rest is muddy anyway. This seems to be something synonymous with IITB or Mumbai in general. “We make ad hoc constructions and spend energy, time and money patching it up with more and more ad hoc elements.”

This simply looks ‘slummy’. The make-shift roofing in the cafe is just one indication. Trace it further and you can see a large steel cage of onions, accessible to cows and dogs alike and some other grocery stuff kept out in open. What prevents a dog Q-ing up there (remember Q comes after P), unless the onions have a way of frightening them. The muddy side of the true remaining garden should be improved, with seats raised 10 cm from the muddy ground, and the platform laden with sand and pebbles to make the eating area accessible without “swimming”.

As a final verdict, a personal one though, the upper Gulmohar is a nice restaurant with decent prices for most items and a welcoming staff, which actually is least expected. The lower one, in almost all sense, is two notches below, except for the tasty chaats.

Skeptic Foodie

Opened on June 10th 09, the cafeteria still seems in its infancy. Given IIT Bombay’s lush green, relatively dust-free campus, an open-air cafeteria is an appealing idea. It reminds one of European cobblestoned path cafes, but the environment and food here are of an entirely different crop.

Order process: The menu position is awkward, in that it is surrounded by a customer table. You have to squeeze between chairs (on which prior customers are usually seated) and the menu wall to attempt scrutinizing different options. Once you are ordered, you carry the receipt to the service desk. The seating arrangement is not well expected. The lower one, in almost all sense, is two notches below, except for the tasty chaats.

Milieu: After getting the order, you can either sit in the open air below some sun-umbrellas, or inside an asbestos shade. Cleanliness ranges from average to dirty. Often houseflies buzz around, caring their own special songs or monsoons. Electric fans are useful, but they are absent. The weather of Mumbai does little to improve this experience, since it is mostly humid and a bit too warm. The chairs are comfortable. After eating, leftovers are usually left on the table for the nourishment of crows.

Quality or cleanliness: It is difficult to peek under the hood, but quality of food ingredients feels reasonably good to the tongue, that is still to say one isn’t sure how good they are for the tummy. Plates are reasonably clean, and a pitcher of filtered water stands nearby.

Photograph by Rangoli Garg

Taste: There is nothing extra-ordinary about the taste across multiple items in the menu. To clarify, after trying five-six items, I haven’t craved for any again. A common observed trend is the lack of zestful spices. For example, dahi wada lacks the topping of sweet and sour tamarind sauce in ample amounts, or bhel puri lacks the spicy and hot lingering taste, or paneer pakoda is served without any dip or sauce, or dahi batata puri is short on sweet and hot sauce. Coffee is served faster though the default order is without the option for extra-sugar or no-sugar. Cold drinks list maintains sanctity by not being “Pepsy only”. Extra ice in glass can be requested to chill respective drinks to sub-zero temperatures. Options like sweet lemon soda also exist, and they can be used to savour some cool in the humidity.

Conclusions: The seating arrangement is not well planned. Rains can play spoil sport and make sitting under the umbrellas uncomfortable because of all the sludge that surrounds seats. In itself, sitting under the umbrellas with pouring rain is an amazing experience if you’re willing to get a little messy. Hygiene in the sitting area is questionable. The food appears good and clean, but it lacks characteristics of being special or worth coming back for too often.
This article is adapted from Prof. Rehana Ghadially’s paper on the kinds of stressors faced by students peculiar to campus life, especially life in IIT Bombay. A survey conducted by students also highlights what they consider to be major stressors of different points in their lives on campus. From leaving home to hating laundry and mosquitoes, being disturbed by loud music or snakes, it’s a melting pot of new experiences and stimuli to cope with as you enter into this phase of life.

Teaching “Stress and Coping” to fourth year undergraduates is one of the most rewarding experiences because of the positive response from students of its relevance and usefulness. Here, I would like to share with you student perceptions of stress on the campus. This can provide insights into what causes a disconnect between students and campus life.

There are two theories that relate stress with health and well-being. One is that big events in our lives, technically called life events such as death of a family member, marriage, jail term, beginning a job, etc, are good predictors of health and stress. The second is that it is the micro-stressors or hassles of everyday living that contribute to irritability, anger and distress, which eventually lead to poor health. Let’s see what students perceive as micro-stressors or daily hassles on the campus. Micro-stressors are the “irritating, frustrating, demanding things that characterize everyday transactions with the environment”.

Evidence suggests that lower self-esteem, lower levels of fun and playfulness, low vitality, more depression, low levels of happiness and a low sense of internal control are correlated with high perception of daily hassles.

Walt Schafer at California State University, Chico developed the “Daily Hassle Index” a measure designed for college students. It consists of forty-nine stressful occurrences. Levels of irritation are measured on a scale from zero to ten. Zero represents almost never an irritation, 5 sometimes an irritation and 10 frequently an irritation. The fundamental structure of the educational system is that grades are not annoyances in themselves; they are grade related — difficult to understand, constant pressures of studying, taking tests, writing term papers/lab journals, instructor difficult to understand.

I administered this index to my fourth year students and the data presented here covers the period from 1998 to 2008. A number of key micro-stressors are identified along with suggestions for coping with these. The top ten daily hassles (many are applicable to students of other years as well) are: quality of meals, too little time, getting up in the morning, boring instructor, constant pressures of studying, taking tests, future plans, laundry, writing term papers/lab journals, instructor difficult to understand and being unorganized, the last two sharing the same rank.

First year students are more likely to experience life events in the form of the many transitions they make as they leave home and come to a campus for the first time. These transitions include things like leaving parents, siblings, friends and relatives, leaving a familiar neighborhood, living in hostels for the first time, becoming accustomed to new class organization and teaching styles, etc. The second and third year students are better protected as, for better or worse, they have coped with these transitions and are only beginning to feel the impact of daily hassles.

Students mentioned that the “Daily Hassle Index” does not measure quite a few daily irritants unique to students on the IITB campus. Repeated irritants over the years are the weather, dogs/mosquitoes/cows/leopards, lopsided sex ratio, computer/internet problems, attendance requirement, and inefficient campus transport. Some hassles such as computer/internet problems have disappeared from the student list and new ones have emerged like construction work and time restriction on internet use. By and large, however, for over a decade the profiles of top stressors have been persistent.

Are daily hassles related only to negative emotional states such as irritability, frustration and distress or does this experience impact other aspects of one’s life? Evidence suggests that lower self-esteem, lower levels of fun and playfulness, low vitality, more depression, low levels of happiness and a low sense of internal control are correlated with high perception of daily hassles. In other words, if you see daily occurrences in a way that irritates you a good deal and if these persist, the more you will experience poor health, poor psychological comfort and poor quality of life.

Not surprisingly, the cluster of top five micro-stressors are grade related — boring instructor, constant pressures of studying, taking tests, writing term papers/lab journals, instructor difficult to understand. The fundamental structure of the educational system is that grades are important. Students making average grades often tell me that s/he was a topper at school. The reality is that practically everyone one on the campus was a topper at school and learning to deal with this is problematic. Test anxiety is a common difficulty associated with grades. Pressure are also due to fear of failure as it damages our sense of self-worth. While grades pose a number of difficulties, they are also at the center of a host of aspirations — winning a coveted medal, admission with scholarship for post-graduate education at prestigious universities and the passage to enviable jobs in multinational corporations. These difficulties and motivations are tied to self-image. As Walt Schafer who teaches stress management to undergraduate students writes “a key step in handling the challenge of grades is to make a dual commitment to yourself: to do your very best and to separate your self-esteem from your grades.”

“A key step in handling the challenge of grades is to make a dual commitment to yourself: to do your very best and to separate your self-esteem from your grades.”

**Daily Hassles**

<table>
<thead>
<tr>
<th>BACKGROUND</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hostel 10 Student</td>
<td>Piled up Laundry</td>
</tr>
<tr>
<td>Energy Engg UGs</td>
<td>Writing lab journals, completing assignments</td>
</tr>
<tr>
<td>Students taking CS 101</td>
<td>Instructor difficult to understand</td>
</tr>
<tr>
<td>M.Tech Students in Chemical Engg.</td>
<td>LAN BAN</td>
</tr>
<tr>
<td>Hostel 6 Students</td>
<td>No girls!</td>
</tr>
<tr>
<td>Cricket players aiming for Inter-IIT</td>
<td>Competition</td>
</tr>
<tr>
<td>Hostel 8 Students</td>
<td>Music from my neighbour’s room</td>
</tr>
<tr>
<td>CSE UGs</td>
<td>Lack of time; Work overload</td>
</tr>
<tr>
<td>MI CGs</td>
<td>Getting up in the morning</td>
</tr>
<tr>
<td>Meta UGs</td>
<td>Boring Instructor</td>
</tr>
<tr>
<td>Hostel 13 Students</td>
<td>Sharing room with 3 other people</td>
</tr>
<tr>
<td>PhD Students</td>
<td>Bureaucracy</td>
</tr>
<tr>
<td>Hostel 4 Students</td>
<td>Bad mess food</td>
</tr>
<tr>
<td>Students sitting for placements</td>
<td>80% attendance requirement</td>
</tr>
<tr>
<td>Civil UGs</td>
<td>Job / Future plan / Further studies</td>
</tr>
</tbody>
</table>

**Uplifts**

<table>
<thead>
<tr>
<th>BACKGROUND</th>
<th>COMMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.Tech Students in Chemical Engg.</td>
<td>Something new on LAN</td>
</tr>
<tr>
<td>Localites</td>
<td>Weekends</td>
</tr>
<tr>
<td>Sincere Meta Students not able to concentrate in class</td>
<td></td>
</tr>
<tr>
<td>Hostel 6 Students</td>
<td>Good Marks</td>
</tr>
<tr>
<td>Cricket players aiming for Inter-IIT</td>
<td>Social Networking Sites</td>
</tr>
<tr>
<td>Hostel 13 Students</td>
<td>Playing Sports</td>
</tr>
<tr>
<td>Meta UGs</td>
<td>Talking on the phone</td>
</tr>
<tr>
<td>CSE UGs</td>
<td>Winning an event</td>
</tr>
<tr>
<td></td>
<td>Cancelled class</td>
</tr>
</tbody>
</table>

A survey conducted by Rahul Srivivasan, 4th Year, Computer Science & Engineering and Aishwarya Ramakrishnan, 4th Year, Metallurgy & Materials Science in 2009 came up with the results as shown in the tables.
laundry arise from poor time management. When new stu-
dents join the institute, among many life changes, a critical one is the need to manage one’s time. If these habits persist it means that students have not learned to manage
time effectively. Time management is an effective tool, not
only to reach important goals but also get some discipline
into one’s life.

To manage time productively, one needs a two pronged
approach namely challenge beliefs that time is unimport-
ant or there is plenty of time and follow three simple
guidelines. Firstly, clarify and prioritize what is your ambi-
tion or purpose and translate these into clear short-term
and long term goals, maintaining balance among these. In
other words have social, academic, community, solitude
and leisure goals. Break the goals into smaller targets
and schedule these that is set time aside to meet these
targets on a daily or weekly basis. And lastly, implement
what has been scheduled, which includes things such as
avoid procrastinating, focus your efforts break tasks into
manageable parts. Interestingly, managing time effectively
and grade pressures are related, when you have difficulty
getting up in the morning, you may be saying attending
classes is not important. Mis-managing time can add to
grade pressure. Better time management can do wonders
for your life and for your grades.

That brings us to the last two of the top dozen stressors.
A fundamental need of quality food goes unsatisfied year
after year. This is a deplorable situation. Students (and the
institute) must make efforts to improve what affects them
and their health on a daily basis. Having alternative eating
facilities, training cooks to bring them to their next best
level, introducing variety in the menu – both regional and
international, hiring a part-time nutritionist, willingness to
pay higher mess bills, together with the recognition that
mass produced food may not cater to individual tastes
may go some way in improving the situation. The lop-
sided sex ratio on the campus challenges students to reach
to out members of the opposite sex outside the campus,
build cross sex friendships during the various campus festi-
vals and long summer vacation and access social networks
on the internet.

Discussion on the topic of micro-stressors leaves students
feeling that life is full of petty miseries and annoyances.
But this negative feeling is often balanced out by what
some psychologists have called daily uplifts. These can go
a long way in cheering us up. These unfortunately have
been less researched than daily hassles. For the last two
years the student have provided me with the following list
of uplifts (not in order of priority) which brings cheer
to their lives: cancelled classes, no assignments, getting
good marks, weekends, getting a treat, winning an event,
something new on the LAN.

The scenario that emerges is that the quality of life on
the campus is pretty low. The very aspect that ought to
connect students with campus life is academics but this
represents more a disconnect as observed from student
experience of grade pressures, joy at cancelled classes,
weekends etc. Also forming relationships, especially with
members of opposite sex, are crucial for the young and
the campus lacks such opportunities thereby producing
dissociation from the local social scene.

My own experience dictates that students like to keep
contact with faculty to a minimum. Having shaken off
parental control, more authority figures telling them what
is best for them is perceived as undesirable. This leaves
them with a limited almost all male students — class and
hostel mates, a limited interpersonal situation, that leaves
many needs unfulfilled. Along with this, a physical scenario
of poor food, transport travels, excessive infra-structure
development, etc can alienate them from campus life.

Experts agree that no matter what the source of stress, the fundamen-
tal health buffers such as adequate sleep, a balanced diet and regular
exercise need to be in place to ward of the negative effects of stress.

Some hosts were more famous than others for their bhang conco-
cions, and in this regard, H4 led the pack.

When I tried to pick him up gently by his neck, he gath-
ered all four limbs in slow-motion, locked up at me with
a really stunned look, meowed in ultra-slow-motion, and
then plopped back when I let him go... proof enough that
bhang had affected all the ‘cats’ in H4 equally hard! Even
our dog Blackie was stunned cold, and I remember that this
was the source of many hours of hysterical amusement. By
the way, dogs and cats are common pets — a few guys will
remember Arun “Organic Chemistry” Kaul, who actually
had a horse that he found somewhere. He would go for
lectures to the MB on his horse and actually park it in a
cycle shed. Here is a photograph of him... Enjoy!

Illustration by Farwej Bhutia

Unholy Holi at IITB

Holi celebrations on campus in the early years were — let’s just say — different from now. Some hostel were
more famous than others for their bhang conco-
cions, and in this regard, H4 led the pack. There was a
certain Dinanath Gaule (mess worker) who would rejoice
under the name of ‘Dina colada’, and concocted a ‘Power
Holi (or Holy) Drink’, which had been first introduced by
one ‘Power Hiren’, way back in 1976. He used not one, not
two, but three brand new naye paixo copper coins and
spent God knows how much time in stirring the bhang.
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Illustration by Farwej Bhutia
Over the first two decades of its existence, R&D at the Institute was frustrated by a slow start arising from several unwelcome retardants. While it was recording admirable success in its teaching programmes, the Institute’s performance in the realm of knowledge creation was lacklustre, and in some phases, lamentable. Some of the most confounding hurdles had to be reconciled with the assistance we were getting from the USSR to help kick-start our academic enterprise. Another major drag was a paucity of faculty equipped with the training and skills needed to carry out research. Starting briefly with the second factor, this excerpt from Monastery, Sanctuary, Laboratory goes on to examine the somewhat curious case of the Soviet assistance, and the reasons for which it became, on the whole, less a stimulus to research than an impediment.

One might wonder why the Institute should have been hiring such a disproportionate number of academic greenhorns. One constraining factor was plain availability: should the Institute have set itself to recruiting PhDs, it would have found them rather thin on the ground. The IITs themselves were among the first Indian institutes to offer training towards the PhD in engineering; the universities of the time produced but a thin trickle. Moreover, since the Institute saw itself primarily as a teaching institute, it could also see itself getting by with a largely pre-doctoral staff.

All this meant that subscription to the world of research for many of IIT-Bombay’s faculty would have to await the completion of their in-house training, or their resettlement after their stints abroad. The Institute thus incurred a hefty dead time in actuating its R&D campaign. It needs also to be remembered that once they’d been taken on, faculty found their ‘noses’, as M V Hariharan from Electrical Engineering department has recalled, ‘too much to the grindstone’, formalizing the teaching programmes, setting up infrastructure, participating in campus development. Even those who might have had research uppermost on their minds had to hold their dreams in abeyance for a while. And for this last category there arose another, and quite unexpected, spoilsport. It took the form of the most on their minds had to hold their dreams in abeyance for a while. And for this last category there arose another, and quite unexpected, spoilsport. It took the form of the most

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All this meant that subscription to the world of research for many of IIT-Bombay’s faculty would have to await the completion of their in-house training, or their resettlement after their stints abroad. The Institute thus incurred a hefty dead time in actuating its R&D campaign. It needs also to be remembered that once they’d been taken on, faculty found their ‘noses’, as M V Hariharan from Electrical Engineering department has recalled, ‘too much to the grindstone’, formalizing the teaching programmes, setting up infrastructure, participating in campus development. Even those who might have had research uppermost on their minds had to hold their dreams in abeyance for a while. And for this last category there arose another, and quite unexpected, spoilsport. It took the form of the most
cance in the light of all that ensued. Clearly the Soviets were in no doubt from the start that IIT-Bombay's students should be trained principally for the factory floor – and they proceeded to ship equipment of matching description.

In any event, no clear voices of protest were raised at the time; or were so muted as to have gone unrecorded. The Institute's documents, too, were silent on the subject until as late as the tail end of the 1960s. This is perhaps no surprise. For one thing, it would have appeared churlish, even imprudent, to complain. The prevailing sentiment was one of indebtedness: the general feeling was, after all, that IIT-Bombay had been able to spring off the blocks at the time it did chiefly because of the Soviet aid. For another, it was a period when the imperfections of the arrangement were only just beginning to be felt.

When the protests did finally find voice, they came thick and fast. From IIT-Bombay's self-evaluation submitted in 1970-71 to the 1972 Review Committee, here is a representative sample of what the departments said: 'the department is at present in possession, 'Mechanical Engineering pointed out, 'of many Soviet equipment which are suitable for big production units... It is to be noted that they cannot be used for teaching and research work. This difficulty has greatly hampered our research and development. Metallurgical Engineering pitched in: 'Most of the equipment at present in the department was received back in 1958 on the basis of a list drawn up before the Institute came into existence. The procedure for getting spare parts being what it is, the equipment such as Electron Microscope is lying idle for the last three years.' Adding an end-note that conjures a comical picture today but is sure to have packed a poignant sting then, 'It is an interesting museum piece, ' scolded the department, 'attracting visitors but no researcher.'

In sum the Soviet equipment, for all its hoped-for utility in accelerating IIT-Bombay's academic development, placed IIT-Bombay's faculty between a rock and a hard place. In it-self of little use, it yet exacted large amounts of time and energy from IIT-Bombay's staff – because it was here, it had to be set up, people trained on it – with questionable returns. 'We used valuable resources,' feels Narayanamurthy, 'to put in place something we knew pretty well we weren't even going to use. It was a sense one got right from the beginning.' And Dr B.G. Bhat of Chemistry reminisces, 'Virtually the entire Institute was handicapped because of the Russian equipment – our workshops were terribly handicapped. But we worked very hard to get them going. We were gripped by the spirit of starting IIT-Bombay and that is what kept us working on them.'

And so the coda: the poor man, in no position to turn down his debatable gift, found himself spending all his wherewithal maintaining the elephant the best he could. Nearly as vitiated as the direct effects of the Soviet machines and plants were their after-effects. The provision of Soviet equipment had deleterious, long lasting repercussions: according to De the Indian government, pointing to this alleged bounty in IIT-Bombay's laboratories, was lath to disburse additional funds to the Institute for modern equipment all the way into the 1970s. IIT-Bombay thus stood disqualified, for no real fault of its own, from equipping its labs as it would have liked. Metallurgical Engineering's lament testifies to this plight: 'IISc Bangalore and BHU at Varanasi have received bulk grants for purchase of up-to-date equipment in recent years which has not been granted to us because of the UNESCO aid made available by the Soviet government.'

'The Institute's faculty suffered a lot on this account,' De adds with feeling, 'compared with their counterparts in the other IITs.'

A chorus of disapproval as loud and coherent as this can scarcely be disregarded (and the sample presented here is necessarily a limited one). To hear it is to be compelled to conclude that the equipment component of the UNESCO aid programme, on which the highest hopes had been placed, should go down in the Institute's history as a sterling opportunity lost. It skewed the Institute's trajectory (some might say 'damaged'), especially in terms of its R&D effort; and it was to take IIT-Bombay a couple of decades to stage even a partial recovery from this early handicap.

And if there's one take-home message lurking in all this, it is to have that top-down decision making of this kind, without consulting the end-user, can come to no real good: something that those at the top would do well to remember, but are all too prone to forgetting. Because added with unsuitable laboratory equipment (and this was no less true of computers), IIT-Bombay got off to a much slower start in research than did the other IITs. It's not possible, thus, to speak of foreign assistance to IIT-Bombay in the same breath as that given to its sister Institutes, where there wasn't the same chasm between intent and outcome.

Yet though this deficit might have delivered a body blow to the Institute's research endeavour, it wasn't quite a knock-out either. IIT-Bombay was to go on to stage a resurgence, be it a modest one, after its effects had waned. And if over the years IIT-Bombay has managed to catch up with the other IITs in volume and quality of research, one needs to credit its resilience in overcoming the odds.

WHEN HOLIDAYING IN KERALA... REMEMBER YOUR CYRILLIC

Whatever the failings of the Soviet equipment, they weren't without their hidden gifts either. And as Narayanamurthy was to discover, these could at times be agreeably financially. Chemical Engineering ended up with such a cargo of platinum on their hands (some six kilograms of it) that it subsequently posed a security hazard. True to Soviet style, this was done in the form of a giant five litre crucible, 'big as a cooking pot', says Narayanamurthy. Then when he became the department's Head in the early 199 0s, Narayanamurthy caught himself wondering about being hauled up if the precious metal somehow went missing. So he went about obtaining the Board's permission to dispose of it by public tender. This fetched the department a 'handsome amount of money for those days' – some Rs 16 lakh – which they put into an endowment, proceeding from then on to enjoy the interest on it.

In the realm of utility, too, there were a few honourable exceptions to the rule. Dr J. Vasi of Electrical Engineering gives the example of one of his first Ph.D. students who, around 1985, needed a very high voltage, high frequency oscillator for his work. Vasi was deliberating whether to have it made in-house or to procure it commercially when his lab superintendent, Kasbekar, said he remembered having seen an old high voltage oscillator lying around somewhere. He proceeded to unearth it; 'but of course because it was this huge Russian thing,' says Vasi, 'he had to get two guys to lug it over. Nobody had used it for at least 10 years but when you started it up it worked just fine, there was no problem at all. In fact we got some very nice results with it. ' (For the Soviet equipment that did in fact get deployed and did in fact work, extreme ruggedness is a virtue most users have attested. Some of these behemoths – and beside them their smaller cousins – still stand in IIT-Bombay's labs in steady grandeur, mute witnesses to the flux of five chequered decades.)

For some, the benefits could be rather elliptical. Dr Gaitonde tenders this vignette in his droll style: 'Another problem with the Russian equipment was that all the symbols and labels were in Russian, with the inverted F and the Pi and other unknown characters. But slowly, some sort of automatic image processing happened, and many of us learnt what the symbols meant. That training came in handy when I found myself on holiday in Kerala, where everything was written in those rounded type of letters, and we couldn't figure out our bus routes. Suddenly at one bus station I found the route numbers and destinations in both Malayalam and English. Five minutes of looking was all it took, my brain had done the mapping, and for the rest of the trip there was no difficulty. So the Russian experiment did have its side effects in real life, it was good training in some ways.'

Going into the 1970s and all through that decade, we find a marginal improvement in terms of its R&D effort; and it was to take IIT-Bombay a couple of decades to stage even a partial recovery from this early handicap.

Before long, these changes had their expected effects. Between 1970 and 1972 the Institute had only about half a dozen sponsored research projects running on a meagre Rs 4-8 lakh per year. Subsequently, there were quantum jumps in funding attracted for R&D, such that the decade between 1973 and 1983 witnessed an impressive ten fold rise in extramural funding. Yet these jumps need to be seen for what they were, losses within the small universe of IIT-Bombay's R&D enterprise – which had been virtually non-existent until the early 1970s. On the larger canvas, the figures during this interval pale beside those inked in by sturdier performers on the Indian scene, such as the Indian Institute of Science.

(To be continued)
Field Trip to Bandhavgarh National Park

A s our jeep climbed up from the Badi Goofa, a herd of chital grazing around scampered across the road. But this time it was not due to the mere disturbance caused by a tourist vehicle. Once across the road, each one of them was gazing intently towards a particular area and some started giving the bark-like alarm call and stamping the ground with their hooves. Our presence didn’t seem to matter at all. A lone male, who had not crossed the road, and who appeared to be the leader of the herd, also started to stamp the ground and give the alarm call. This was a sure indication of a predator in the vicinity.

Our guide then spotted some movement on the hillock. Sure enough, we spotted a chital lying down with a leopard on top of it, holding the deer by the throat. It was still struggling, kicking around every now and then, trying to throw off the big cat. The leopard must have felled it just a few moments ago. After a struggle which lasted nearly four to five minutes, the chital lay still and the leopard let its throat go, and sat erect. All was quiet. The alarm calls had stopped and the herd went about its business of grazing. All through, the leopard managed to watch it for more than 15 minutes, we just didn’t seem to matter at all. A lone male, who had not crossed the road, and who appeared to be the leader of the herd, also started to stamp the ground and give the alarm call. This was a sure indication of a predator in the vicinity.

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On the second morning of our stay, a tigress with two cubs was reported to have been sighted in the Chakradharpur grassland, just a few kilometres from the main gate, so we headed that way. The tigers were in the grasses and we could not see them from the road. Around seven to eight jeeps had already converged at that point, so we had to await our turn to get on an elephant and go into the grasses to take a close look at the big cats. They were so well-camouflaged that an untrained eye would have easily overlooked their presence. The elephants moved as close as eight to ten metres from the tigers. The tigress was resting and the cubs were generally playing around. It was an exciting and exhilarating sight. The cats seemed oblivious to the elephants and their riders. As word spread, more and more tourists landed up and the tigress decided that it was time to move. The elephants followed them till they crossed the road and moved on towards the hills.

A misunderstanding with the jeep driver actually helped us spot a tigeress with two cubs at Ghodademon. The tigress had been sighted in the morning in that area. In the evening, although we asked our driver to take us there, he drove towards Mehran Pond and caught us unawares. On realising the error, we retraced our path and moved towards Ghodademon. It was getting late and we crossed jeeps returning from Ghodademon, disappointed that the tigers did not show up. We carried on all the same and just as we reached Ghodademon, the tigress decided to make an appearance and moved out of the bushes and crossed over an exposed hillock to disappear into a depression below. We could also spot its two cubs some distance away and we peered more like fully grown tigers and we were told that they were nearly two years old, and might leave their mother’s side soon. If we had not taken the detour, we might have left with the other jeeps and missed the tigress and her cubs.

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There are a number of caves with inscriptions and pictures which are said to belong to the Mauryan period. The temple is quite picturesque and is devoted to Ram, Laxman, and Sita. The “Raja ka Machaa”, a stone seat on one of the outcrops of the fort, affords a beautiful view of the forests below.

Hilly regions, undulating forests and grasslands provide a rich habitat for a variety of flora and fauna.

This once-in-a-lifetime sighting was a fantastic bonus during our field trip to the Bandhavgarh National Park.

The Bandhavgarh National Park derives its name from the Bandhavgarh Fort situated inside the park. Bandhavgarh means “brother’s fort” — a gift by Rama to his brother Laksmn on their way back from Lanka. The fort and the surrounding forests once belonged to the Maharaja of Rewa. Being their private game reserve, the maharajas ensured adequate protection to the forests and its denizens. The abundance of game can be gauged from the stone plaque in the forest which marks the place where the maharaja killed his hundredth tiger! The park covers an area of nearly 1,160 sq. km., and is a Tiger Reserve under Project Tiger.

The Bandhavgarh National Park is situated in the Vindhya Hills of the Shahdol district in Madhya Pradesh. Tourists are allowed to enter the park only from Tala, a village on the north-eastern boundary of the Park. Katni, 92 kilometres from Tala, on the Jabalpur-Banaras line is the convenient railhead, though Umaria, 32 kilometres from Tala, on the Katni-Bilaspur line is the nearest station. Private buses and jeeps are available from both Katni and Umaria to reach Tala. Boarding and lodging facilities to suit every budget are available here.

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There are a number of caves with inscriptions and pictures which are said to belong to the Mauryan period. The temple is quite picturesque and is devoted to Ram, Laxman, and Sita. The “Raja ka Machaa”, a stone seat on one of the outcrops of the fort, affords a beautiful view of the forests below. Stretching our luck further, we moved down the road to see if we could sight the tigress again. To our great joy, as we turned a bend, we saw the tigeress climbing up from the depression. She came up and casually sat on a rock about ten metres from the road, giving us an unobstructed view. She sat preening herself, ignoring us completely. We watched her for nearly 15 minutes, and then had to reluctantly leave to make it to the main gate in time.

We trekked up the fort one day. The climb begins from Shesh Shaiya — a stone idol of Vishnu reclining on the serpent Shesh. All along the way to the top of the fort are stone idols of Vishnu in his various incarnations. There are a number of caves with inscriptions and pictures which are said to belong to the Mauryan period. The temple is quite picturesque and is devoted to Ram, Laxman, and Sita. The “Raja ka Machaa”, a stone seat on one of the outcrops of the fort, affords a beautiful view of the forests below. We saw tiger pugmarks and droppings on the fort as well. On the cliffs of the fort we could spot a couple of nests of the long-billed Vulture, with juveniles in them and saw six Malabar Pied Hornbills on a single tree. We spent the day on the fort and climbed down in time for the evening jeep.

This ride too had its share of confusions, but turned out to be the most eventful one when we saw a leopard on the kill. From the fort we drove to Badi Goofa but there the driver turned around and started moving in the direction of Sehra. While on the way to Sehra, on a hunch, we headed back towards Badi Goofa and reached just in time to watch the leopard throttle the chital. We had our share of disappointments too. Our jeep broke down and on the road we could identify tiger pugmarks which seemed quite recent. We heard the alarm call of a sambar followed by the roar of a tiger that seemed not too far away. By the time we got the jeep started, it was getting dark and we had to rush back to make it to the main gate before closing time.

All in all it was indeed the most amazing wild life wander!
Netting among Words

A presentation on bringing Indian languages on the global map through making computational translation easier was held. This presentation encouraged a bit of re-seeing the disconnection that exists between the Hindi WordNets in general and the Hindi WordNet in particular. Simply put, WordNets are vocabulary databases. Based on the concept of the English WordNet, the Hindi WordNet is a system for bringing together different lexical and semantic relations between Hindi words. The ultimate goal of Wordnet is to capture words of all Indian languages, facilitate translations and help in creating better Indian language search engines.

In the Hindi WordNet, words are grouped together according to the similarity in their meanings. For each word, there is a synonym set, or ‘synset’, representing one lexical concept. This is done to remove ambiguity in cases where a single word has multiple meanings. Synsets are the basic building blocks of WordNets. Each synset in the Hindi WordNet is linked with other synsets, through the well-known lexical and semantic relations. Semantic relations are between synsets and lexical relations are between words. These relations serve to organise the lexical knowledge base. Domains of tourism, health and agriculture benefit from it as people over the world gain easy access to information about India. Seizing this opportunity, the Government of India initiated a nationwide consortium of projects on Machine Translation (MT) and Cross Lingual Search (CLIR). Hindi WordNet is used heavily in Cross Lingual Search involving Indian languages.

Hindi WordNet is fast becoming a helpful resource for language teaching and pedagogy. Teachers of Hindi at the school level are already using the Hindi WordNet extensively. It is the base resource used by many researchers for work on translation and summarisation. WordNet also functions as an online thesaurus which helps writers and journalists. Only a WordNet stores culture-specific words and terms with their explanations that cannot be translated so easily into other languages. The Hindi WordNet is accessed daily by thousands of people. It has triggered work on linked WordNets for many Indian languages. IIT Bombay is also leading the national effort on creation of concept-based multilingual dictionaries in 13 languages, based on Hindi WordNet. This is a significant step towards development of automatic translation systems, which is currently estimated to be a multi-billion dollar industry.

Major search engine companies have acquired the commercial license of Hindi WordNet, which essentially signifies that soon, if you put a query in Google in Hindi, it will draw upon all the related documents in English or other languages that you request. The Hindi WordNet can be freely downloaded with Application Programming Interface under General Public License from Linguistics Data Consortium (LDC), University of Pennsylvania, which is one of the topmost linguistic data repositories in the world and also from LDC-IL, the Linguistics Database Consortium of India. The project team was awarded the P. K. Patwardhan Award of IIT Bombay in 2008. An International Global WordNet Conference will be held in IIT Bombay from 31st January to 4th February, 2010.

The Future is Here

Willow Garage, a Silicon Valley research group celebrated the success of their PR2 mobile robot in June 2009. PR2 (Personal Robot 2) has wheels and can cover a distance of a mile in a few hours. It navigated the company’s cramped office, opened doors, entered rooms and plugged its power cord into ten electrical sockets — using its agile arm and hand. Scientists here wanted to see how they could push the limits of hardware and software systems for robots and whether a robot could perform a certain set of tasks reliably.

Sachin Chitta, one of the people who developed PR2, and an alumnus of IIT Bombay, says about the robot, “A bunch of people were pretty nervous, including me, about what would happen, what the robot would do. People were trying to mess with the robot as it was doing its task by jumping in front of it, blocking its path, but it’s a persistent robot, it didn’t fail, it keeps trying.” Along with being persistent, it’s clever as well. If it finds a door locked, it simply moves on to the next one instead of continually trying to open it. PR2 is a completely autonomous robot who demonstrated the ability to consistently navigate indoors, open doors and plug in to regular outlets to recharge. In a 26.3 mile marathon over four days, it opened ten doors and plugged into ten sockets without fail. The robot has the map of the building. From the map it approximately knows the locations of doors all over the floor. It has a sensor that creates a 3D representation of the world around it as it moves forward, and the robot looks for patches that match information about doors. If the door is closed, it assesses where the door handle is and brings up its arm to grab the handle to open the door. While it does this, several checks happen inside the robot in the background to ensure that the robot is indeed opening a door. As it opens the door further, it simultaneously moves into the room. “There are other groups that have opened doors before,” said An-drew Ng, a Stanford robotist with several students who have gone to work for the company. But Mr. Ng also added that this seemed to be “the first robot able to repeatedly and reliably open doors and plug itself in.”

Though on the surface, it seems like a small step, it is a giant leap for scientists working in robotics. Since PR2 is designed as a platform to conduct research and build applications in mobile manipulation in real human environments, it will help many scientists to spin off ever faster into the future.

OrthoCAD : 3M Trinity

The story behind OrthoCAD is, not surprisingly, the getting together of a brilliant team of mechanical, medical and materials experts, who crossed their individual boundaries of comfort to shape a vision of saving the limbs of young patients suffering from bone cancer. In late 2003, a chance meeting of a professor from IIT Bombay with an orthopaedic surgeon at a bio-materials conference brought them together to discuss on developing medical implants for osteosarcoma patients — most of them children — faced with the choice of either amputation or unaffordable, imported prostheses. Dr. Manish Agarwal, who was associated with Tata Memorial Hospital, had developed an indigenous joint in stainless steel, but it was prone to failures by fracture. In early 2004, he invited Professor B. Ravi of Mechanical Engineering department to witness the first surgery of the latest imported joint, meet some patients and study the failed joints. For several months, they worked on the trinity met over weekends and evolved the pieces of a prosthesis. The professor of mechanical engineering learnt anatomy, the orthopaedic surgeon used computer-aided design, and NFTDC director evolved an economical manufacturing process. They put together a team of researchers and core engineers to give shape to the OrthoCAD dream. A couple of months later, they opened the abandoned Tin Smithy shed (http://orthocad.iitb.ac.in). Nearly three years down, the multi-disciplinary team has developed a completely new design of a modular rotating-hinge total knee-prosthesis suitable for the local population, a virtual testing protocol (using finite element method), a physical testing facility (by developing walking simulator machines), novel surgical instruments, a manufacturing system (with rapid prototyping, investment casting, CNC machining, surface finishing and HA coating equipment), and finally, a 3D surgery planning software to ensure the correct outcome for the patients. The team is gearing up for clinical trials of the knee joint, and planning the second phase of the project, to develop a full family of lower-limb prostheses along with surgical instruments and a navigation system.

Within a short time, the OrthoCAD project has emerged as an icon, motivating many other groups in the country to tap into the immense potential in this field. Many more trinities with multi-disciplinary teams are needed to develop the entire range of medical implants and devices, over 70% of which are imported at present.
Events and Announcements

Student Gymkhana, IIT Bombay in association with Staff Club had organised ‘Rhythm Time’ with Narayan Pararunam of Karadi Tales on Saturday, 10th October, 2009. A sing-along event, it was conducted by Karadi Pararam (an IITB alumnus) one of the masterminds behind Karadi Tales Company, which manufactures audiobooks for education and entertainment, and is also a member of the band, Three Brothers and a Violin.

Two French movies were screened, as a part of the Basic French Communication Course being conducted at IITB at the R. C. Saxena Auditorium on Saturday, 24th October 2009. They were Le Roi et l’oiseau—a cartoon film for children, at 3.00 p.m. and L’asouberge Espagnole (with English subtitles), for an audience of 18 years and above, at 5.00 p.m.

Cell for Human Values had organised a concert lecture by Pandit Nayan Ghosh, Distinguished Guest Professor, on 29th October 2009 at the R. C. Saxena Auditorium. Pandit Nayan Ghosh is one of the leading Sitar and Tabla artists of the country and will be spending a year at the Cell for Human Values, IIT Bombay. [Photo]

The Institute Cultural Night saw performances by Mohit Chauhan, Bhupinder and Mitthi Singh on 29th October, 2009, at 6.30 p.m. in the Open Air Theatre. [Photo]

IIT Bombay celebrated the Joy of Giving between 27th September and 3rd October, 2009. The Joy of Giving Week has been conceptualised and promoted by GovtIndia. The Joy of Giving Week by the Akanksha Foundation was also organised on 1st October, 2009 at the Nescafe Coffee Shack (near SJMSOM) from 12.00 p.m. to 2 p.m. and 5 p.m. to 6 p.m. The Foundation sold Akanksha lunch bags for a hundred rupees each. Every bag had a poem and a small pencil pouch in it. The Akanksha Foundation is a non-profit organisation that educates less privileged children. Since its inception, Akanksha has managed to create opportunities for thousands of children through Akanksha centres and schools. Akanksha reaches out to more than 2,500 children through after-school centres and more than 1,000 children through Akanksha-run municipal schools. Contact Akankansha at fundraiser@akansha.org for further information.

Zephyr 2009, the annual technical festival organised by the Department of Aerospace was held from 9th - 11th October, 2009. More than 15,000 students from reputed engineering colleges across the country participated in a conglomeration of aerospace-related events that included workshops, competitions, paper-presentations, debates and guest lectures by eminent personalities. Zephyr 2009 was a unique platform for the exchange of thoughts and sharing of ideas among engineering communities connected with this fascinating field.

A talk on ‘Networking India with Regional Air Transportation’ was given by Dr. Kota Harinarayana, (Programme Director, LCA, ADA) while Dr. Naveed Hassan, Vice President, Engineering and Technology, Boeing India gave a talk on ‘Global Technology Collaboration’. A talk on ‘Solar Powered Aviation — Current and Future’ was given by Eric Raymond, Head of Solar Flight who is currently a world leader in Solar Powered Aviation. In the Boeing RC Plane Workshop, teams learnt the fundamentals of building model aircraft.

For the first time in a college festival, powered paradigm was displayed on the sports grounds of IIT Bombay. The pilot had an attached engine which provided the required propulsion. A huge wing helped him to take off from the ground, providing a show never seen before. Competitions like the Machinfinity-RC plane competition and various on-the-spot events like an Aerotainment quiz, an Aerofest, a boomerang-making competition and a flight-simulator competition ensured that there was something on offer for all interests.

Avenues 2009, the Annual Business Festival organised by SJM School of Management, was held between 31st October and 1st November, 2009. The event was graced by luminaries like Mr. Ness Wadia, Mr. Rahul Bose, Mr. Prahlad Kakkar, Mr. Aijal Balakrishnan, Mr. M. Damodaran, Mr. Pramod Chaudhari and others. The event also saw participation from more than 150 B-schools across India, as well as leading corporate houses and working professionals. Mr. Prahlad Kakkar, an Ad-Guru, addressed a packed auditorium on 31st October 2009. After taking his audience through laughter, deep thought and laughter again, Mr. Kakkar’s speech concluded to a standing ovation. Avenues 2009 launched an HR event — HRIday. The event witnessed a participation of more than 100 teams across the best B-schools in India. OPERA, the operations club of SJIMOM conducted YOJNA — a case study based operations event. The Imagine it Project was back in a bid to cultivate imagination. It featured global creativity challenges and multi-platform media content, including the ‘Imagite’! Documentary Film Series. Pragyas, the business Quiz, was held at the F. C. Kohli auditorium. Around 100 teams participated in the preliminary round.

International Design Conference on Sustainability was organised from 3rd to 7th November, 2009 by the Industrial Design Centre (IDC). As a part of this international conference on spreading awareness regarding sustainability in India and the world, participants attempted to make the longest graffiti scroll with the theme as ‘Sustainability and earth’. The conference displayed the work of designers, design students and others from six continents across the world.

An exhibition titled ‘In a planet of our own’ was held at Mechanical Engineering Lawns from 3rd to 7th November, 2009. The objective of this exhibition was to commemorate the theme of sustainability as practiced across different parts of the world in all its diversity, and how they are derived as localised solutions. Public installations based on sustainability in the form of mobiles, stair graphics, wall graphics, tessellations, painted surfaces with light and shadow play, objects of everyday life took the viewer through larger-than-life portrayals into the world of elements, using themes such as Nature, Evolution of Life, Myth of Creation and the Tree of Life. They were put on display at the IDC Circle. The sculpture on Recycling is displayed at IDC Entrance. Calligraphic Scrolls had a larger-than-life portrayal of scripts, which had been painted on-the-spot on canvas by calligraphers. They showed the preserved as well as vanished scripts in Arabic, Devanagari, Modi and Roman at the Main Building, from 3rd to 9th November 2009.

from an Engineer: Making a difference in the Minerals and Energy Industries’ on 8th September, 2009.

Prof. M. Ram Murty, FRSC, Queen’s Research Chair and Head, Department of Mathematics and Statistics in Jeffery Hall, Queen’s University, Canada, gave an institute colloquium on ‘Summation of Infinite Series’ on 21 Oct, 2009.

Prof. Marc Fontecave, Head of Laboratory, Professor of the College de France and the Chair of Chemistry of Biological Processes, Member of the Academy of Sciences and an Honourary member of the Institut Universitaire de France, gave an institute colloquium on ‘Hydrogen: Water, Sun and Catalysts’ on 10th November, 2009.

J. C. Bose Memorial Lecture was organised on 11th November, 2009 during which Dr. Prokr. B. Bondopadhyay, Forensic Historian of Science and Technology, Rural World Communications, CEO, U.S.A, delivered a lecture on ‘The Bose Detector of Wireless Waves and Launching of the Communication Revolution’.

Dr. Baldev Raj, Distinguished Scientist and Director of the Indira Gandhi Centre for Atomic Research, Department of Atomic Energy, Kalpakkam, spoke on ‘An Approach to Energy Sustainability in India’ at the institute colloquium jointly organised by IIT Bombay and INAE titled, ‘Local Chapter’ on 6th November, 2009 at 4.00 p.m. in the institute auditorium.

Prof. Rolf Jeltsch, a Swiss mathematician, visited IIT Bombay from 22nd to 23rd November, 2009 to interact with students of IITB and also from other institutions. His visit was planned by the Embassy of Switzerland under the auspices of 2009 being celebrated as the year of Science and Education of Switzerland in India. The objective of this project was to conduct presentations and have interactions under diverse topics, with students of higher educational institutions (either specialised or general) and teachers.

MoUs

IIT Bombay entered into an MoU with Johns Hopkins University, USA. Specific areas identified at the time of signing this agreement include Bioengineering, Mechanical Engineering, Information Technology and Nanotechnology. The objectives of this MoU are to facilitate an exchange of students (a separate student exchange agreement was also signed), and assist in joint research projects and educational initiatives.

IITB entered into an MoU with Mekelle Institute of Technology (MITM), Ethiopia. The main objective of this MoU is to help improve the quality of engineering education being imparted at MITM and to participate in academic endeavours that are of benefit to MITM.
IITB renewed its MoU with University of New South Wales, Australia. The areas of cooperation under this MoU include exchange of students and cooperative research.

IITB renewed its MoU with University of Udine, Italy. The earlier MoU with University of Udine focused on research collaboration only in the area of Microelectronics. The current MoU focuses on faculty and research scholar exchanges, and joint research projects, with the scope having been enhanced to include all areas.

**LAURELS**

PROF. DEVANG KHAKHAR, Department of Chemical Engineering has been elected a Fellow of the National Academy of Sciences, India (NASI), Allahabad.

PROFESSORS ANURAG MEHRA and SANTOSH K. GUPTA, from the Department of Chemical Engineering have been elected Fellows of the Indian National Academy of Engineering.

PROF. ANAND PATWARDHAN, SJM School of Management has been designated as one of the co-ordinating leaders for the Intergovernmental Panel on Climate Change’s (IPCC) special report on ‘Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation’. He will be responsible for Chapter 8 of the report, entitled ‘Towards a Sustainable and Resilient Future’.

PROF. RAVINDRA GUDI, Department of Chemical Engineering has been selected for the prestigious Herdillia award for Excellence in Basic Research by the Indian Institute of Chemical Engineers. The award will be conferred in IICHE’s annual meeting in December 2009.

PROF. V. S. RAJA, Department of Metallurgy and Materials Science has been selected by NACE International as the recipient of NIGIS Meritorious Contribution award for the year 2008-09, in recognition of his contributions in the area of Corrosion and Corrosion prevention. The award is sponsored by Cortech International Pvt. Ltd. The award was presented during a recent International Conference and Exposition on Corrosion on 30th September, 2009. Prof. Raja has also been elected as a Member of NACE International Research Committee.

PROF. SUBIMAL GHOSH, Department of Civil Engineering has been awarded the Young Scientist Award for 2009-10 from Indian Science Congress Association (ISCA). The award will be given in the 97th Indian Science Congress to be held in Trivandrum, from 3-7th January, 2010.

PROF. R. MURUGAVEL, Department of Chemistry has been awarded the Materials Research Society of India (MRSI) medal for 2010. The award will be presented at the MRSI Annual General Meeting at the S. P. University in Gujarat, during which Prof. Murugavel will also deliver the MRSI medal lecture. At present, Prof. Murugavel is on sabatical and occupies the prestigious DFG Mercator Chair at Bochum University, Germany.

DR. GANESAMOORTHY, a recent Ph.D of the Department of Chemistry who did his doctoral work with Prof. Balakrishna, has been selected for the first 2009 Eli Lilly Asia Outstanding Thesis Award (Second Prize) awarded by the Discovery Chemistry Research and Technologies Division at Eli Lilly and Company, Indianapolis, USA. He is presently a Postdoctoral fellow at the University of Calgary.

DR. S. K. SANE, Former Professor, Department of Aerospace Engineering, currently the Science and Technology Advisor to Nostrum is one of the principal innovators of the Linear Wind Energy Conversion System for which the New Jersey Commission on Science and Technology and the New Jersey Board of Public Utilities, USA announced an award of $ 5,00,000 on 18th November, 2009 by approving Nostrum Energy LLC’s application for the Edison Innovation Clean Energy Fund.

**APPOINTMENTS**

PROF. RAVI N. BANAVAR, Systems & Control Engineering has been appointed Convenor, Systems & Control Engineering on 2nd September, 2009, vice Prof. P.S.V. Natraj.

PROF. RAVI SINHA, Department of Civil Engineering has been appointed Professor-in-Charge (Placement) on 30th September, 2009, vice Prof. Subash Babu.

PROF. KUSHAL DEB, Department of Humanities & Social Sciences has been appointed Faculty Adviser to SC/ST Students on 23rd September, 2009, vice Prof.(Ms.) Pushpa Trivedi.

PROF. M. RAM MURTY has joined as Distinguished Visiting Professor in the Department of Mathematics on 20th October, 2009.

PT. NAYAN GHOSH has joined as Distinguished Guest Professor in the Cell for Human Values on 22nd October, 2009.

DR. R. VEDAGIRI has joined as Assistant Professor (Contract) in the Department of Civil Engineering on 23rd October, 2009.

PROF. RICHARD PINTO has joined as Distinguished Professor in the Department of Electrical Engineering on 21st July, 2009.

PROF. K. S. VALDIYA joined as Distinguished Guest Professor in the Department of Earth Sciences on 31st August, 2009.

DR. KRISHNA N. JONNALAGADDA has joined as Assistant Professor in the Department of Mechanical Engineering on 31st August, 2009.

DR. MALAY MUKUL has joined as Associate Professor in the Department of Earth Sciences on 9th September, 2009.

DR. SURYANARAYANA DOOLLA has joined as Assistant Professor in the Department of Energy Science & Engineering on 14th September, 2009.

DR. (MS.) XIAOYU FU has joined as Post Doctoral Fellow in the Department of Mathematics on 25th September, 2009.

DR. SUNEET SINGH has joined as Assistant Professor in the Department of Energy Science & Engineering on 5th October, 2009.

DR. (MS.) MANASWITA BOSE has joined as Assistant Professor in the Department of Energy Science & Engineering on 29th September, 2009.

DR. SHAILAB KANTI SARKAR has joined as Assistant Professor in the Department of Energy Science & Engineering on 31st August, 2009.

**RETIRES**

SHRI DATTATRAY Y. KULKARNI has retired after 33 years of service on 31st October, 2009. He worked in the institute as Superintendent in the Accounts Section.

I remember him as a very punctual person. He delivered his work on time. Also, I’ve never come across a calm and quiet person who kept his cool under a lot of responsibilities. He was sincere and hardworking.

— Shri Lavande, Accounts Department.

SHRI GOPINATH T. NAIR has retired after 34 years of service on 31st October, 2009. He worked in the institute as Draftsman (SG) in the Administration Section.

He used to do his work very well. He took care of letters and ensured that all of them reached their designated receivers. By nature, though friendly and talkative, he did his work with utmost sincerity in peace and quiet.

— Mr. K. K. Assistant Registrar, General Administration.

MS. SITABAI R. KUSHER has retired after 30 years of service on 31st October, 2009. She worked in the institute as Sr. Cleaner in the Public Health Office.

She was a good worker. She worked hard and kept herself when working. She had a good rapport with her colleagues and office team.

We will miss her.

— Mr. Tambe, Sanitary Assistant in Public Health Office.

SHRI ARVIND P. BAGAYATKAR will be retiring after 39 years of service on 30th November, 2009. He worked in the institute as Jr. Laboratory Assistant in the Department of Mechanical Engineering.

He was a very sincere person. As the storekeeper of our central workshop, he had an excellent rapport with first and second year students. With the faculty, too, he was friendly, down-to-earth and honest. Our best wishes to him.

— Prof. Arinatha De, Department of Mechanical Engineering.

SHRI VOTHORA M. SALVE will be retiring after 32 years of service on 30th November, 2009. He worked in the institute as Watchman (SG) in the Security Section.

He performed his duties well, and was a tranquil person. We will always remember him as a quiet natured person.

— Mr. Vijay Kumar, Security Officer.
Send in your articles, photographs, etchings, poetry, or anything else you would want portrayed in the magazine to pro@iitb.ac.in.

(Above) These works, by the Santiniketan based artist Bidut Rai, are made of baked terracotta forms that have been mounted on a plywood base. These forms are difficult to identify for though they resemble some kind of creatures and leaves, they are not that. While the forms may be confusing and lead us to believe that the artist did not quite succeed in his attempt to create identifiable replicas of some living organisms, it is more likely that the effort is a play on the part of the artist to create a visual language. It is possible that some of the imagery is drawn from the creepy-crawly life forms that abound in and around their mud-house.

(Left) In another exploration, Shilpa Bisht, a student of visual communication, responded to the suggestion of creating an unusual visual imagery by mounting plastic taps on a blank white wall. The display had 20 blue taps and a single red tap arranged in uneven rows and columns. Again, one may look upon this as something unusual and then ask, ‘But what does it mean?’ Shilpa is reluctant to answer such a question, possibly because the visual language evokes meanings in ways that are quite different from the spoken and written language. The visual invites us to see, just as all that can be heard invites us to listen. Detaching the need for meaning from the act of seeing and the act of listening is necessary so that one might actually ‘see’ and ‘listen.’ Thus, form and rhythm, textures and tonalities are the foundations on which one may create meanings.

PHOTO-ESSAY

Compiled by RAJA MOHANTY

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