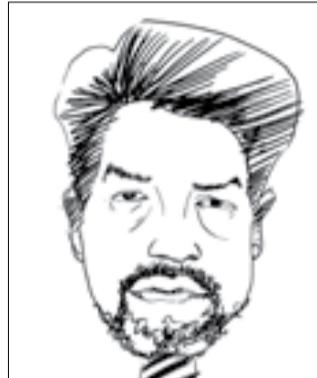




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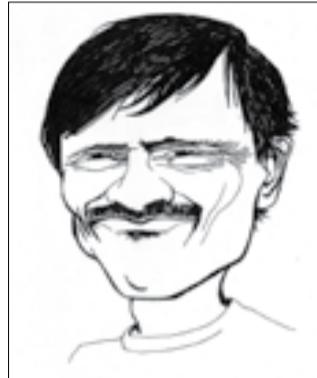
Reflections, Refractions and Reactions



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Kanchan

Several changes are being ushered into IIT Bombay by the government, while many ripples of discontent exist within the institute. An example of this change is the push towards research, while the pressures on teaching are increasing. Apart from this, we have the establishment of new IITs. This is accompanied by the feeling that one's time and efforts are being spread thinly between mentoring, taking on a heavier teaching load and pursuing research. Students, being stakeholders too, are experiencing the consequences of such changes. The IITB community (alumni, professors and students) may subscribe to different schools of thought regarding these changes. As the institute attempts to carve a new identity as a world class research institute/grad school/undergrad institution, or as a university with medical and law schools included — it seems inevitable that while some people will connect with such an identity, others may suffer a disconnect. It was time, we felt, that a platform for expressing some of these thoughts should be provided. This platform would also convey information on who could further open the doors for a more expansive and informed thrashing out of these issues, to a wider audience.

So Raintree invited a group of faculty, alumni and students from various fields to analyse and discuss IITB's evolving

self-image, under our broad idea of 'Connect and Disconnect: The world within and with/out IIT Bombay'. To help steer the discussion, we identified three principal themes: Teaching vs. Research, Fundamental vs. Applied Research and University vs. Institute model.

Discussion participants were chosen to represent different sections of the institute. Their responses were overwhelming in range and scope so much so that we have had to serialise the discussion in two issues. In this issue, we tackle the first and most demanding theme of Teaching vs. Research.

ON TEACHING vs RESEARCH

JAYA: With growing student numbers, dipping faculty-student ratios and quality faculty recruits hard to come by, the next few years will offer little respite from activities that revolve around teaching. How do people passionate about research or about 'individualised' teaching to smaller student groups see this?

PROF. ANURAG MEHRA: Teaching and related evaluation effort will go up. There is no alternative; as long as we

(contd. overleaf)

It may not be the most demonstrative of our trees, yet the understated elegance of the kanchan, *Bauhinia purpurea* (locally called the *atmatta*), makes it just as eye-catching as any of its flashier counterparts. Medium-sized at best and densely branched, the tree, a native of our soils (particularly of the lower Himalaya) lets its leaves and flowers do all the talking. The flowers, coloured lilac to reddish-purple, are fragrant and showy, their thin, arched petals like the splayed claws of a crab; no less arresting are the green, ribbony seed-pods when fresh on the tree. The leaves of the kanchan family are diagnostically cleft at the tip and camel-toed in shape, and have auspicious associations, too, at this time of year: if you're given a gold-foil-wrapped leaf by well-wishers around Dussehra, it'll most likely be a *Bauhinia*, held to betoken prosperity. Kanchans are less easy to spot on campus today than they were a few years ago, a good avenue of them having been felled to make way for sidewalks along the institute's main avenue. But fine specimens still exist at, amongst other spots, the Nescafe coffee shack and the guest house, and around now is a good time to catch them: they burst into flower between September and December, one of the very few of our trees to do so during this otherwise quiet season.

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have committed to the ministry to take in these increasing numbers, we are bound to do this. Teaching itself will suffer to some extent, and so will research. We must also remember that some faculty will get deeply involved in mentoring and teaching at the newer IITs, so that is going to chew up even more time.

PROF. SHARAT CHANDRAN: As Anurag mentions, it's not the numbers but the mentoring which has, and will *steal* some cycles. This is unnecessary robbery. But to go back to the original question, increasing student-faculty ratio has impacted us; not the professors per se, but definitely the students. The quality of learning will go down. For example, the CSE department has this rather obtuse concept of teaching 800 students of CS101 in the Convocation Hall. The Convocation Hall is neither designed for this, nor is it correct, from a pedantic point of view. Even typical class sizes of 60+ (in other classes) leave us with little opportunity for high quality education, which was the hallmark of IIT. It is all very well to embrace technology ("clickers"). Sure, you can do *some* teaching. Sure, teaching can be 'much better' than what you get in distance-education, a la the current CDEEP, which in turn is much better than what you get at other non-IITs.

But is it good enough to bring out the latent talent in our 'average' undergraduates and 'average' graduate students, to help them beat the research competition in the world? I doubt it.

So, yes, I doubt we can argue that increasing student-faculty ratio will help the cause of 'better cutting-edge education' (as opposed to more degrees for more students). Eventually, it will impact any chance that we might have for 'higher researcher quality'. However, I am not nay saying the need for better technology and teaching methods such as distance education. That's a different debate.

SUSHANT SACHDEVA (ALUMNUS): Let me offer you the view of first-year students (who must now be third-year students). I mentored them during my final year. Lectures had shifted to the LT and worse, to the Convocation Hall. I couldn't offer them any kind of rebuttal to their argument against attending the lectures held there, as it was almost impossible to hear the lecture or see the professor. It's just too easy to imagine the amount of disconnect experienced by a student if a professor discourses from the stage to a class of 800.

"I would say that if you want to do top-class research, you should continue teaching, because it makes you think." PROF. R. K. SHEVGAONKAR

SUSHIL SHINTRE (STUDENT): For me, CS101 is a great example of experimenting with different teaching techniques. Ideally, it's a bad idea to conduct a combined course for 300+ students in one auditorium. But a quick poll in my batch showed that students regarded it as one of the best courses they have undergone in IITB, given that they had no prior knowledge of programming.

The reason? They enjoyed it because of the spirit with which it was conducted, and because it provided students with the right challenges, be it those weekly assignments (never mind the fact that we amply cursed them then) or the final project. Other courses merely expected us to sit through the lectures, with added marks for 100% attendance in some of them (smiles). They made us reproduce the slides in our exams, pretty much like any other school year.

I speak from the perspective of departments like Civil or Metallurgy, which lack any encouragement to sustain interest in the technical aspects of problems, as opposed to departments like Computer Science or Electrical, which have been lucky to have retained interests of students in core subjects.

JAYA: Prof Jha, what do you think about this growing dichotomy between teaching and research due to increased pressures?

PROF. SHISHIR JHA: Whether one is passionate about research or teaching, unfortunately, beyond a basic level,

there is no encouragement from the institute. Our measure for research, as Prof. Anurag mentions, is sadly one of substituting quality with quantity, hoping that statistics will help us out: if one produces three-fold more, perhaps some quality will result from it. But history, both in India and the much idolised U.S., is littered with academic institutions that never really make this transition.

I just have a problem with the ruthlessness of an institutional culture which insists on almost one single measure of showing good research: i.e., publications in the best journals. Research for me is the research culture, not its quantification, but its qualification as a collaborative, deeply engaging pursuit, open with its results and outcome. Creating this culture requires a constant nurturing from the top and support from the bottom. New pathways need to be consciously crafted for this to bear fruit.

On the teaching side, I think the institute and our peers expect that we operate just above a certain threshold level. How much above this threshold one can or should excel, is not really important beyond the Teacher's Day awards. There is no institutional expectation: if some of us do, it is their internal motivation. We effectively stagnate here too.

Obviously, both teaching and research will suffer with the new expansion: with more ruthlessness towards research output, lesser time and more students to teach, perhaps it'll be difficult to enjoy something born from one's teaching labour.

JAYA: Prof. Shevgaonkar, do you think they can such teaching and research go together?

PROF. R. K. SHEVGAONKAR: Research and teaching are complementary to each other. I don't think a good researcher would like to avoid teaching or a good professor would not like to pursue research.

JAYA: You can't isolate one from the other?

PROF. R. K. SHEVGAONKAR: Yes. I was full time into research before IITB. After joining, I also started teaching. It was only after teaching, I realised, that I had learnt many different things from student feedback. The kind of questions students ask are very different from what you would discuss among fellow researchers. Many a times, these are simple, yet very intriguing questions. They force you to think a lot deeper. Such thinking can only sharpen the minds of both researchers as well as teachers. I would say that if you want to do top-class research you should continue teaching because it makes you think.

If you isolate yourself to doing only research, your ideas will get saturated. Teaching and research should go hand-in-hand. The problem is not with the perception of teaching. The problem with our teaching system is that it is a fairly undergraduate set. If you are provided with support for teaching, as it is provided in western countries, then I don't think you'd be "wasting too much time teaching".

PROF. SHARAT CHANDRAN: IITs had this inverse pyramid — the incoming undergraduate students were more gifted (and thus had more responsibilities) than the grad students. Teaching students, nay challenging them, becomes very important here. Instead of acknowledging this, we went on the other path of research. Never mind that other institutions like Harvey-Mudd, Swarthmore, Smith and so

"It is inane or trivial to say that everything must be done; the fact is that only some things can be done (and done well), and the core mandates of an institute like ours (teaching and research) seem to be getting even lesser time than ever before. Quality is the first culprit and it is sought to be replaced by quantity, thereby providing a false sense of productivity." PROF. A. MEHRA

"Sure, you can do some teaching. Sure, teaching can be 'much better' than what you get in distance-education, a la the current CDEEP, which in turn is much better than what you get at other non-IITs. But is it good enough to bring the latent talent in our 'average' undergraduates and 'average' graduate students, to help them beat the research competition in the world? I doubt it." PROF. SHARAT CHANDRAN

on have excellent teaching credentials. We don't want to compare ourselves to them.

In terms of pure knowledge, the current crop of professors are not worse teachers, nor were the previous lot (my teachers) more gifted teachers. However, the commitment to 'getting the best out of the UGs' has been destroyed.

JAYA: When you say 'responsibilities', what do you mean?

PROF. SHARAT CHANDRAN: I use the word 'responsible' in a broad sense. I did not use the word 'responsibilities' to indicate only teaching or research responsibilities.

My thesis is that if you are gifted, and if society invests in you (in the form of IITs), then you owe to yourself, if not to the society, to be responsible to give back what you owe: whether it means working hard in your homework assignments (without cheating), or in research, with your Ph.D resource-starved professor. Play hard, work 'harder' as they say.

Adds **AKSHAY MISHRA (ALUMNUS):** I feel that IIT Bombay is a wonderful undergraduate school. It also offers a good teaching ground for students from less privileged institutes, who could not make it into the JEE, but fought their way into M.Tech/Ph.D. I have not seen any successful application coming out of IITB (or any of IITs or IISc for that matter), finding its way from research into the marketplace. Is there any attempt to put to application any of the research over the last 50 years by an engineering unit?

The most successful products have been the B.Techs and not the Ph.Ds or research, and the research itself in most cases, is an attempt to follow and solve problems originating in U.S.

I am not putting a flame bait and nor do I intend to show any disrespect to professors or the institute itself, but in my opinion, IITB should always attempt, as a priority, to improve its best product — B.Techs. The rest should be treated as bonus. IIT's great plus point is getting scientists to teach students. This trend could not have continued forever, since scientists have now found better avenues elsewhere. So students will have to put up with poorer student-teacher ratios, unless there is an increase in better teachers again, or the bar is lowered.

Further addition **ATIT JAIN (ALUMNUS):** Agreeing with Akshay about IITB being a wonderful undergrad school, I would like to add some things parallel to the discussion here. We are already struggling to achieve — as much as we should be — on the research front. In such a scenario, the increased pressure on faculty and research infrastructure is going to take its toll. Before we discuss problems lurking around the corner, wouldn't it be better to take stock of the current scenario?

JAYA: Prof. Shevgaonkar, you said earlier that the problem with our teaching system is that IITB has a fairly undergraduate set, and if teachers were provided with support, like in the western countries, then things would be better. What kind of support were you talking about when teaching undergraduates?

PROF. R. K. SHEVGAONKAR: At the moment, we have a system where the professor is responsible for practically every

(contd. overleaf)

Unfiltered

■ JAYA JOSHI



After leaving my last job in Dubai, I had taken time off to travel to U.K., Europe and the Middle East. I met a lot of locals and other tourists during this period and strangely, IIT Bombay featured in most of my conversations with them. It was a good mix. There were working professionals, students, researchers, artists or just interesting people on the streets. To my dismay, just one or two of the many I met, had heard of IITB. Of course, those who knew about the institute thought very highly of it. But I was startled that so many people didn't know about IITB, and figured that many more would add to their numbers.

I joined this place soon after my travels. Since then, I've tried to address this disconnect I had felt while travelling, and analyse the institute's evolving self-image. The same (and a few more) questions surfaced again when we were brainstorming for this issue of *Raintree*. What is it that we want to be known for? Are we an academic institute? Or are we more research-oriented? Do we focus more on fundamental research or applied research? Should IITs remain institutes or become universities? More importantly, should we excel along all vectors equally or prioritise?

The theme of this issue of *Raintree* is 'Connect and Disconnect: the world within and with(out) IIT Bombay'. To get a closer look at some of questions highlighted above, we started a discussion. The format of the magazine is such that it provides an alternative space to a cross-section of voices and opinions. The invited panellists, therefore, comprised of students, alumni and faculty. The lead Perspective story is the transcription of this discussion. Our panellists' responses were so overwhelming, that we have had to serialise the discussion into two issues. In the current issue, we have dealt with the pushes and pulls between research and teaching and in the subsequent one, the remaining two basic questions, that of whether fundamental or applied research should be advocated and whether IITs should evolve to a university model from an institute one, have been addressed. We've not reached any one, unifying conclusion because the discussion has opened up more questions, which are pressing and real. And we, as an institute face these as critical ingredients for excellence: resource, talent and funding.

This issue also has invited pieces from two well-known names: Hemali Chhapia, Principal Correspondent, *The Times of India* and Mrs. Aruna Thosar Dixit, Former PRO. Hemali is a popular name among many of our students, faculty and alumni. Her article in *Raintree* gives a media person's snapshot of the institute. Mrs. Dixit, now in Pune, held office between 1986 and 2007. In her article, she has mused over a subject close to her heart, and many nature lovers in the campus will relate to her. Mrs. Dixit is not the only one to romance Powai Lake. A new entrant to the campus, Neha Chaudhuri, (and also one of the editors of the magazine) has given *Raintree* its first poem on the lake.

Once again, the success of the magazine depends on your contributions. We look forward to your stories — real or fictional, essays, poetry, travelogues, photographs, paintings and even cartoons. So keep them flowing.

Since the magazine addresses all sections of our little community, we received many requests from students wanting to work on *Raintree* after the last issue. We're happy to announce that we have now opened internship positions for students and young campus residents. Do get in touch with us at the Public Relations Office for more details.

Our lines are always open for your suggestions, comments or (curly hung up) observations, till we reconnect in the next issue. ■

INBOX

Letters to the Editor



Dear Editor,
The e-mail addresses of every contributor should be printed in *Raintree*.
Sincerely,
SOUMYAJIT MUKHERJEE

Dear Editor,
I am very glad to read your latest edition. Congratulations for this big success!
I would like to know the details of the printing press; because we are also thinking of coming up with our Department Newsletter. So, could you please forward me the details of the printing press? And also I would like to know more about your cost-cutting techniques; as those techniques could also be implemented to our department as well as institute newsletters.
VALENTINE FARGOSE

Dear Editor,
I must say that the latest issue was an interesting read. The only major flaw I observed was that there was no flow in the sequencing of the different sections. There were very sharp turns in the tones of two articles on the same page. So it sometimes gets a little difficult to get the sarcasm or the intended pun in a humourous piece, if one is reading it right after something serious.
Otherwise I think it gets you totally hooked... at least I read it in one go.
VAYSHNAVI GANESH

Dear Editor,
I really liked the new magazine because this is the only platform where both faculty and students are catered to (no one uses Varta). There is one suggestion that it (the magazine) may change colours with the season, say, green in monsoon, orange in autumn, blue in winter, yellow in summer and a special multi-coloured Holi /spring edition. Keep up the good work!
Cheers!
VIVEK SHAH

Dear Editor,
The current issue has come out very nicely again!!
V.M. GADRE

Letters should be sent by e-mail to pro@iitb.ac.in. We regret that owing to the volume of correspondence, we cannot publish or reply all the letters. Letters may be edited for length and clarity.



aspect of teaching. He conducts classes, tutorials, does evaluations, sets quizzes, and evaluates quizzes. Students help you but they are just physically present, taking care of small things. By and large, no intellectual inputs come from any of the TAs. For large class sizes (in IIT most of the classes are of 100+ sizes) the evaluation process itself is very time consuming. If the professor evaluates all the exams and quizzes and assignments, his full time occupied in this only, and he has hardly any time left for research.

JAYA: Do you think these functions should be divided?

PROF. R. K. SHEVGAONKAR: What we want for IIT is a pyramidal structure: Professor, Post Doctoral Fellows, Research scholars, M.Techs and B.Techs. The faculty should discuss the research with PDFs and RSS. There are many issues which an undergraduate may resolve directly with an M.Tech. or PhD student. He doesn't have to wait to come to a faculty member. With a pyramidal structure, there would be large number of people who can act as intermediaries and can take care of problems. But since we do not have the pyramidal structure, every problem comes to the faculty. So the faculty has to single-handedly interact with all — Ph.D students, M.Tech and B.Tech students, his project staff and administration. If he is spending time on all these things, then obviously time left for research becomes limited.

Now if you have this pyramidal structure, it not only helps teaching, it also helps research. When everybody's coming to you, sometimes your ideas get stagnated. If you have a distributive system the B.Tech, M.Tech students, can talk to the Ph.D student; this way you have created a pyramid, and the professor's job is simply to give ideas.

"Any student, who comes here hoping he has finally broken free from the drab schooling system, is thoroughly disappointed with the state of affairs." **SUSHIL SHINTRE, STUDENT**

SUSHIL SHINTRE (STUDENT): Taking this further, I think, the institute is still stuck with conventional formats of teaching wherein every topic, no matter how trivial, has to be covered in the lectures. Any student, who comes here hoping he has finally broken free from the drab schooling system, is thoroughly disappointed with the state of affairs. This does not hold for departments where there really have been commendable efforts by individual faculty members to improve the situation with encouraging results.

The primary reason for this mismatch is perhaps a severe lack of communication between the authorities and students. Given the fact that we have to deal with the situation (increased teaching load), I think it might help to try and adopt newer models which help in getting rid of redundancies in the system and rely more on self and peer group studies. This should be done whether or not the situation compels us to do so.

GANESH SAMDANI (STUDENT): I feel we lack infrastructure, we lack good research facilities, and pay packages to lure good faculty recruits are not competitive. The institute should provide a comparative report on these bases, comparing itself with other institutes which we are supposed compete with.

I agree with Prof. Shevgaonkar on his point that TAs should be utilised more. Another discussion with some of the research scholars from RSF is leading to the need of regrouping faculty into Researchers, Teachers and Administrators. This will be decided on the basis of the HOD's opinion and the feedback received from students. This provides time to Researchers for their R&D and in a way, students will get taught by better teachers.

PROF. ANURAG MEHRA: I will quite agree that we do not have much real support for teaching activities in terms of the 'conventional' instructor-tutors-TAs; it functions quite haphazardly: if you get a good TA then he or she can be of great help, but if not, you have to do everything yourself. A similar situation exists in most research 'groups', where we do not have the typical student-Ph.D-PostDoc-supervisor

structure, so direct supervision or interaction is usually the norm, and it is time-consuming.

JAYA: But what do you think about the interaction that becomes limited, which is important between a professor and a student?

PROF. R. K. SHEVGAONKAR: Normal interaction can take place through this pyramid, and every once in 15 days, we can all sit together and have a brain storming session. The professor can block that time and say, ok, these three hours I'm not available for anything else.

Adds **MUKUNDAN (STUDENT):** The faculty is already loaded with 'mentee' IITs, and Ph.D students in the science departments are extending their duty to these new IITs too. If peer group studies, TAs, etc. solve our basic problems, professors can give quality time to their students.

More fundamentally, the institute has to see why quality faculty recruits are hard to come by. Not only the increase in students is a big problem, dearth of quality faculty is a big one too. Is it the salary component which prevents them or is it that the system isn't robust enough to expand itself, and is dependent only on people 'committed' to the existing culture and philosophy of IIT?

YASHODHAN KANORIA (ALUMNUS): Many issues (including rapidly increasing student intake and dearth of quality faculty) are beyond the control of IITs. However, the recent curricular revision seems to be a significant move in ameliorating some problems, at least on paper. I had anticipated that changes would be good for both students and professors. It would be very interesting to hear the experience of professors and current students with the new curriculum.

JAYA: Yes, another question worth addressing is: has the recent curricular revision really cleared more 'space' for research, as it was meant to?

PROF. ANURAG MEHRA: It has, in some way, but the burden of minors and honours courses kind of make up for it, so from the faculty's angle, not much has changed. For students, the newfound flexibility should be an advantage because now only some students who go beyond the vanilla course have to slog; the others should have it 'cool(er)'.

PROF. SHARAT CHANDRAN: This is really for the students to answer. It is too early to make any predictions, but early trends are disappointing.

"I just have a problem with the ruthlessness of an institutional culture which insists on almost one single measure of showing good research: i.e., publications in the best journals." **PROF. JHA**

SUSHANT SACHDEVA (ALUMNUS): I was part of the student team that conducted a student survey and gave suggestions to the committee. I believe that of the potential that change held, only 75% of them were converted to the committee's 'goals', 50% of them were realised in the recommendations made to the Senate, and only 25% of them were implemented in practice.

I disagree that the committee ever had the vision of clearing up space for research. There was an implicit goal to permit talented students to take the plunge into research earlier. With regards to faculty, it was always clear that minors courses/honours courses/duplicate offerings of the same course over two semesters was only going to make them more hard pressed for space for research.

SUSHIL SHINTRE (STUDENT): Although I'm not undergoing this curriculum, I hear from other students that it has worsened the situation. They've to study more than they can handle in one semester, due to a revamp of the entire structure. Besides, this flexibility has become pointless, given the kind of competitive environment that exists; students have to take specific minors only because others (within a similar CPI group) are taking them, which destroys

"I believe, research and teaching pressures will mother some new innovations in teaching techniques."

GANESH SAMDANI, STUDENT

the purpose of the idea. This may not be true for all, but by and large, this trend holds true.

GANESH SAMDANI (STUDENT): I can't answer this question directly, as I am a PG student, but as far as PG curriculum goes, it is research-oriented (as per the PG students' survey on R&D at IITB). The new curriculum for UGs offers more chances for supervised learning and multiple R&D projects. The option of a full semester industrial or research internship outside the institute will obviously give space for research.

JAYA: What has this revision's impact been on SOM?

PROF. SHISHIR JHA: Even though at SOM we don't have a UG programme, we've not had much of a choice; we've had to float several minor courses and address the MHRD student increase. So I guess we are also joining the main IITB teaching league on this score.

JAYA: How do faculty passionate about teaching view this added pressure on research?

PROF. ANURAG MEHRA: Those of us who like to spend time on research do find it a waste of time to indulge in more teaching. More interestingly, there seems to be strategic confusion at the highest levels: on one hand, the ministry and government want us to teach more (the expansion is everywhere) but they also expect us to be more productive in research. The institute itself seems to be confused as to where to go, now that we have even more 'distractions' (some will call it enrichment!), like distance education and incubating companies. It is inane or trivial to say that everything must be done; the fact is that only some things can be done (and done well), and the core mandates of an institute like ours (teaching and research) seem to be getting even lesser time than ever before. Quality is the first culprit and it is sought to be replaced by quantity, thereby providing a false sense of productivity.

PROF. R. K. SHEVGAONKAR: In the early years, people taught students and they were excellent professors. They had little interest in research. Since the eighties, the faculty has increasingly been doing research. But recently, many people who've come to IIT think teaching is a waste of time. This is not good. If you don't want to teach then you shouldn't be at IIT. This is an educational institution, and therefore teaching is important and you have a responsibility towards students. Of course, there has to be a balance between teaching and research.

For quality research, a professor must have enough free time to think. So, people should realise that teaching at different levels has to be of different types. A professor who expected to give a good lecture should give a good lecture. Otherwise, things should be handled by Ph.D students, M.Techs or the TAs. Whenever they get stuck, they should come to the professor. But, by default, they should sincerely try to solve the problems by themselves.

PROF. ANURAG MEHRA: I think the debate here was about 'excessive' teaching versus research and not of teaching versus research, per se. So what Prof. Shevgaonkar says is kind of reasonable and self-evident (that teaching and research complement each other). My comments and answers have been in the perspective of teaching overloads. I like teaching very much but that does not mean I am willing to do any amounts of it. The question is of balance, not conflict. So it is alarming (and hilarious, if you view it as an external observer) that we are expected to do lots of teaching (which now includes teaching to the outside world through various government sponsored initiatives like ICT, NPTEL, CDEEP) and lots of research (and that too really 'good' research).

PROF. SHARAT CHANDRAN: IITB did have a good teaching culture. But I feel that it has largely been destroyed. I have

"We, as an institute, do not have a concrete vision. For concreteness, let's say, creating a first-hand priority between being a research institute or a school, or the choice between focusing on being a great undergraduate school or a graduate school."

SUSHANT SACHDEVA, ALUMNUS

argued earlier that large class sizes are not great for learning. They are also not great for producing good research. But research pressures have also been instrumental in destroying the teaching culture.

Research culture — of the type to take on the world — takes time. I think it is too early to claim that IITB has a research culture. Net-net: we are neither here nor there.

JAYA: How do alumni view this trend?

SUSHANT SACHDEVA (ALUMNUS): This is actually a semi-question to the professors. My impression is that there is no institutional pressure on research. All the professors I've known close enough to see how involved they have been in their research do it because of their own burning drive to produce quality research work. I've been told in as many words by a professor that the institute puts no pressure for research, maybe in a positive sense, so as to let him have enough time to solve hard questions for years on end.

Personally, I do not think that IITB, as an institute, has a research culture. If this culture is present in some parts of the institute faculty, it is shockingly absent in the body of undergraduate students. Unfortunately, all my opinions have been strongly accentuated after becoming acquainted with the research culture in U.S. universities.

Another issue that worries me is: we, as an institute, do not have a concrete vision. For concreteness, let's say, creating a first-hand priority between being a research institute or a school, or the choice between focusing on being a great undergraduate school or a graduate school. As an institute building its fledgling reputation, I believe we should have focused more on our core strengths, and built a foundation out of what I believe is a shaky 'brand-worth', built out of two decades of successful IITians in the Silicon Valley. On the other hand, over my four years, I have seen so many expansions of every kind, just as Prof. Sharat pointed out; ignoring the mind-numbing resource crunch that we have at our hands.

SUSHIL SHINTRE (STUDENT): I am not sure how your point came up, Sushant, but my own opinions could not have been better expressed by what you've said. Right from the day I entered the institute, I've wondered what the institute has been trying to achieve. Frankly, in my three years, I haven't seen any significant activity from the authorities, except for the one rather controversial curriculum change. Every single day is taken as it comes, with no particular direction. If we really have an aim or a mission, shouldn't we be experimenting with new initiatives, shouldn't we have continued interaction with the elements involved and improve upon the ways and means we adopt? It is really surprising to know that I have undergone the same curriculum as my mentor, who was senior to me by two years.

An excellent example for this inactivity is the lack of any formal feedback from students on the revised curriculum, other than the one feedback/course evaluation form which is handed out at the end of every course.

JAYA: What is the view of other students on this?

GANESH SAMDANI (STUDENT): At IITB, some form of pressure is always present. Increased pressure on faculty may affect them. But as a student, I believe, these pressures will mother some new innovations in teaching techniques, and

some of them would be worth following. And according to survival of the fittest, we shall generate better teaching practices, which may focus mainly on supervised learning or more involvement of peer-to-peer teaching.

MUKUNDAN (STUDENT): The base requirement of teaching translates to one-semester-long courses (I might be wrong). But if it is so, and if we couple that with many faculty members who do not take core courses/offer very few/no electives, there is a huge mismatch in how the teaching and research allocation is done. The research pressure is skewed in the institute, as only a few have 'real research' pressure.

JAYA: And you, Prof. Shevgaonkar, to conclude, how do you regard both?

PROF. R. K. SHEVGAONKAR: Ultimately, I feel teaching and research work very well together if a proper structure is provided to make adequate time for both. And IITs should try to build such a structure.

CONCLUSION

As is evident, this discussion is just a beginning for a wider debate on the goals the institute is striving for, its stakeholders' aspirations and sharp tugs from different directions of teaching as well as research. Rather than ascribe any conclusions or posit quick fixes, we would like the dialogue to be taken further into the public arena, because these issues have far-reaching implications for the present and future of IITB. We've all talked about these things amongst ourselves (faculty with faculty, students with students), but rarely with each other. Such a debate is important, not only to make cross-connections in our age of fast-paced expansion, but also in building newer identities of IITB that all members of this institute can hopefully identify with. ■

The views expressed in this article are those of the participants' and do not necessarily represent those of IIT Bombay or the editorial board of Raintree.

IN THE WILDERNESS



The Little Cormorant (*Phalacrocorax niger*) is a member of the cormorant family of seabirds. Found in the lake side area of our campus, the bird can dive to considerable depths, but usually feeds in shallow water. Photograph: Yogesh Murarka (Dept of CSE)

Local Migrations

DR. MANISHA RAO, Lecturer in the P.G. Dept. of Sociology, S.N.D.T. Women's University, and a Campus Resident

In a gated community like ours, a small section of the population makes the great commute everyday to attend to their jobs and chart out their own path in the city. They appraise the growth within and beyond the campus, bringing experiences of the outside world with fresh eyes for the benefit of those who get cloistered within the campus.

Today, under one of the Gulmohar Cafe umbrellas and surrounded by the cacophony of the rain, I made friends with such a person. To my pleasant surprise, she walked in tall, humble and slightly nervy. Coffee comfort drew out her enthusiasm for the campus' beauty, her love for Delhi and a joyous acknowledgement of the spirit of Mumbai. Her kohl-eyes lit up with mischief when she talked about the local trains, her hands whirled in the air while discussing the campus' tree cover, and we found ourselves laughing over crocodiles and snakes. We spoke about everything other than teaching, which is what she does. The impression I came away with was of a person very aware and protective of this precious green island, grateful for being a part of it and excited to always launch on her own into the sprawling city of Mumbai.

Dr. Manisha Rao is a part of our immensely varied resident community, that loves making journeys to the city for work. She shares some of her experiences as someone who sees worlds within IITB and beyond it every day.

Introduction by NEHA CHAUDHURI

How long have you been living at IITB? How did teaching at S.N.D.T University happen?

I've been living here for 10 years. We shifted to IITB in 1999, when Kushal, my husband, joined as faculty in the Humanities department of the institute. I got a job as a Lecturer at the P. G. Dept. of Sociology, at S.N.D.T Women's University, Churchgate within six months. I worked there for two years, but that was temporary. Since I come from a family of teachers and engineers, I have always wanted to get into the teaching profession. After completing my Ph.D, the teaching position at S.N.D.T. University was advertised again. I applied and got the job.

Tell us about your daily journey outside and what excites you about it.

When I'm out in the locals [trains], I feel liberated. I feel empowered, specially when I meet other working women. They're all working, managing kids and homes, and they're with you on the ride to or from work. But in the local, they leave it all behind and are on their own as individuals, sharing some happy or sad event with their 'train' friends or discussing their husbands or boyfriends. I've even heard mothers advising their daughters in surreptitious voices over their cell phones, on how to manage themselves in their in-laws' houses. Sometimes, there is just joking and singing, discussions on the latest film, book, recipe, dress, jewellery, or talk about property prices or the share market.

"When I'm out in the locals, I feel liberated. I feel empowered, specially when I meet other working women. They're all working, managing kids and homes, and they're with you on the ride to and from work."

It's really nice to see women being their own selves. It is an eye-opener, and it is also great fun to travel with so many people, all going somewhere together. At that moment, you share the same space (or lack of space!) with them. There is a feeling of being in the struggle together. One feels active and alive. If you're lucky enough to get the prized window seat, there's always the ever-changing cityscape to look at. You see the high-rise buildings and slums. You can also look right into people's homes. You can see children jump into nullahs with gay abandon and people washing clothes in the same place. Not to be missed are the vegetable patches growing along the train lines. There's never a dull moment in the locals.

The best part of the commute is coming back to this serene and tranquil isle that is IITB. There's even a two-degree drop in the temperature here. Once on campus, I thank the heavens for this beautiful green canopy under which we all live. It's great to go out and even better to come back. You can interact with nature. We really have to preserve this kind of environment.

How much time does it take you to reach office? And what is the worst part of your commute?

It takes me three hours in total — an hour and a half from point to point. I begin by taking a bus from here to Kanjur Marg Station. Public transport in the city is very efficient. Sometimes, I change trains at Dadar and just walk down to the University from either CST or Churchgate.

Initially, the biggest challenge was travelling — deciding which train to take, which station to change trains from, wondering whether I'd be able to manage in thick crowds, and so on. But once you start, you learn to survive, like every other Mumbaikar.

During my first year of working, I remember, I got stuck on the train due to heavy rains. I never managed to reach the University, even though I had started from the campus at eight am. I only got to Byculla at two pm. So I decided to just go back to the campus. On the local, I met a girl who stayed somewhere in Mulund, but she knew her way around and so I went along with her. We changed trains, got into buses or just walked until we reached Ghatkopar (at that time all the station and place names were still new to me). I only knew Ghatkopar was close to IITB, and that from there I could somehow get to Powai. All along the way, people were very helpful, coming out of their houses and offering tea and biscuits to strangers. By the time I got back home, it was eight in the night. That way, Mumbai is a wonderful city. People are helpful; you don't really fear going out. The spirit of Mumbai is amazing. Everyone learns to survive here.

The worst part is getting stuck in a local in peak hours. It can be quite tough when the trains stop in between, or are delayed during peak hour traffic. You have to elbow your way into heavily packed trains, everyone gets irritable, and you are sweating and standing on one leg. And in the rains, nothing can be worse than being stuck in a local.

Have people also told you they don't know about IITB? What kind of image do people have of IITB? What amuses you about this image?

I have not met people in Mumbai who don't know about IITB. We have a strong image that is already present in the minds of the people. People expect the engineers here to solve any technical problem, just like people expect doctors to cure any disease. IITB is this rarefied place. When I tell people that I stay in Powai, they ask, "Hiranandani?" and I say, "No, IITB", and there's a visible change in their expression and tone. It's amazing to see how they look at you with awe. If they have children, they ask, "Oh, do you know how to get into IIT?" They think our kids easily or automatically get into IIT. That amuses me. I have to tell them it's not like that; our kids have to sit for the exams like all others, and there's no guarantee they'll get through simply because we're already here.

Does the ordinary public know what goes on inside IITB?

Not really. The public has a general idea of IITB being an excellent engineering college. It's "the place to be". But they probably have no idea of the kind of research that goes on in here, the incubating system for ideas developed at SINE, the innovative ideas used to help in rural development through CTARA. They're surprised to know that IITB has a Humanities department. I feel that having one is important because it gives students that extra edge, making them sensitive individuals who can think on their own. The nice thing about IITB is that we're trying to build people who are aware about social issues.



However, IITB is not only about studies and research. Extracurricular activities, too, make this place what it is. Mood Indigo and Techfest have become brand names by themselves. Besides that, there are PAFs, the musical fest, (and more recently) dance fests and sports events. Most people outside IITB wouldn't know about all this.

What is the advantage of working inside the campus?

Inside the campus, most people have a slow-paced life. You have time to get up in the morning, take a stroll or jog along the lakeside, come back for lunch and go back to work. That's the advantage of staying here. You have classes during the day, at night, etc. You can have better interactions with students because of the campus' residential nature.

Earlier, people in IITB liked to stay inside the campus, and connectivity with the outside world was very less. Now, this is slowly changing. But we campusites still can't take too much of the fast-paced outside world.

There was a Film Club here earlier, and we used to watch movies every Friday night in the Convocation Hall. Now, with the Hiranandani complex and multiplexes nearby, people would rather go out to catch a movie. They are no longer confined to the campus. Interconnections with the outside world have increased. The whole thing has changed for the better. A lot of our young faculty have more interaction with the outside world. They do not wish to lead closeted lives.

In what ways are people living at IITB for a long time disconnected from the world outside?

Many people are not in sync with the state of affairs outside. We are quite pampered (not that I'm complaining). Take for example, the power and water cuts happening in Maharashtra and Mumbai. We rarely face any power and water cuts. If there is an unscheduled power cut, we get quite hassled. People living outside have a tough time with such things, but because we are protected from it, we don't really think about these problems. We can contribute our bit by being conscious of the day-to-day reality and by avoiding the wastage of water and electricity. It's not like everyone is living in their own world; a lot of people are already conscious of social issues. But some of us are still not aware, because it's easy to ignore them while staying inside the campus. We're protected from it all. It's probably

"When I tell people I stay in Powai, they ask, "Hiranandani?" and I say, "No, IITB", and there's a visible change in their expression and tone. It's amazing to see how they look at you with awe. If they have children, they ask, "Oh, do you know how to get into IIT?" They think our kids easily or automatically get into IIT, and that amuses me."

because of all our facilities that people here can produce such great work. In that sense, we're all very lucky. Outside, you're confronted with so much poverty. Everyone is trying hard to make ends meet, and you feel humbled for everything you have.

What are the disadvantages of staying at IITB?

We're cut off from being in touch with different things. Distances and the commute to the city are quite inhibiting. Even though I commute every day, if someone asks me to come out on the weekend, I'd probably think twice. So in that way, we lose out on quite a lot of cultural activities happening in the city. A lot of things are happening which you would want to be a part of, like the Kala Ghoda festival, and other activities. It would be great if we could get some of these activities to take place inside the campus. Like last year, we got puppeteers who had performed at Kala Ghoda to stage a show in the campus, and the P.C. Saxena auditorium was packed. It was an amazing experience. I'm sure we can do more of that.

What do you like best about staying in the campus?

I like the serene surroundings. IITB has a naturally undulating landscape, but space has become a big problem. Even

as we expand, it's imperative that we keep the tree cover intact, and also preserve the lake. The initial impression that many new people have of here is of residents living in a wildlife sanctuary. We co-exist peacefully with snakes, crocodiles and leopards. (laughs) IITB residents have a good support system that runs on smooth wheels. However, the pressures on our system are increasing and the infrastructure has to hold things up. There is a feeling of oneness with the community. People staying outside miss out on the feeling of doing things together at festivals, encouraging talent in children, trying to develop a zero-waste campus, etc.

Dr. Rao envisions a campus redolent with individuals who care about this rare home, not only because it is a refuge and a boost to the academic life, but also because it is one of the few places in the city with such unfettered tree cover. She talks fondly of the birds that wake her up in the morning and of the splashing colours of the evening sky that rejuvenate her after a hard day's work, gifts which all of us enjoy by the placid lakeside. ■

HIDDEN CORNERS

Unmasking the Public Health Office

■ ISHAN SHRIVASTAVA, Second Year Undergraduate

For obvious reasons, I had never bothered to look around when walking towards H-11 until a couple of days back, when I visited the Public Health Office, situated between H-8 and H-11. Medicines, syringes, crutches, stretchers, wheel-chairs, oxygen cylinders and obviously the H1N1 masks were what I expected in the small and well-maintained office. *Ignorance is bliss*. It turned out to be embarrassing after Mr. Bhagwan Patil enlightened me about the fact that the PHO does not provide health services; on the contrary, it endeavours to prevent us from requiring them.

The PHO's major task is to ensure regular cleaning in every erect and not-so-erect building in the campus. For this purpose, it outsources the majority of its workforce. Our inside source makes a statement: "The workers are hand-picked, keeping in mind that they should not cross the maximum width and height standards in order to ensure effective house-keeping in the luxurious hostel rooms". The PHO also ensures the daily collection and disposal of wastes (non-living). Often, students are found looking for quiz papers in dustbins, thrown as a result of their initial frustration at the professors, the courses, the system and at times the Indian cricket team's loss. They obviously fail in their quest as the PHO makes sure that all the bins are cleared every morning. The Earth Club of IIT Bombay, in coordination with the PHO recently installed four dustbins, adding to the earlier 35 bins already situated on the roads. It is also looking for possible disposal solutions of e-waste, which comprises of the computer hardware parts (and not the useless files circulating in the institute).

Even after frequent anti-malarial activity, one can ask for personal pest-control service. These services essentially deal with cockroaches, rats, ants and bedbugs and not unwanted guests or neighbours. To prevent the budding

of these species, the PHO carries out checks for stagnant water. Being associated with one of the finest technological institutes, it uses efficient methods for the treatment of water collected from kitchens, toilets, etc. for their re-use.

A long time ago, a proposal was made to nominate a General Secretary of Dog Affairs. When no one was found qualified enough to give justice to this post, the PHO stepped in.

A long time ago, a proposal was made to nominate a General Secretary of Dog Affairs. When no one was found qualified enough to give justice to this post, the PHO stepped in. Since our very well-facilitated hospital does not offer any veterinary services, the PHO sends them to NGOs and to the Municipality for their treatment and sterilisation. As these canines have become an integral part of our lives, institute-wide demonstrations can be seen whenever any student wishes to get rid of them. When asked about the nuisance created by monkeys, the only response was an innocent smile from Mr. Patil.

The PHO not only fights against our common enemies, it also ensures that we have a healthy environment to carry out our activities. A few endeavours in this process have been tree plantations, developing new gardens and also conversion of dumps into gardens.

As Mr. Patil would love to say, "Tum mujhe kachra do, main tumhe bageecha doonga!" ■



THE WAY WE WERE

Rama-Yarn: Colour Blindness Redefined

■ RAMMOHAN MENON (RAMU) Class of '82

This happened in our IIT interview after JEE. During the medical test for colour blindness, if you remember, we had to identify the numbers embedded in the dotted design on the page of the book. This stranger in front of me kept giving confident answers as the doctor flipped through the pages. First, he said 20, then 25, 14, etc. very confidently.

The doctor was shocked. Never before had the doctor come across someone who rattled out numbers so fast,

so confidently and so totally wrong. He wondered what the matter was and asked the guy what he saw. Our man promptly pointed out to the corner of the book where we all could see printed page numbers. ■



Haathi Mere Saathi: A Saga of Elephantine Proportions

■ From BAKUL DESAI'S (IITB Alumnus, Class of '82) collection of *Bakul's Bakwaas*

For our final year EP (Entertainment Program), H-4 was paired with H-10 and we came up with the theme of 'The Court of the Crimson King.' The points awarded for publicity that year were quite high. During tiffin-time, when the guys were throwing around ideas for posters, I jokingly suggested that maybe we should get an elephant. We could get the Queen and the King to ride the elephant with a retinue of courtiers, drumbeaters, et. al. in a procession and present this *tamasha* during the Friday evening movie-time at Convocation Hall, when most of IIT would be headed there. Everyone laughed, except the soc-sec Jetu (Arun Jethmalani, '83 batch) who wanted to know, "who will get the elephant?"

So, my impulsive ideating meant that I was in the market looking for an elephant.

First stop, the head trustee at the Ramakrishna Mission temple in Powai. They sent me to their temple in Juhu with a written request to "show" me the elephants (I got enthused by his use of plurals). But all I got to see were two beautiful elephants at the entrance of the temple, carved in stone. Next stop, a Mr. Kelkar, who was in charge of registering animals and pets at a rundown BMC office at Sakinaka. He made me sit down, offered me tea and told me that he could provide me hundreds of elephants. "But they are white elephants. Our government is full of white elephants", he joked, and laughed heartily while I cried.

The guy at the Jogeshwari police station was an equally affable man. When I told him I was looking for an elephant, he made me sit down and drew me an elaborate route map, complete with traffic signals, to where I could get an elephant. After 15 minutes of drawing, when I saw his artistic masterpiece, it was a roadmap to the Byculla zoo! He also collected a handful of constables and told them, "This guy is asking me for an elephant's address, so I'm sending him to the zoo." They all laughed while I cried some more.

Finally one night, when we picked up a bottle from RLC to drown our sorrows and figure out ways to cope with all the jeering and barbs that awaited us, we removed the newspaper that covered the bottle and VOILA! There was an elephant staring at us. It was a photo of a procession of someone's birthday bash, where the birthday boy was sitting atop an elephant. We hadn't even started drinking and were already seeing elephants.

So we trooped to the telephone exchange in the dead of the night, and Vasu called up the Tamil newspaper editor (it was a Tamilian newspaper). We discovered that editors do not take kindly to be woken up at night and asked, "Who was sitting on the elephant two days ago, and what is his number and address?" Despite some swearing, the editor mentioned that the guy atop the elephant was



named Vardaraja Mudaliar. Mr. Editor was amazed when we asked for the gent's address. Hadn't we heard of THE Varda of Antop Hill? For starters, we did not even know where Antop Hill was, much less who this guy was. The plan now was to go to Antop Hill, look for Varda and tell him to please get us this pachyderm and that we would bless him dearly for his kindness.

At the top of a hill, surrounded on all sides by his cronies, was Varda sitting on a chair watching his minions play carrom. My friend Sukumar started the conversation in Tamil, and soon Varda subjected me to a long, hard stare (with me blissfully unaware of the fact that this was the dreaded Don Vardabhai, who was into illicit liquor, drugs, prostitution rings, extortion, *supari* killings — the works). His photographs had graced magazine covers like *India Today*, *Sunday* and the *Illustrated Weekly*, and if I remember correctly, I had gone to him to ask for an elephant! I had even thought of pinching his cheeks!

Anyway, to get back to my saga, after staring at me for a full five minutes, Vardabhai started laughing; a mellow chortle that turned into loud, uncontrollable stomach-churning laughter. His henchmen were laughing with him (a.k.a. Gabbar and gang in *Sholay*), and soon I was laughing too (like Kaaliya). Later, Sukumar translated what

Varda had said, "People come to me for everything. They say, Vardabhai, give me *naukri*. Some say, Vardabhai, give me *chokri*. Some say, Vardabhai, give me a five lakh rupee donation. Some say, Vardabhai, kill my enemy. Women say, Vardabhai, become the father of my child. But NOBODY has ever asked Vardabhai for an elephant." Vardabhai was amused enough to ask his deputy Selvan to call an elephant vendor in Borivali for us, and also got him to reduce his hire charges.

Last lap, Borivali. After much haggling, we closed the deal at Rs. 500. We materialised Rs. 100 from thin air (quite like Sai Baba) and agreed to pay the balance on Friday evening. And so, the elephant arrived 30 minutes late, we all sang and danced and it was a sensational hit. Prof. Subhash Babu from HSS saw the commotion and jostled his way through the crowd, sought out Fish and asked him, "What is this?"

Fish looked to where the prof's finger was pointing and remarked casually, "Sir, that is an elephant." ■

People mentioned in the article are Queen: Mukta Ghate, Class of '83 and King: Sameer Vijaykar, Class of '84, Vasu: R Vasudevan, Class of '82 and Fish: Ashvin Iyengar, Class of '82



THE WAY WE WERE

Humour: Light my Fire

■ FISH, ASHVIN IYENGAR Class of '82

Ashvin Fish Iyengar always wallowed in poverty. He would walk up to a stranger and say, "Hey, you got a light?"

The poor victim would reach for his pocket and give him a matchbox. Fish would ceremoniously light a match and turn to the guy again and say, "Hey! You got a fag too? I don't know what to light this match to."

And believe it or not, it actually worked. Fish got more fags than blows on his face for his trick. ■



REVIEW

Four Decades at IIT Bombay

■ PROF. ALI Q. CONTRACTOR Dept. of Chemistry and Dean Alumni & Corporate Relations

Book reviewed

Four Decades at IIT Bombay: Reflections and Recollections by S.P. Sukhatme, 2009.

The celebrations may be over, but the nostalgia still lingers. One of the things of lasting value to emerge from this party is the history book, *Monastery, Sanctuary, Laboratory – 50 Years of IIT Bombay*, by Rohit Manchanda.

A spin-off of this book is *Four Decades at IIT Bombay: Recollections and Reflections*, by Prof. S. P. Sukhatme. The proposal to undertake writing a book that documented the birth and early years of IIT Bombay came from him, and it was his constant but gentle prodding that saw the book's light of day during the Golden Jubilee. As part of the research for writing the 'history book', extensive interviews and conversations were conducted with several personalities who have been associated with the early years of IITB. The interviews, spread over several sessions, have been brought out in the form of an elegant and slim volume, available for private distribution. I was fortunate to have received a copy from Raintree for reviewing and then a few days later, another autographed copy from Prof. S. P. Sukhatme himself.

The book is very readable; I was able to read most of it on a flight to Delhi and back. (Writing the review, however, is taking much longer). Prof. S. P. Sukhatme joined IIT Bombay in 1965, shortly after his doctorate from MIT. He describes the welcome he received on arrival from the Director, Brig. Bose and the institute as the reason why IITB has been successful in attracting and retaining very good faculty. In addition to this, the collegial environment, the sense of dedication in the faculty and staff and the excellent students have compensated, more than adequately, for other shortcomings such as a lack of high-end equipment and other infrastructure.

Prof. S. P. Sukhatme has had the opportunity of interacting closely with all the Directors of this institute before he himself took charge in 1995. He has provided engaging but honest little portraits of each one of them; while he admires Brig. Bose for his administrative abilities, he does not hesitate to add that 'he was not a research-oriented person'. Prof. Kelkar, of course, impresses us as a 'visionary' — those of us who had the privilege of hearing him as students will agree with this. Though Prof. Kelkar was instrumental in preparing the blueprint and recruiting the first batch of faculty members as the Planning Officer, he went to

IIT Kanpur as its first Director in 1959. He returned as Director to IIT Bombay in 1970, and in the four years that he spent here, he initiated seminal changes in the academic programme, with major emphasis on teaching Sciences and Humanities. One of the less pleasant consequences of this reform (as far as students were concerned) was 'continuous evaluation', with weekly tests on Monday mornings and also the creation of the office of Dean (Academic Programs), who is regularly featured as a villain in skits (what are now rather grandly known as PAFs).

Prof. Kelkar's second major initiative was the creation of the office of Dean (R&D) to give a thrust to research and development activities. This, of course, was by no means a one-man effort, and one gets to see the dramatis personae, Prof. S. P. Sukhatme being an active participant in both initiatives. Along the way, he provides engaging profiles of some well-remembered personalities like professors Hira Lal, Malik, Bedford, Hariharan, Madhavan, Narayananmurthy. He does not fail to recognise the contribution of our members of staff. Our former Registrar, Mr. D. K. Ghosh, who we still call upon occasionally for guidance in administrative matters, Mr. Kasbekar, who our alumni will remember as a tall gentleman with a military bearing and a booming voice, directing the setting up of the Microelectronics laboratory (the perfect foil to Prof. Juzar Vasi) and Mr. Randelia are all recognised among the 'unsung heroes' of IIT Bombay.

Prof. S. P. Sukhatme's description of his own term as Director is very illuminating; one gets to see the systematic way in which he planned and carried out his ideas. Thus, there is little attempt to dissemble when he says, 'there are very few people who had been appointed to the Director's

He [SPS] has provided engaging but honest little portraits of each one of the Directors before taking charge himself, thus while he admires Brig. Bose for his administrative ability, he does not hesitate to add that 'he was not a research-oriented person'. Prof. Kelkar, of course, impresses us as a 'visionary' — those of us who had the privilege of hearing him as students will agree.



job and brought the kind of experience which I had. Since I knew that I was going to be the Director, I had time to plan out my actions.' But those of us who have the privilege of knowing him also know that this self-confidence has never degenerated into cockiness, and this should be a model for our new recruits.

The seemingly small changes that he brought in have had a major impact in defining how we see ourselves and how others see us. A case in this point is the Convocation ceremony, that has evolved into a well-choreographed programme with students dressed in attire more suited to our culture and climate, with uttaras in colours defining our various academic streams. Another change is establishing the Alumni Day. Celebrated on the last Sunday of every December, the Distinguished Alumni and Service awards are also presented on this day. A reconnect with our alumni was possible due to several reasons, but Prof. S. P. Sukhatme being Director was certainly one of them.

His penchant for clarity, accuracy and precision comes through even in a book of this nature. For example, the results of the Brain-Drain study are recorded as, '30.8 percent were settled abroad and 69.2 percent were in India' — where else could they be? As if this was not good enough, he adds further that 'the percentage error in this result was estimated to be plus or minus two percent.' I wonder how a journalist would have reported this!

For those who have been or are a part of the institute, this book offers interesting insights into its functioning, and how major initiatives and changes are undertaken. For our newly recruited faculty, this book provides a vision of what is possible, and I urge them to read it. After all, it is a record written by one of our most successful faculty members. ■



Lenses and Mirrors (Chapter 4.8)

As part of our ongoing series, the following is an excerpt from *Monastery, Sanctuary, Laboratory - 50 years of IIT Bombay*, written by ROHIT MANCHANDA

This issue's excerpt, in keeping with its theme, comes from a chapter titled "Lenses and Mirrors", which traces the conflicts and correspondences between the ways IIT-Bombay has seen itself and has been perceived from the outside, and what this has meant for the Institute's psyche over the decades. Reproduced below is a passage that looks at these mappings over the decade between the mid-1980s and the mid-1990s. During this troubled phase, internally, IIT-Bombay's R&D effort was languishing, while externally, the IITs as a group had to square up to harsh criticism on two counts: one, for failing to stem the "brain drain" of their graduates; two, for leading ivory tower existences, indifferent to the larger socio-economic needs of the nation. Read on for more...

'EVEN YOUR 1500TH STUDENT DOES NOT JOIN US'

Chapters 3.2 and 3.3 outline how, as the 1970s blurred into the 80s, it started to dawn on the Institute that all hadn't shaped up as it should have done. Before its very eyes, its dreams had soured. There was the unremitting funds crunch, the fast collapsing infrastructure; and, with IIT-Bombay's financial fortunes tied intimately to the nation's, the frustrations of its hopes in R&D. It was during this troubled phase that another unhappy fissure appeared: between the three connected goals that had been foreseen for the IITs, of education, research and extension. Having fulfilled their first goal, that of producing high-end engineering graduates, the IITs had been unable to realize to any appreciable degree the other two. Failure on the third front in particular – with the IIT-industry interface proving refractory to suggestion or persuasion – caught the gaze of society and the media.

By the mid 1980s, IITs were firmly ensconced in the public imagination as ivory tower institutions insensitive to societal needs.

One often hears IITs being criticized as elitist institutions unable to interact in their own environment and with other technical institutions, remarked the 1986 IIT review. 'Their charter is to act as the 'brain banks' of our country. Therefore they should concentrate more and more on the extension aspect of their three basic roles... integrating themselves with industry, technology development and specialized production.'

This wasn't, of course, fated to happen. Dr M.V. Hariharan, who was Dean of R&D during this phase (he held office between 1981 and 1984), transports us to the mood that prevailed on either side of the IIT-industry chasm, and what each thought of the other.

'While I was Dean I had organized an industry-IIT meet to thrash out these problems. I remember Prof Mukherjee asking, – this was Dr K.C. Mukherjee, of Electrical Engineering – why industry wasn't taking any interest in our activities and our students. He also asked why no funds were forthcoming from industry for our laboratories, rendering IIT-Bombay totally dependent on the government. The industry contingent returned, what would we get from investing in your laboratories, supporting students for projects? Your students aren't going to be available to us, they'll all be leaving Indian shores. There will be no returns for the money or the precious time our engineers in industry spent with students. I remember the Deputy General Manager of Larson & Toubro saying, 'Prof Hariharan, even your 1500th student does not join us. Does this mean that we are so bad that even your last ranker does not consider our company good enough for him?' Hariharan concludes, sombrely, 'We had no answer.'

A telling sub-text to this dialogue is that local industry saw IIT-Bombay mainly as a source of potential recruits, not really a centre for R&D delivering new processes or products. There was, however, another segment of industry that did see IIT-Bombay useful in a different way, if again not the most wholesome way. It viewed the Institute mainly as a resource for testing and certifying its products by way of consultancy assignments. Again, there was no real R&D involved. As time passed this variety of industry 'interaction' bloomed into large volumes, leaving behind a curious legacy, as the same office that Hariharan had occupied – the Dean of R&D's – was to discover more than 20 years later.

When I spoke to the present and immediate past Deans of R&D, Drs. K. Ramamritham and K.C. Khilar, about the said mode of engagement with industry, Khilar said: 'We used to do around 800 to 900 consultancy projects every year and out of those I'd say close to 400

used to be routine testing projects – involving materials, water quality, corrosion. It wasn't really too much in terms of money but the volumes were quite large. It was going fine but then the numbers kept increasing, so much so that it changed the way people saw IIT-Bombay. They'd call the Dean R&D saying, "I want to get this testing done, where do I give the materials and the cheque?" Or they'd come in with their packages saying, "Here's the material. Please do this test and give us a certificate."

This was certainly not the image IIT-Bombay wished to project of itself, however inadvertently it might have arisen: of a high-throughput, high-profile tester of products. The need to clamp down was clear and acute. 'I thought,' says Khilar, 'enough is enough. Long term effect of this kind of thing on IIT-Bombay's image was going to be irreversible if we didn't arrest it there and then. We did it very slowly, taking an entire year, discussing it in our advisory committee, taking on board faculty who were active in consultancy. It was a question of IIT-Bombay's long term reputation, of whether we'd be seen as a teaching and research institute first or a testing establishment. Faculty concurred with our view, and we decided to phase it out.'

And Khilar's successor, Ramamritham, was glad for it: 'I'm happy to say that it had a big impact. We don't do much mundane testing of any kind any more. In fact a Customs official came by to see me personally, saying this was hurting them.' (Customs, for years, had relied heavily on IIT-Bombay for categorization of materials and evaluation of costs and duties.) 'So we said sorry but this is what led to it, and he appreciated it and after a while these approaches completely stopped.'

FOR THE BENEFIT OF THE WEST

Until the 1980s and 90s, the IITs hadn't succeeded in 'extending' themselves to industry; and little notable research was being done within their own laboratories. Naturally, the verdict here too was cheerless: the 1986 Review committee was compelled to observe, 'Research work pursued by the IITs did not appear to have so far an effective imprint on the national scene'. Many who deplored before the committee pointed out that research productivity in the IITs was much lower than expected. This was double jeopardy indeed: it was as if the IITs weren't just ivory tower institutions, they were non-performing ivory tower institutions.

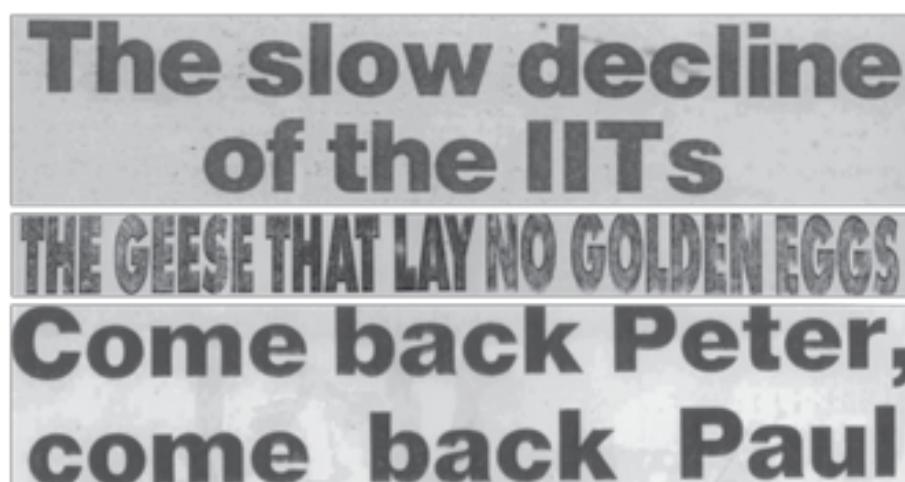
IIT-Bombay's academic peers, too, tended to not have the highest opinion of its research prowess and utilization of public funds. Dr A. Mehra recounts that in the mid and late 1980s, especially at the University Department of Chemical Technology (the UDCT, now the University Institute of Chemical Technology) where he'd worked previously, it was generally felt that most faculty at IIT-Bombay weren't active in research. Irrespective of its inner difficulties, the Institute (along with its sister IITs) was considered a pampered organization which, by the standards of a poor country, received liberal central government grants but 'didn't really deliver' on them. Bearing out this disparity was the fact, says Mehra, that the per-capita publication rate at UDCT was considerably higher than at IIT-Bombay, despite the latter's many perceived – and real – privileges.

And when you caught the IITs looking inward, here too one ran into the blues. Deprecation came from someone who had known the IITs first-hand longer and more intimately than most others: IIT-Bombay's former Planning Officer and Director, Dr Kelkar. In a letter to the 1986 Review Committee, he revealed that he thought rather poorly of the way the IITs and their senior faculty had allowed themselves to slide into a trough of lassitude. 'It looks as though most of the senior members of the faculty, in general,' he rued, 'have a "tired" outlook and have very little enthusiasm for change or new ideas or an inner drive for achievement.' He also worried that there seemed to be 'no peer pressure of any significance to rouse in some of them at least, a psychological urge to make a special effort for doing something outstanding.'

Mortifying words indeed... and to top it all, IIT-Bombay's most immediate audience – its own students of the time – saw little of note emanating from the IIT stables. As part of its Silver Jubilee observances in 1983, the Institute organized a student essay competition titled 'Perspectives for IITs for the remaining part of this century'. Joint first prize winner Nitin Nohria, now a distinguished alumnus of the Institute, began on a crushing note: 'To

take the liberty of passing judgment before an exposition, the IITs have failed in most respects to achieve their purpose. Their success in terms of realizing their objectives has been dismal! A few paragraphs later, he lashed out: 'In more than two decades of existence we in the IITs have not been able to create an ethos of excellence; of commitment to national development; of dedication and perseverance in the pursuit of education. We have not been able to produce a single technological breakthrough on a national scale.'

The person Nohria shared the prize with, Rangan Banerjee, now on the Institute's Mechanical Engineering faculty, had no succour to offer either, saying 'the IITs have made negligible contribution in fulfilling the national goals of poverty eradication, employment generation and economic self reliance.'



What they said then, what they say now: Headlines on the IITs from the 1980s and early 90s (left), and some from the early 2000s (right)

Nohria for his part added: 'We cannot boast of more than a handful of distinguished scientists and technologists of universal stature and recognition,' while Banerjee raised the most uncomfortable question of all: of 'whether the nation should pay the social cost of running IITs which nurture our best material for the benefit of the West.'

There can perhaps be no better summary of the rather dim view in which the IITs had come to be held by the nation's intelligentsia than these pithy volleys delivered by the very minds the Institute was trying to shape.

Confronted with a fast tarnishing image, was IIT-Bombay doing anything to mitigate its effects – for instance by way of that time honoured public relations exercise, 'image-building'? Thosar-Dixit, who joined at a time when both external and internal perceptions had ebbed to an all time low, says, 'I think there was no felt need to project IIT-Bombay to the general public. PR is related to creating an image of an institute so that it stays in the public mind, after which you can approach that public for your own needs, such as to get the best students, or better funding. But student recruitment was never a problem for IIT-Bombay from the earliest years, and funding was totally government based. The only public on that front was the Ministry of Education or later the MHRD, and all of that was being handled at the highest level, by the Director and the Registrar.'

The 'student recruitment' part here is significant for another reason. In Thosar-Dixit's estimate, 'Although the overall public perception in these days was negative, it was never hostile.' And why did it sink only so far and no further? 'Because finally the middle and upper classes which would be aware of these things, would also be the people who'd want their children to go to an IIT.'

Quite so: if you're aiming to climb aboard the gravy train yourself, you can scarcely carp about its iniquities.

So far as the media went, contact with them over this phase was limited to events like the Convocation, when the Institute invited the press over, 'and then too,' Thosar-Dixit recalls, 'it was a struggle to get them to come.' She feels, nevertheless, that some effort on this front could only have helped. 'Though we didn't feel the need to address the public, certain elements of perception could have been corrected. We needed to say we were not just creating students to go abroad. That so many alumni had stayed back, and had helped form the backbone of Indian industry, public sector organizations, and academia. And to emphasize that we were contributing to national projects, with so many of our research projects being funded by the government.'

This never came to be, however, since PR had never been a thought-out policy at IIT-Bombay. Even though there was a PR department, its PR functions had never been detailed. It was profiled along the lines of a utility department, to the point that its chief tasks revolved on managing the Institute's internal publications and printing press, its guest house and arrangements for official visitors. Alumnus P. Rele captures it pithily in his dig: 'IIT-Bombay never had PR, it only had a PRO.' Perhaps in the mid-80s and early 90s this was just a sign of the times: PR units were a new idea; corporate PR agencies had just recently arrived on the scene. Yet it was a pity, feels Thosar-Dixit, that 'in spite of the data being available from the Sukhatme-Mahadevan studies on the brain drain [this was late 1980s onwards], nothing was done as a matter of systematic policy to correct public impression.'

WHEN BEING GOOD IS GOOD ENOUGH...

Where public perception was concerned, the only solace IIT-Bombay was able to draw upon in its time of adversity, and which it shared with the other IITs, was the aura of excellence that surrounded the education they offered. 'The five IITs have attained, but more importantly maintained such high academic standards over the years,' said a *Business World* article in 1985, 'that their engineering graduates command a worldwide market, and are eagerly sought after by academic institutions and industry not only within the country but abroad - notably the US - as well.' They had established, it continued, 'reputations for academic excellence that compare favourably with the world's foremost institutions of higher learning.'

In pretty much every other domain, though, the Institutes had to square up to the disheartening charge of mediocrity, as exemplified by an article in a 1993 issue of the *Illustrated Weekly* which pronounced:

The Indian Institutes of Technology are not the centres of dazzling excellence that Nehru envisaged. They are, however, functioning research institutes and extremely strong teaching institutes, which produce well trained graduates every year.

And it closed with this thrust, cutting the IITs right down to size for their apparent complacency: And that, in a sense, is the IITs' tragedy. When being good is good enough, why should they bother to strive for excellence?

This for the IITs must have been the bitterest pill to swallow, being divested of their dearly cherished badge of excellence, relegated to the ranks of the merely good.

Not surprisingly, the spectre of mediocrity stalked the pages of the Institute's own records. In the Concluding Remarks of its annual reports from the late 1980s and early 90s, which are a reliable gauge of the Institute's morale from year to year, IIT-Bombay appeared to fight shy of seeing itself as a player on the international stage, contenting itself with visibility on the national scene – that again a decidedly modest one. In 1988-89, for instance, the most it said was: 'IIT looks forward to continuing its role of providing significant research input to national technology missions and expertise to policy planning in areas of Technol-

ogy Research and Development.' And in 1990-91, 'maintainance of satisfactory standards in all its academic and research areas and activities' and 'contributing to the nation's manpower needs' were all it could muster the grit to say.

The Institute wasn't to know that in just a few years' time, its fortunes would turn so swiftly around that it would be left blinking in disbelief. As if taking the cue from one another, its circumstances would be transformed at once on several fronts. Government funding would rise sharply; the Institute's alumni would start to appear in the highest ranks of technology, entrepreneurship, finance, and management, not just in India but around the world; and many of its alumni would start giving back handsomely to the Institute – events that have been traced in earlier chapters.

ALL DRESSED UP – FOR THE WEST

In the late 1990s unfolded a chain of events that bore quaint witness to the Institute's dented self-esteem typical of the times. A department was to host an international conference. It became an occasion for days of frenetic and rather unusual activity. Departments in that not-so-distant era commonly existed in a state of aristocratic shabbiness; this one was no exception. Its walls, for years, had been moulderding and peeling; discarded furniture graced its corridors like heirlooms awaiting an auction. Most forbidding were the toilets, marked by an acrid stench and frank dilapidation: cracked sinks, missing faucets, waterless and caked urinal bowls.

Come the conference, and a celebratory mood set in. Corridors and landings were transformed. The department's walls were scraped down, given licks of paint. Overnight, the aesthetic impulse, so far in slumber, stirred. Corridors mutated into galleries: paintings materialized upon their walls. Potted plants sprung up below the paintings, plus a sculpture or two. The old furniture was hacked, thrown out. And so forth. But the most striking changes came about in the toilets, where all was now spit and polish. New washbasins glinted with new brass taps; new mirrors sparkled and – unheard-of before – soap dispensers actually dealt out tapers of their viscous contents. In honour of their new avatars the toilets were rechristened: they were now 'Cloakrooms'.

All this while, you could hear faculty and technical staff exhorting the workmen and cleaners: there will be people from abroad visiting the department. What will they think? – an argument evidently meant to inspire in them a loftier sense of duty. The cleaners heard them out cheerfully, helped along by thoughts of the windfalls of extra payment that an international conference promised. The whole affair recalled the nervous, touching preparations for the British inspector's visit to a provincial school in Satyajit Ray's *Aparajito*. When the West came visiting, the East, like a girl about to be displayed before suitors, scrubbed and polished itself as never before. Things hadn't changed in a hundred years.

And the question arose, as at every such anxious prelude to an international conference: were only visitors from the West entitled to scuffed corridors, clean toilets? Would we never deem ourselves deserving of these simple civic necessities?

What ensued once the conference was over settled it. Even as the shoulder bags and grey suits dimmed from view, the clock was turned back full circle. Paintings were taken down, pottery removed. The biggest changes, as in the days of preparation, overtook the toilets. The fancy faucets were spirited away, replaced by their ragged predecessors, the idea being that the latter were less likely to be pilfered. Most tellingly, the liquid soap in the swinging dispensers, once exhausted, wasn't replenished.

This was but one of the many genuflexions towards the West routinely made in those years, or at least towards the idea of what the West expected of the East. Already in this book, other forms of the capitulation have found mention. The research agenda at the Institute had always borne a strong Western tilt, and still does. There was the incurable beeline that the Institute's graduates made for the US. And in the nineties, standard dress code for students was T-shirts emblazoned with the crests of American universities, speaking of allegiances being forged long before the flights were taken. As for IIT-Bombay's own T-shirt, it was hard to find, or if stumbled upon, disdained. Most tellingly, perhaps, the self-effacement spilled over into the realm of the semantic, finding its way into the smallest nooks of official parlance. IIT-Bombay's official names for its semesters were Spring for January-April, Autumn for July-November (they still are). These, as anyone familiar with Bombay's climate will attest, are utterly at odds with its seasons at the corresponding times of year. With Bombay's famed monsoon holding sway for the first three months of the 'autumn' semester, this interval actually marks the time when the campus is at its greenest, pulsing with renewed life – closer by far to spring than to autumn. And it's the first half of the year, January through May, that sees heavy leaf-fall from the deciduous vegetation and browned grass: hardly redolent of the word 'spring'. When this fallacy was pointed out at an Institute Faculty Meeting, with an appeal to change semester names to echo local seasons, the proposal was turned down on the grounds that the switch would confuse American universities receiving applications from the Institute's students, whose prospects might then be jeopardized. A compromise solution was also proposed: to give the semesters semantically neutral (if unexciting) names, 'Semester 1' and 'Semester 2', say, but nor did this idea win favour. Plain numbers still wouldn't ring the same sorts of bells, it was argued, in American minds as 'Autumn' and 'Spring'. Clearly in all this, such were the Institute's perceived compulsions that American universities were the only audience that mattered – even if it meant a wilful obliviousness to the evidence of our own sensations.

(To be continued.)

An Electrified Summer

"If you have the idea, we have the means", said an innocuous poster on the hostel notice boards. Rarely does a notice posted in the midst of end-sems create such flurry. However, the 20 odd pings that we received on our Gmail accounts were to prove us otherwise. The idea was simple: the Electronics Club (being a hobby club) was an opportunity for people to do something they had always wanted to do. And thus followed the inception of the Electronics Club Summer Projects (ECSP).

We found a group of self-motivated members who pursued projects because of their interest in Electronics. It was most heartening when a group of 30-odd club members showed

up at the meeting just after the last end-sem, cancelling their customary post-endsem celebrations. After preliminary discussions and a feasibility analysis, groups submitted abstracts for their respective projects. We shortlisted eight out of ten project abstracts. These groups were then assigned a final year student working in a related field as their project mentor. In addition to this, groups also submitted weekly reports to update us about their progress. In retrospect, we believe, this was a major factor in helping teams sustain their interest throughout.

Out of the shortlisted projects, five are currently or nearly complete. A team of first year EE students came up with a

PROJECT	TEAM	MENTOR
Onboard Speaker verification	Pritish Kamath, Aditya Mehta, Skand Hurkat	Mihir Mulay (5th Year Electrical Engineering)
Character Recognition Bot	Sanchit Deshmukh, Mihir Patel, Sujay Desai, Sanket Diwale, Raj Doshi (First year undergraduates)	Vishal Prabhu (Pass Out Aerospace Engineering)
Bicycle based Phone Charger	Nikunj Bhagat, Chirayu	Both are Second Year M.Tech EE
Sun Tracker	Saurabh Sant	Siddharth Chaddha (Pass Out Mechanical Engineering)
Swarm Robotics	Srikanth T.V., Abhishek Iyer	Siraj Issani (Pass Out Mechanical Engineering)
Handheld Gameboy	Rishabh Iyer, T.N.V. Krishna	Nipun Dave (Pass Out Electrical Engineering)
Handwriting Recognition	Gautam Kamath, Amogh Vidwans	Nikhil Pande (Pass Out Electrical Engineering)
Laser Pointer as a Mouse	Prashant Patil	-

"All it takes to charge your mobile is an early morning bicycle ride."

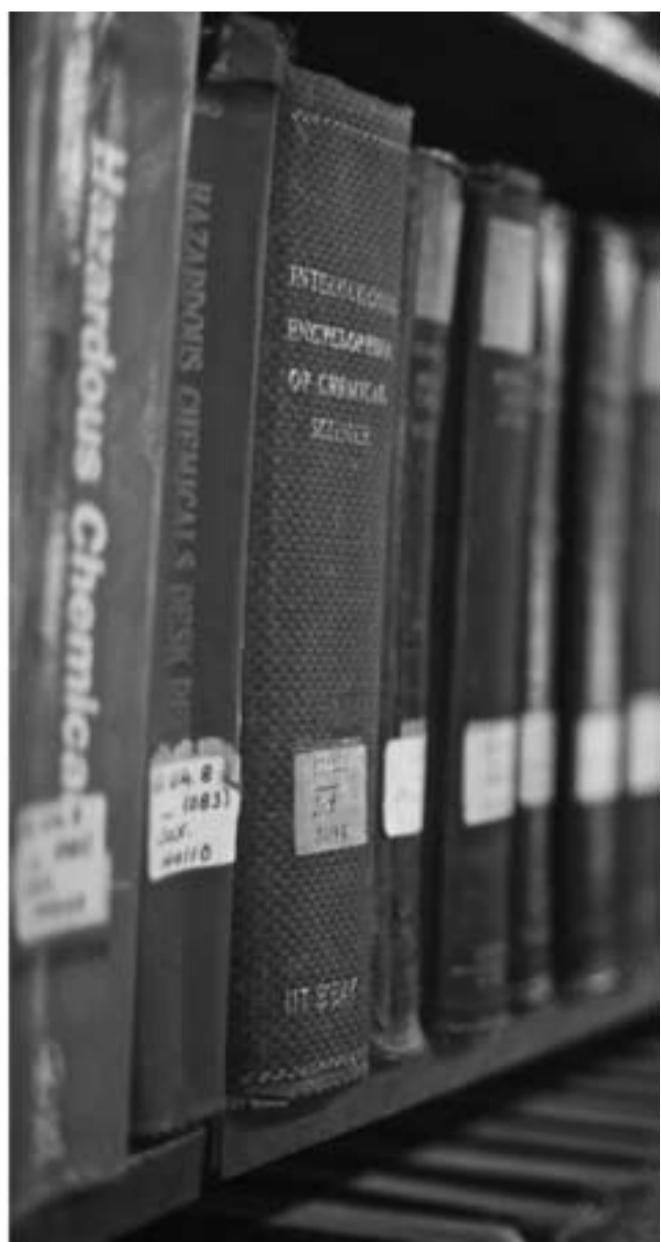
Character Recognition Bot. It is a small, two-wheel-driven robot that follows a line, deciphers marked cards with a letter on them and processes a series of letters to spell a jumbled word. It then forms the word using a magnetic arm.

Nikunj and Chirayu came up with the idea of charging cell phones while riding bicycles. Connect a dynamo to the right regulator and you have a working charger. "All it takes to charge your mobile phone is an early morning bicycle ride," grins Nikunj. Pritish, Aditya and Skand came up with a complete embedded voice-recognition system, based on security solutions. They are currently modifying their algorithm to further improve their hit rates.

Another project which has an innovative range of applications, is the Sun Tracker made by Saurabh and his mentor Siddharth. The Sun Tracker essentially tracks the sun's motion in the sky, using a motorised light-intensity sensor. Prashant is developing an offbeat mouse for the everyday desktop. He drew a parallel to the everyday laser pointers which are used for projections. The idea is to 'see' the laser beam using a conventional camera and then use its position as the input for the camera.

Three projects in varying stages of completion are the Swarm Robotics project, Gameboy and Wii Clone. The work required on completing these projects is expected to continue into the winter vacations. This experience was as much fun for the groups involved as it was for us. ■

Electronics Club Conveners: Chiraag Juvekar and Nandan Sawant, Third year undergraduates.



OPINION

Testing Times for IITB

■ MS HEMALI CHHAPIA Principal Correspondent, *The Times of India*

As a college student, IIT Bombay was never about the 72-point headline that stamped page one in the newspapers. I would head to the Powai campus with my gang when the annual all-nighter Mood Indigo would hit the ground running and make its big bang, while also baring the soul of IITB. Without doubt, it attracted some of the best students, and one couldn't help but marvel at some of those boys' (and girls') intellect and varied interests. They were easily the first among all those who were not yet their equals.

Trips to this tech school are now undertaken for more sober reasons. But to date, only the sharpest make it past the gates, and most of them walk out well-groomed and quite the finished products. An editor of this paper dreamt of joining IIT as a schoolboy, but dropped out of the race early on, reasoning, "Somehow the IITs, especially IITB, had that exclusive ring around it which is almost scary." For most others in the media, IITB is most associated with its verdant campus; "an oasis in the dirty industrial landscape of Kanjur Marg," is how one of the senior editors' refers to the campus. If some speak of the lush green campus, others get envious each time reports from the placement season hits new highs.

IITB's reputation precedes that of each of its students, but most in the media also believe that everybody on the faculty has given his or her bit to transform all those who had walked in wet behind their ears. Similar certification comes from students themselves, most of who love to re-quote the epochal line that Nandan Nilekani, one of IIT B's old boys, had said: "I learnt the most important lessons here."

IITB, apart from being what it is because of its academic superstars and bright students, is what it is because it has the capability of quieting the brain and opening the mind. This 50 year-old institute seems to be the perfect mix of old-school charm and new age ambition; it offers decent infrastructure, highly motivated staff and the right ambience to create winners and path-breaking thinkers.

While the golden jubilee reflected back at proud moments when milestones were reached, a lot more remains to be conquered. Bristle critics: Is IITB really world class or just the best among the worst? Visiting international faculty have, off-the-record, spoken poorly not just about laboratory facilities but even on the internet connectivity. The PWD-look that the buildings wear need some fresh thought; vernacular architecture like the designs at the Tata Institute of Social Sciences for instance, could give IITB buildings an image of new age, neat engineering with a sound Indian foundation.

But apart from what meets the eye, it's JEE time for IITB. The Big Daddies of engineering — MIT and Georgia Tech, will soon come up in its neighbourhood. Will IITB continue to be one of the things India can easily be proud of? ■

Pervasive ■ NEHA CHAUDHURI Campus Resident

For someone who has grown up looking at cloudless, empty blue skies, arriving in Mumbai during the monsoons is a blast.

A hard, dusty knot from within comes undone when thick, cold drops lash down from the heavens. Plop! they hit your head, and before you know it, they're sinking through all the layers of your hair, and your scalp smarts at their coldness. (Shivers that run through unprotected scalps are a tad faster.) Instinctively, you run for cover or open an umbrella, like so many others around you. In that fleeting moment, when you catch someone's eye, you're in sync with them because everyone needs shelter. Everyone is equally vulnerable at that moment — whether they enjoy soaking up the water or reaching for that sheltering umbrella.

There is something about the rains here that is quite like the scent of fresh coffee. I've never found so much use for umbrellas, *hawai* chappals, shorts and non-transparent, cottony clothes. I've never seen such agile running for cover, never seen four students huddling under one umbrella, never seen children wearing pink and blue gum boots to school and my husband, looking like a wet puppy when he comes back from work.

There is a sense of release and cheer on many faces: kids jump in dirty puddles, couples find a non-scandalous reason to stick close and the trees rejoice with an outburst of greenery. Even the breeze whispers of relief and freshness, bringing a clear coolness from the lake or the sea.

From the moment I visited the campus' academic area, the Corridor caught my imagination. Buildings within buildings, opening into other buildings. A concrete jungle that did not patronise nature, rather only carved a shelter as people walked to and fro, protected their books, shielded their bikes or cycles, and left whimsical wet footprints on the floor behind.

Seepage. I'd never thought about water leaking into laboratories, departments, into bathrooms, or bedrooms. I'd never thought of seepage being able to tear down buildings; I'd never thought water — sweet, fresh rainwater — could be capable of so much collateral damage. I'd never seen such

clear puddles. Even different shades of leaves could be discerned by someone who would but glance at the water beside his feet. I'd never seen wet roads for such a long period of time. I never felt I'd miss their dark and slippery texture until they dried up.

Buckets. It's strange how they're used for other stuff than having a bath. For collecting leaking water in exactly 21 spots in your house, for storing wet umbrellas outside shops, as make-shift furniture until one gets the roof repaired, as table-tops and drums, making music with the water inside while the showers overwhelm from outside. Amazing.

The days that I notice the lake more swollen than before make me want to jump with glee. From the exposed, sickly belly of a shrinking, vulnerable, almost endangered species, it has become a powerful, fecund, undulating blue and grey over the course of one month. Looking at it grow makes me feel fuller inside, healed in a fundamental way, free.

But (there's always one, isn't there?)

The rains here also mean an unleashed pain. Fungal infections sneak under your toenails when you're not looking, algal growth manhandles your footing, snakes sprout like mushrooms and crabs have fun twiddling their thumbs when you walk on their turf. Spiders find refuge in your home. Red ants love to get their fingers dirty in your food. House-flies find those open chinks between your windows and doors. Throat infections and common colds latch on to chilly, wet feet. The cool breeze plays havoc with sensitive ears. Cholera rubs its sleepy eyes and yawns itself awake.

A person may be alright with being lonely all year round, but his loneliness develops sharp claws under the rain cover. On some days, when he's caught inside four walls, stationing buckets in his chawl, a small voice moans from the rain, 'how beautiful it would be to share such small aches!'

The abundance of falling, gathering, flowing, swelling fresh water that curiously makes a man want to share his deepest secrets, a child break into a breathtaking smile, old ladies let down their hair and young people jump into the air.



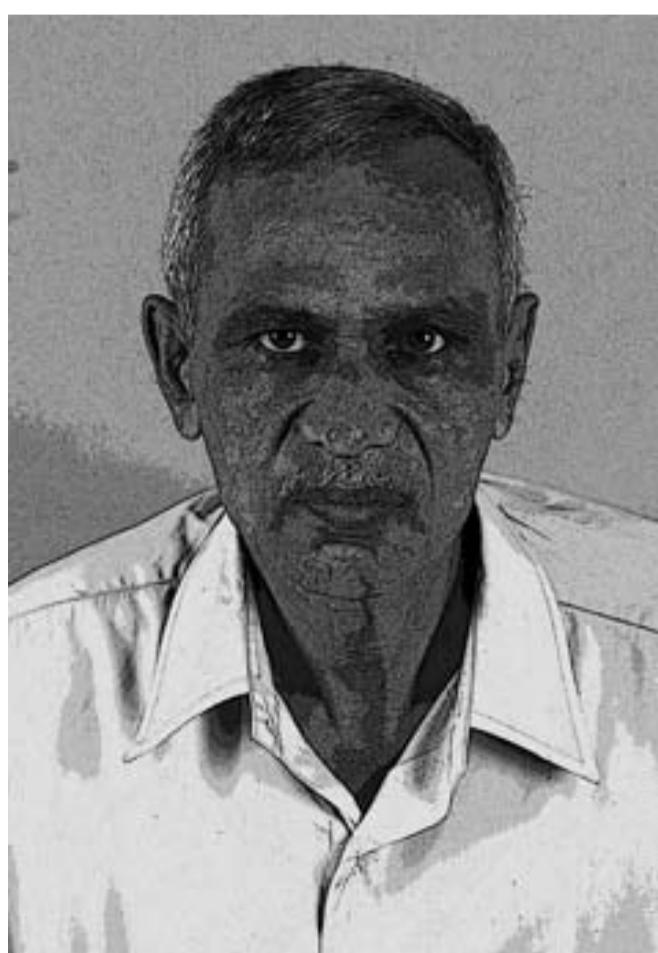
The grass sucks water anew, crocodiles find more space to move, cows have more food and *paani-poori* is the new mood. Cats disappear under eaves, inside old buildings, or cosy up in hostel corridors. Dogs meander from one concrete box to another, very happy to put up in the walkways.

And let's not forget the fabulous moments of making out. The harder it pours outside, the warmer it grows within each other's arms. That deafening waterfall on the balcony shelters a mewling, sleepy snuggle during early dawn. Fresh sweet nothings lure you like French toasts in the morning, and no one knows you cosy up to a pillow in your misty, after-mint sleep.

Nature lets loose, dreams are set free, happiness runs riot and glee bubbles in dried up eyes. ■

Treasurer of Books

■ From *Maharashtra Times*. Translated by MR. C. P. JOGLEKAR



Mr. Dattaram Gaikar is a self-effacing individual who has been serving IIT Bombay in the capacity of a peon, for thirty-seven years. He is known to calmly help others and eschew any credit given to him. But what is unknown to many, is that he is an avid reader and collector of rare Marathi books. He generously provides reference books that have gone out of print to many famous writers and critics from his library collection. *Maharashtra Times* heard of Mr. Gaikar's passion from a fan in the writer fraternity, and awarded him for his patient and unrelenting thirst for knowledge. The article below was published in *Maharashtra Times* in Marathi, and has been translated to introduce to you an example of a 'lamp in the dark'.

Dattaram Gaikar begins every Saturday and Sunday by passionately searching for a rare, sought-after book and this search ends with the satisfaction of having found it. At present, Mr. Gaikar is a Peon (Select Grade) in MEMS at IIT Bombay. He searches all *raddi* shops in order to save old, unusual books from destruction. He has been nurturing his passion of collecting such treasures for the last 20 years and has thousands of them at his home at Kisan Bapu Chawl in Chunabhatti (a 10 x 12 feet room), and the library at Karanjale, a small village in Dapoli Taluka.

Born in 1952, he studied up to 9th standard, but loved books from his childhood. His love for them has continued into adulthood. He joined IIT Bombay as a peon in 1972. While working here, he goes about purchasing books by visiting *raddi* shops (negotiating with many shop owners).

He also preserves old or rare books by photocopying them. He does all this despite his meagre salary. Initially, collecting and preserving these Marathi classics was merely a hobby for Mr. Gaikar, but one day, he decided to take things a step further.

Karanjale, his home, is like any other village. He came away to work, but felt a need to do something for the people he had left behind. There were hardly any facilities for reading in the village — no libraries existed because there were no books. To help children begin reading and also introduce them to Marathi literature, Mr. Gaikar started sending books to Karanjale. Mr. Gaikar believes that once children fall in love with reading, they will learn with more interest.

When Mr. Gaikar came to know of the government scheme, *Gav tethe granthalay* (Library for each locality), he sent one thousand books to the library at Karanjale without any financial consideration whatsoever. He also informed them that they need not dedicate the library's name to him. Even today, he sends books worth reading to their new home at Karanjale. The entire credit of establishing a good collection, which has opened the doors of knowledge for people who may be interested (but do not have any facilities) goes to this humble man.

An old and very rare book *Marathyancha Itihas*, written by Shivram Paranjape is in Mr. Gaikar's collection. Some rare books written by successors of the Queen of Jhansi are also in his possession. ■

SALTED LEMONS

Scary Teachers

■ PROF. PARAG CHAUDHURI CSE

Nothing. Nothing at all will prepare you for teaching — except, perhaps... teaching.

A gruelling Ph.D. and a labourious postdoctoral degree later, teaching was supposed to be easy. At least, it seemed easy when I was a student. I would have never known otherwise, had I not crashed into a class full of young (albeit stolid) faces staring at me with what seemed like a mixture of amusement, curiosity and disapproval. But I am getting ahead of myself.

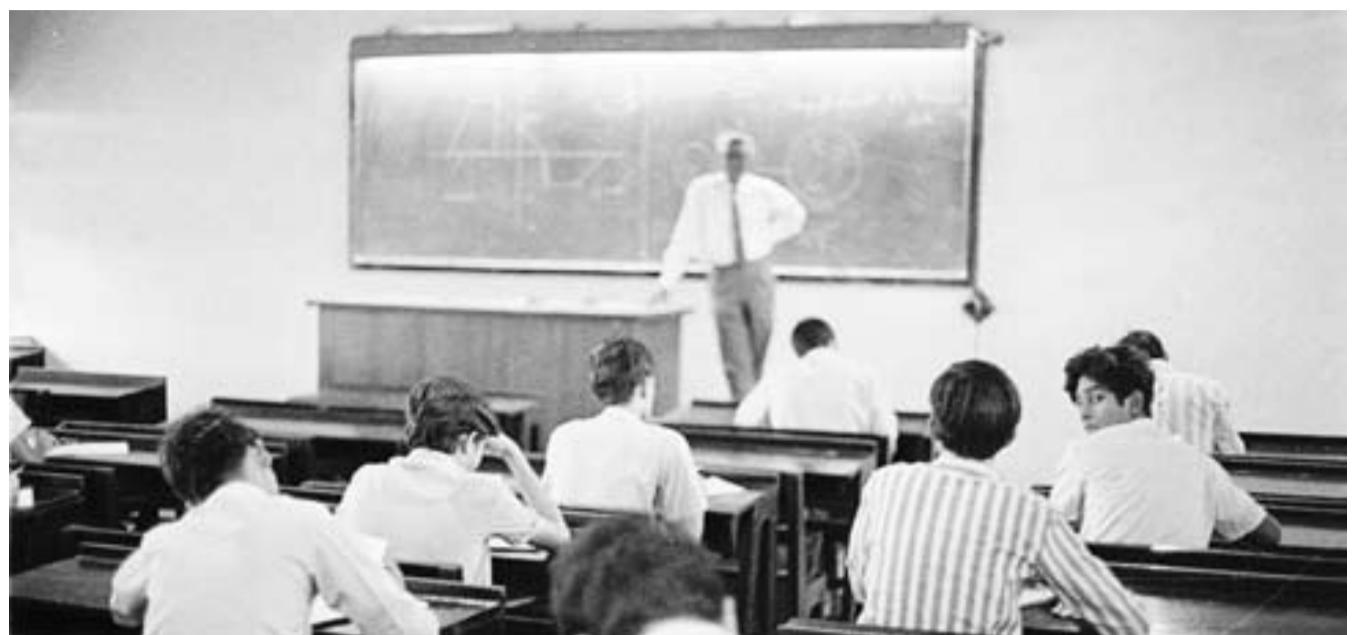
Let's start from the time the course was announced. CS475 — Computer Graphics. I thought that it was not a difficult subject to like, and it seemed like fairly easy work to win over the kids who walked into my room, starry-eyed, asking me if I would teach them how to program computer games. My first impulse was to answer in the affirmative. But then I started wondering, "Will I?"

The question, "What should I teach?" caught me unawares, like the sudden chaotic cacophony that drowns anybody who walks out of the gates of this hallowed campus. "What should be the aim of my course — what do I want my students to learn from their first course on Computer Graphics?" I expected them to fall in love with the subject, but then, how does one teach that!

Coupled with this was the question of how to teach the subject. Was I to use slides and notes only? Or was I to use the whiteboard and engage the class in discussions? When I was a student, I remembered how easy it was to fall asleep in classes, to the soothing, monotonic sounds of read-aloud-from-slides lectures. Now, were my lectures to suffer the same fate? The lectures had to be visual because Graphics is a visual subject. Demonstrations seemed to be a must, because my experience told me that all the beautiful math in a book could fail miserably in practice, because engineering a program to perform Graphics correctly is difficult. Yet, the fact that math is beautiful in itself is difficult to get through in the first place! It seemed like I would never get started.

But a deadline often does wonders. And so the course started, because it had to on a certain date. I walked into my class, armed with slides, notes, movies, demos and a bag full of confusion and apprehension.

The first lecture (an introduction to the subject) was easy enough. Even the announcement of the first written homework was taken with just a murmur of dissent.



Though talking non-stop for one and a half hours had left me with a very sore throat, I came back with a content smirk on my face, thinking that things were finally looking up. Little did I know, I was heading into a Venus Flytrap. In my next lecture, I started with something fairly easy. Things were going okay, until I was asked a question by a student. A question that I had never read anywhere. A question that I would have never thought about myself. I went to the whiteboard in a daze and attempted an answer. Convinced that I had figured it out correctly, I turned around to face my students, only to find even more hands reaching up into the air. This time, I came back feeling humbled, with a dent on my self-esteem.

I had never studied so much as a student, as I did before I went in for my next lecture. All the questions asked by my students forced me to navigate many tricky, murky, dark-lit corners of the area that I had not ventured into before. As this became regular practice for each lecture, making slides and notes took more and more time. Everything else that demanded my time — my newly constructed marital jigsaw, the guerrilla warfare between my unaccustomed body and humid Mumbai weather, living out of a suitcase — took a backseat. And I managed to hold on to a semblance of a schedule in my lectures.

Then the first bundle of homework submissions landed on me. As I write this, the first written homework has been

submitted a second time by most students, and another written homework and a programming assignment has been completed — all these are pending evaluations. In the interim, a quiz has happened and the marks will go out in today's lecture. And as I think that perhaps a better use of my time would have been to finish correcting those assignments, I still continue to write this article.

This is not because I am compelled to write. This is not even because writing this serves as an escape from checking assignments (although it does). Instead, I write this article because I have made a startling discovery about myself — something I did not expect. Yes, it is a nerve-racking and intensely solitary activity, preparing for every lecture. It is turning out to be almost dictatorial in its demands and ethereal in its rewards as a profession. Obviously, being a fumbling amateur, I do not have a clue about whether my students are actually falling in love with the subject or not. Neither can I fathom how to teach them things like the value of citations and references in a body of so-called 'original' writing. And the only person who, I am sure, is learning a lot better than what he or she would have, had I not been teaching, is me. Yet, during a lecture, even the slightest hint of comprehension on the faces of any of my students seems to be enough to keep coming back for more.

Scary, isn't it? ■

POETRY

View from Powai Lake

■ NEHA CHAUDHURI Campus Resident

From the airport to Sion,
the lake was a passing view:
distant, calm and glossy blue,
in the lap of a hazy institute
which I had neither desired to enter,
nor now, wish to leave.

The charm of the city
and my brother's weekend free
ushered wonder for that fleeting breeze.

Six years later, I'm beside the homegrown
hyacinths every evening, soaking up whispers
of the wind, raucous calls of the geese.

Some guys tell me, 'You're lucky
all you had to do was marry,
look at us — we give up our lives, loves and joys
for a small piece of the gorgeous green pie.'

I'm abruptly in a village,
a hub, a mecca of trees,
a childhood dream, old peoples' fetish,
the government's million dollar scheme.

It aspires-inspires-conspires, all
in one breath.

Timeless, yet with a past,
and rattling its wheels
into a future, it gives birth,
nourishes, scares, kills.

hides snakes in fuse boxes,
has leaks in houses, discovers students in labs,
and makes for a swell place
for crabs.

But when I walk beside the lake;
All I unearth is
a watery echo of the blue sky
a liberated cyan dome up on high
both meeting
at the feet of a run-down shed,
from where
several visions of infinite hope spread. ■



Laurels

PROF. ANAND PATWARDHAN of the School of Management has been invited by *Elsevier* to serve as its Editor-in-Chief, together with Prof. Rik Leemans of Wageningen University, for the new *Current Opinion in Environmental Sustainability*. The journal addresses scientific, economic, social, technological and institutional aspects related to the challenge of environmental sustainability by focussing on integration across academic disciplines and insights with implications for societal practices and processes.

He also serves as co-chair for Global Carbon Project's (GCP) Scientific Steering Committee (www.globalcarbonproject.org), one of the joint projects of the global change science programmes sponsored by ICSU. GCP seeks to improve our understanding of the carbon cycle (including its natural and human dimensions), and has international project offices in CSIRO, Canberra, NIES, Japan and the Chinese Academy of Sciences, Beijing.

PROF. DEEPAK CHAUDHURY of the Department of Civil Engineering has been selected by the Alexander von Humboldt Foundation, Germany for the Humboldt Research Fellowship for Experienced Researchers. He also served as Guest Editor for a special issue on *Earthquake Geotechnical Engineering: Recent Developments* in the *American Journal of Engineering and Applied Sciences*, ISSN 1941-7020, Science Publications, U.S.A. which has appeared in Volume 2, Issue 3, 2009 and has six technical papers from page number 515 to 572.

He has also been inducted as an Editorial Board Member of ISSMGE Bulletin for a period of four years, on the recommendation of the International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE), London, U.K. He also received the Young Investigator Award for 2007 at the Teacher's Day Celebrations.

PROF. ASHISH DAS of the Department of Mathematics has been selected for the 5th M. R. Pai Memorial Award. This award has been instituted in the memory of Mr. M. R. Pai, and recognises proactive research that displays originality and impacts consumer welfare in the society. It has been conferred on Prof. Das for his successful efforts which have led to regulatory changes in Indian banking, thereby benefiting its customers. The award committee considered this as an ideal example of how the application of statistics and statistical arguments can highlight certain issues that touch our day-to-day lives.

PROF. MILIND ATREY of the Department of Mechanical Engineering has been inducted as a Member of the Advisory Council of LG Electronics.

PROF. S. L. DHINGRA of the Department of Civil Engineering has been appointed to the executive committee of the International Benefits Evaluation and Costs Working Group (IBEC) of Intelligent Transportation

Systems. IBEC has been set up to coordinate and expand international efforts to exchange information and techniques, and to evaluate benefits and costs of Intelligent Transportation Systems (ITS).

He has also been nominated by the International Biographical Centre to be included in their list of Top 100 Engineers of 2009.

PROF. B. BANDYOPADHYAY of Systems and Control (IDP) has been selected as a Distinguished Visiting Fellow by The Royal Academy of Engineering, London for his contribution on Variable Structure Systems with Multirate Output Feedback. He is the only Indian who has been awarded this prestigious fellowship in this round.

PROF. ROHIT SRIVASTAVA and his students of the Bio-School have been awarded three prizes worth \$32,000 for their recently submitted RFI topic, *Smart Embedded Medical Diagnostic Consumer Devices* to Intellectual Ventures (IV) Asia, PTE Ltd. All three solutions will proceed for U.S. Patents through IV.

PROF. ASMITA MUKHERJEE of the Department of Physics has been selected for the Gary MacCartor Travel Award for 2009 by the Board of International Light Cone Advisory Committee (ILCAC) to participate and give a talk on her recent research on Light Cone QCD at the conference, *Light-Cone 2009: Relativistic Hadronic and Particle Physics* in Sao Jose dos Campos, Brazil to be held in Barcelona, Spain. Each year, this award is given to three people in the world, working in this field.

PROF. V RAMGOPAL RAO of the Department of Electrical Engineering has been awarded the ISA TechnoMentor Award for 2009 by the India Semiconductor Association, Bangalore.

PROF. KRITHI RAMAMRITHAM of the Department of Computer Science and Engineering has been selected for the IBM Faculty Award 2009.

PROFESSORS P. SESHU and BHALCHANDRA P. PURANIK of the Mechanical Engineering Department were conferred with the Professor A. Jaganmohan Award for Professional Development, 2008-2009 in a ceremony held at IDC Auditorium on 3rd August, 2009. Dr. S. K. Jain, Chairman and Managing Director, Nuclear Power Corporation of India Limited, was the Chief Guest and Professor S. P. Sukhatme was the Chairperson. Through his brother's donation, the award was instituted in 2007 in the memory of Professor A. Jaganmohan, a former faculty member (1958-1992) and the Head of the Mechanical Engineering Department (1978-1981), IITB. The criterion for this award is 'goodness in teaching'. The two awardees were selected through a vote by the outgoing B. Tech., Dual Degree and M. Tech. students of the department. The award consists of a citation and a grant of Rs. 50,000 for the awardee's Research Development Fund.

Mr. PAIDIMARRI ARUN of Department Electrical Engineering was awarded the President of India Medal at IITB's 47th Convocation.



Mr. SUYOG GUPTA, B.Tech. (Dual Degree) 2007-2008, Department of Electrical Engineering was awarded the Institute Gold Medal at IITB's 47th Convocation.

Recipients of **Awards for Excellence in Teaching 2008** were:

PROF. V. M. GADRE, Department of Electrical Engineering
PROF. M. K. SRINIVASAN, Department of Mathematics
PROF. V. SETHI, Centre of Environmental Science and Engineering
PROF. P. S. V. NATARAJ, Systems and Control (IDP)
PROF. D. B. PHATAK, Department of Computer Science and Engineering
PROF. R. B. SUNOJ, Department of Chemistry
PROF. J. M. VASI, Department of Electrical Engineering



DR. PUSHPAK BHATTACHARYA and his team, the Department of Computer Science and Engineering were awarded the Dr. P. K. Patwardhan Technology Development Award.

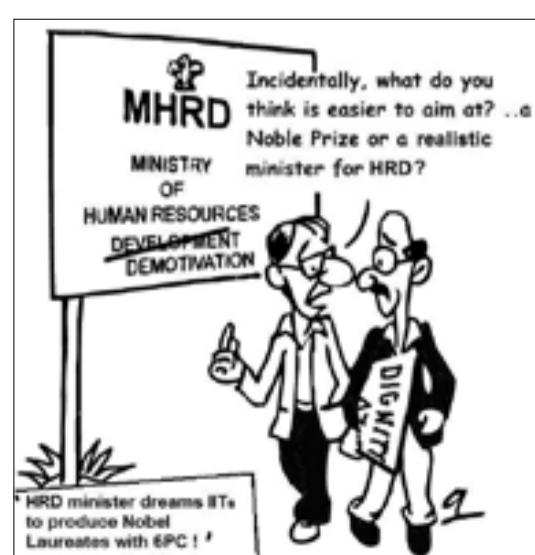


PROF. HETU C. SHETH of the Department of Earth Sciences and **PROF. AMIT AGRAWAL** of the Department of Mechanical Engineering also received the Young Investigator Awards, 2007.

The **IIT Bombay Research Paper Award** for 2007 went to R. Murugavel, Vivek V. Karambelkar, Ganapathi Anantharaman and Mrinalini G. Walawalkar, Department of Chemistry; S. Sudarshan, Gaurav Bhalotia, Arvind Hulgeri, Charuta Nakhe and Soumen Chakrabarti, Department of Computer Science and Engineering; D. Manjunath and Madhav Desai, Department of Electrical Engineering; Pramod Wangikar, Ashish V. Tendulkar, S. Ramya, Deepali N. Mali, Sunita Sarawagi, Department of Chemical Engineering and Department of Computer Science and Engineering.

The **Best Review Paper Award** for 2007 went to P. Jayadeva Bhat and T.V.S. Murthy, Department of Biosciences and Bioengineering.

SALT 'N' PEPPER ■ DR. ARUN INAMDAR



NEWS

Events and Announcements

IITB held its 47th Convocation on 7th August, 2009 at the Convocation Hall

Dr. E. Sreedharan, Managing Director, Delhi Metro Rail Corporation Limited was the chief guest, and he delivered the Convocation Address. This year, a total of 1,616 degrees were awarded to students. Of these, 177 are Ph.D, three M.S. (by research), 687 M.Tech, 72 M.Mgt., 48 M.Des., 11 M.Phil., three PGDIIT, 115 M.Sc. (including five-year integrated M.Sc.) and 500 are B.Tech degrees. 31 students received Medals in different categories.



The President of India Medal and the Institute Gold Medal along with several others were awarded to students at the Convocation.

The Degree of Doctor of Science (Honoris Causa) was awarded to G. Madhavan Nair for his outstanding work in space research, and for putting India on the world map in space technology. G. Madhavan, who is the Chairman, Indian Space Research Organisation (ISRO) and Space Commission, and also the Secretary, Department of Space, Government of India, was conferred with the medal in the presence of the Chief Guest at the Convocation.

IITB held its 51st Teacher's Day celebrations on 5th September, 2009 at P.C. Saxena Auditorium

The chief guest, Prof. Balaram, Director, Indian Institute of Science, Bangalore presented eight Excellence in Teaching awards, IRCC Research and Consultancy awards for 2007 and Dr. P. K. Patwardhan Technology Development awards to the nominated faculty members. The programme began with a Bharatnatyam performance by students. Students also introduced their professors to the audience and presented their perceptions of what made their professors notable teachers, before the other teachers came to collect their awards.



Amrita University Revolutionises E-Learning with its A-VIEW System

After months of non-stop testing, A-VIEW was officially unveiled on 11th August, 2009. Dr. A. P. J. Abdul Kalam, former President and Dr. Shankar Shastry, Dean (Engineering), University of California, Berkeley, launched this system with other dignitaries during a session on 'What makes a World-Class Engineering Institution?' After the launch, Dr. Kannan Moudgalya, Head (CDEEP), IIT Bombay said, "A-VIEW has potential to become the software platform of choice for students all over the country. With minimal

infrastructure, students can immensely benefit from its multi-modal, interactive and immersive environment." A-VIEW systems are now being installed at several other premier institutes such as IIT Delhi, IIIT Allahabad, and others.

A-VIEW works over a network to bring classroom teaching live from teachers at reputed institutions to eager students at numerous locations all over India. IIT Bombay is the first institute to deploy A-VIEW to deliver live lectures to VNIT, Nagpur. The outstanding feature of A-VIEW is its ability to use four high-resolution displays, providing simultaneous high quality delivery of video, presentation slides, interactive whiteboard and access to latest references, all at the click of a mouse.

MoUs

An MoU between IIT Bombay and Nanyang Technological University to start Joint Master Degree Programme in Infrastructure Engineering and Management (MIEM) was signed on 24th June, 2009.

Global Alliance of Technological Universities to address global societal issues

Seven founding universities from Asia, Europe and North America came together at the Nanyang Technological University (NTU), Singapore, to formalise the setting up of a Global Alliance to address global societal issues in April this year. An inaugural forum was also held, where senior representatives of the Alliance discussed the role of technological universities in the 21st century. Members of the Alliance include the California Institute of Technology and Georgia Institute of Technology in the United States, Imperial College, London and Eidgenössische Technische Hochschule, Zürich (The Swiss Federal Institute of Technology, Zurich, or Zurich ETH) in Europe, and IIT Bombay, Shanghai Jiaotong University and NTU in Asia. The Alliance brings together all these engineering-based universities in the belief that one of the best ways to address global societal issues is through the joint and concerted development of technological solutions, based on top-class research in science and technology.



The grand challenges identified by the Alliance include biomedicine and health care, sustainability and global environmental change, security of energy, water and food supplies, security and changing demographics. Dr. Su Guanling, NTU President, said that the Alliance will adopt an interdisciplinary and cross-boundary approach to address these issues, by developing avenues for solutions through research collaboration and exchange.

K.V. IIT Bombay, Powai the only K.V. to comply with National Accreditation Board for Education and Training (NABET)

Kendriya Vidyalaya IITB, Powai has once again proved its merit as the first K.V. amidst 981 K.V.s across the nation, and the second school all over the country, as "assessed and found to be complying with NABET requirements as per accreditation standard for quality school governance".

NABET is the nationally recognised accrediting body for schools, under the Quality Council of India, which confers the distinguished hallmark of accreditation status to Educational Quality Management Systems. During an award ceremony held on 26th August, 2009 at Kendriya Vidyalaya Sangathan's headquarters, Cherian C. George, Principal, Kendriya Vidyalaya IITB, Powai was conferred this honour with an accreditation certificate, in the presence of KVS & QCI officials from New Delhi.

ANNOUNCEMENTS

Birds@IITB is an effort by a group of nature lovers and enthusiasts to collect information, stories, images, anecdotes, etc. about birds at IITB. Visit <http://www.cse.iitb.ac.in/~puru/birds/> for more details. If you want to be part of this effort, send an email to puru@cse.iitb.ac.in, yogeshm@cse.iitb.ac.in

Children's Theatre Workshop at IITB: The Staff Club is presenting IITB's first theatre workshop at the Staff Club, IITB campus between 26th and 27th September (for age group - five to nine years) and October 3rd and 4th (for age group - 10 yrs to 14 yrs). The workshop will explore expression, communication, personality development, speech-voice-diction, creativity, imagination, concentration, confidence, breath and body language, individual excellence and team work among participants.

EVENTS

The Academic-Inaugural of Indian Institute of Technology Indore was held on 24th July, 2009. Prof. Devang Khakhar, Director, IIT Bombay (and also the mentor Director of IIT Indore) delivered the Inaugural Address to the first batch of students to signify the start of their first academic session at Devi Ahilya Vishva Vidyalaya Auditorium, DAVV Campus, Khandwa Road, Indore.

IIT Bombay led and conducted a landmark workshop on June 11-14, 2009 pertaining to the development of INDOWORDNET at Amrita University, Coimbatore. Participants from all over the country were introduced to the principles and practices of Wordnet construction. INDOWORDNET is a massive dictionary-cum-thesaurus-cum-word-knowledge-base in electronic form, needed for all kinds of intelligent processing of text. Of India's 22 official languages, 13 are involved in this database. IITB's R&D efforts in Artificial Intelligence and Natural Language Processing (which involves Automatic Translation, Intelligent Information Retrieval, etc.) are being conducted under Dr. Pushpak Bhattacharya's guidance in the Computer Science and Engineering Department.

Department of Humanities and Social Sciences had organised a seminar on 'Economic Approaches to the Climate Challenge' by Dr. Patrick CRIQUI, Laboratoire d'Economie de la Production et de l'Intégration Internationale (LEPII), Domaine Universitaire, France on 14th July, 2009.

Department of Energy Science and Engineering had organised talks by Mr. V. P. Raja, Chairman, MERC (Maharashtra Electricity Regulatory Commission) and Dr. M. M. Shaijumon, CIRIMAT, Université Paul Sabatier, Toulouse, France, on 'Electricity Regulation in Maharashtra — Challenges and Research Issues' and 'Carbon Nanotube-based Hybrid Structures for Energy Applications' on 24th July and 19th August, 2009 respectively.

UNESCO and Columbia University jointly organised a workshop on 'Climate Change and Water Resources', 8-10 August, 2009 at New Delhi. Prof. D Chandrasekharam, Department of Earth Sciences presented his work on 'Carbon Dioxide and Water', Prof. Shyam Asolekar, CESE and Prof. Subimal Gosh, Department of Civil Engineering presented their work on 'Significance of Recycling of Treated Effluents in the context of Carbon Foot Print and Climate Change' and 'Challenges in Modelling Hydrological Impacts of Climate Change at River Basin Scale' respectively.

APPOINTMENTS

Department of Metallurgical Engineering and Materials Science had organised a seminar on 'Aeronautical Materials and their Characterisation' on 23rd July, 2009 by Dr. Vijay K. Varma, Regional Director, CEMILAC Materials, Hyderabad.

School of Biosciences and Bioengineering had organised seminars on 'Mitochondria — at the Crossroad of Life and Death' by Dr. Soumya Sinha Roy, Department of Pathology and Cell Biology, Thomas Jefferson University, Philadelphia on 5th August, 2009 and 'Nanobiotechnological Approaches to Neural and Bone Tissue Engineering' by Dr. Dravid Nisbet, ARC Postdoctoral Research Fellow, Department of Materials Engineering and Division of Biological Engineering, Monash University Victoria 3800, Australia on 20th August, 2009.

Dr. Azizuddin Khan of the Department of Humanities and Social Sciences delivered an invited lecture on 'An Investigation on Prospective and Retrospective Memory: Basic and Applied Research' organised by Leibniz Research Centre for Working Environment and Human Factors, Dortmund, Germany on 24th July 2009. Dr. Khan visited Institut für Arbeitsphysiologie at the University of Dortmund (IfADo) Germany for Collaborative Research Venture.

Navsrujan Ganesh Mahotsav 2009 was organised from 16-18 August, 2009 at the Ceramic Studio of IDC at IIT Bombay. This is a unique event organised by the 'Save Powai Lake' team, to promote eco-friendly celebrations of the Ganesh festival. The 'Save Powai Lake' team, consisting of students and faculty of IITB and Powai residents, has been actively involved in conducting public awareness campaigns and drawing the attention of authorities to the pollution and destruction caused to the Powai Lake.



Techfest Update In its latest edition, Techfest will be making an effort towards the betterment of standards of living in rural India. With its new Problem Statement called Utkarsh (under Prayaas), participants will come up with indigenous solutions to improve the lives of people living in areas with limited resources. The social and technological goals being clear, Techfest invites everyone to contribute to the Herculean task of making this world a better place to live in for generations to come. For further details, log on to www.techfest.org/initiatives.

Mood Indigo to host Porcupine Tree The Grammy-nominated progressive rock band from U.K., Porcupine Tree has performed over 600 concerts worldwide and is doing 50 more this year. Porcupine Tree will hit MoodI on 21st December 2009. Says Aaron D'souza, Core Group Member for Pronites at MI '09, "Given the number of PT fans in the country and the fact that they have never performed in India before, we're expecting crowds from all over the country. PT is a huge attraction and this concert will be the spotlight event this year."



PROF. VIRENDRA SETHI, CESE, has been appointed as the Head of Centre for Environmental Science and Engineering vice Prof. S.R. Asolekar on 15th June, 2009.



DR. SWAROOP GANGULY has joined as Assistant Professor in the Department of Electrical Engineering on 28th July, 2009.



PROF. NISHANT SHARMA joined as an assistant Professor in the Industrial Design Centre on 22nd June, 2009.



PROF. N. K. NAIK joined as an Emeritus Fellow in the Department of Aerospace Engineering on 22nd June, 2009.



DR. M. P. GURURAJAN joined as Assistant Professor in the Department of Metallurgical Engineering & Materials Science on 1st July, 2009.



DR. SARAVANAN VIJAYAKUMARAN joined as Assistant Professor in the Department of Electrical Engineering on 6th July, 2009.



DR. BALWANT SINGH has joined as Adjunct Professor in the Department of Mathematics on 2nd July, 2009.



DR. SUDHANSU MALICK joined as Assistant Professor (Contract) in the Department of Metallurgical Engineering on 6th July, 2009.



PROF. P. V. BALAJI, School of Biosciences & Bioengineering, has been appointed as Associate Dean (R&D) on 6th July, 2009.



DR. RANJITH PADINHATEERI joined as Assistant Professor in the School of Bioscience & Bioengineering on 8th July, 2009.



DR. KRISHNA V. KAIPA joined as a Lecturer (Sr. Scale) (Contract) in the Department of Mathematics on 19th July, 2009.



DR. SRINIVAS ALURU has joined as a Professor in the Department of Computer Science & Engineering on 13th July, 2009.



DR. AJAY SINGH PANWAR has joined as Assistant Professor in the Department of Metallurgical Engineering & Materials Science on 20th July, 2009.



DR. HARI B. HABLANI has joined as Professor (Contract) in the Department of Aerospace Engineering on 20th July, 2009.



PROF. N. K. KHOSLA, Dept. of Metallurgical Engineering & Materials Science has been appointed as Professor-in-charge, Application Software Cell vice Prof. S. Sudarshan, Dept. of Computer Science & Engineering on 20th July 2009.



PROF. ASHOK JOSHI Department of Aerospace Engineering has been appointed Professor-in-Charge, Continuing Education Programme/ Quality Improvement Programme (CEP&QIP) vice Prof. A. S. Moharir, Department of Chemical Engineering on 31st July, 2009.

RETIREMENTS

31 August 2009 and 30 September 2009



SHRI KAMALAKAR G. MURUMKAR will be retiring after 32 years of service on 31st August, 2009. He worked in the Institute as Sr. Assistant Engineer in the Electrical Maintenance Division. *He was very punctual and particular about timely delivery of jobs assigned to him. His accountability and integrity was a guiding force for the team members to perform better.*

— MR. B. K. SAHOO, Executive Engineer, Electrical Maintenance Division.



SHRI AJIT M. VALAVALKAR will be retiring after 32 years of service on 31st August, 2009. He worked in the Institute as Superintendent in the Department of Computer Science & Engineering. *We shall remember Mr. Valavalkar for his signature qualities like being prompt, well-informed, very thorough with procedures and extremely knowledgeable of the current electronic market.*

— PROF. DHAMDHERE, CSE.



MS. KARUNA A. LAHIRI will be retiring after 29 years of service on 31st August, 2009. She worked in the institute as Sr. Superintendent in Chemistry Department.

She had a great rapport with students, as she was warm and sympathetic to their problems. She was the ideal person to have in the front office as she was always well-dressed and could interact agreeably with international visitors.

— PROF. ALI Q. CONTRACTOR, Dean Alumni & Corporate Relations.



SHRI GAJANA D. PRABHU will be retiring after 40 years of service on 31st August, 2009. He worked in the institute as Mechanic Assistant in the Department of Chemical Engineering. *He helped everyone with equal willingness and was very popular in the department, as he coordinated well with people. Also, many people may not know this, but he is very interested in singing devotional songs.*

— MR. THAKUR, Dept. of Chemical Engineering.



MS. PONNI BALAKRISHNAN will be retiring after 27 years of service on 30th September, 2009. She worked in the institute as Sr. Staff Nurse in the IIT Hospital.

She will be remembered for being hardworking and good by nature. She has contributed her services sincerely and whole-heartedly at the hospital.

— Sister Lena, IITB Hospital.



SHRI GOVIND Y. GHOSALKAR will be retiring after 40 years of service on 30th September, 2009. He worked in the institute as Mechanic Assistant in the Department of Mechanical Engineering. *I remember him as a good-natured, disciplined person who worked well with his colleagues.*

— PROF. PAREKH, (Rtd.) Dept. of Mechanical Engineering.

Restoring Serenity

■ ARUNA THOSAR-DIXIT Public Relations Officer, IIT Bombay (1986-2007)

The Powai Lake was (and is) integral to the life of every campus resident; it is like a leitmotiv surfacing repeatedly. Toddlers playing on the green slopes of the Guest House lawns while mothers, grandparents (or the occasional dad) sat and chatted, watching the sun set across the lake; students on steps or on the slope leading to the water; joggers and walkers early in the morning and evening; cricket being played on the dried-up lake bed; spotting birds in marshes and trees; a BNHS nature trek around the lake; dragging willing (or unwilling) guests through the wooded trail to the old boat-house, to view the incredible expanse of water — lake pictures and associations in one's memory are too numerous to narrate.

In my role as the PRO for the institute, the Powai Lake made its presence felt in another way. In the early years, any contact with the media or local officials, environmentalists or even 'concerned' campus residents often brought on accusations that IITB was the major culprit in the lake's degradation. Its untreated sewage was flowing into the lake, creating a nutritious base for the water hyacinth to flourish. The lake's depth was decreasing, consequently leading to the sorry sight of a dried lake bed for many months.

I recall more than one large meeting with government officials in the Director's conference room in the nineties, maybe relating to campus land encroachments, settlement of the slums along our eastern wall, or the development of Adi Shankaracharya Marg (yes, it's been a decades-long project). More often than not, IITB would be targeted for polluting the lake. One felt it was a diversionary tactic from the main topic under discussion, aimed to put IITB's side of the table on the defensive. And it did. In spite of explanations of our sewage treatment plant, it did put us on the defensive.

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Naively thinking that this issue needed to be tackled, that this negative perception of IITB needed to be corrected, I felt that a PR campaign could be carried out. Proactive PR was not part of our system, but my enthusiasm (often misplaced) back then was not subdued. Trying to get the data right, I met with the Dean (Planning), and after that the campaign suffered an early demise. The Dean, a patient and gentle professor, opened my eyes to the true facts — in attempts to make it more efficient, our outdated sewage treatment plant was releasing half-treated sewage water into the lake, and the growing campus population was rapidly creating wastewater, all of which was going into the lake. His wise advice was to leave the issue alone, since it would have only focused more prominently and negatively on our institute.

However, there were others on campus who also viewed what was happening to the lake with anguish. Some of them decided to do something about it. A *shramdan* project gathered some momentum. Accordingly, a scheme was worked out in detail, which showed that a given number of volunteers working for a given number of hours a day could cover a specific number of acres of IITB's side of the lake, and as a result, could de-weed the area! Students and residents physically removed the hyacinth growth and piled it up on the sides. IITB provided trucks to carry the weeds to the vermiculture pits beyond the pipeline. Volunteers brought their own gloves and anti-allergic ointments for the itching experienced by some of the volunteers. While the campaign got attention



(including some good write-ups in the local papers), it also had, of course, its critics. Was the problem too vast to be tackled by *shramdan* alone? Would the volunteer numbers we had hoped for ever materialise (considering water snakes and the muck)? After all this effort, would the weeds stop growing? It was seen as a quixotic venture. After about two years, this effort fizzled out.

Meanwhile, the Powai region (which had been, so far, a no-development zone) was opened up for development. This was to impact Powai Lake in a big way. Construction activity was fast and furious. Unauthorised settlements came up at a bewildering pace. Powai Lake had been a catchment basin for the rainwater, fed through the numerous storm water *nallas* from the north and south hills. The southern *nallas* had earlier carried clear rainwater. Kids living at the lakeside area of the campus (escaping parental vigilance and inviting punishment) were known to mess about in these *nallas*, catching fish, floating paper boats and building dams. But now these *nallas* had become drains which carried sewage, garbage, and silt from the quarries and debris from construction sites, and dumped it all into the lake.

On the other hand, as Powai developed, civic amenities had to be provided. The most important was the municipal sewage line, leading along the Adi Shankaracharya Marg, down to Kanjur Marg and then joining the BMC sewage system.

With the commissioning of the BMC sewage line, IITB became the first to divert its sewage. IITB's wastewater no longer flowed to the sewage treatment plant, and then into the lake. This was not at little cost and effort — the figures were in crores of rupees, as the flow to north had to be diverted towards south, joining the BMC drains at Y-Point Gate.

At last, IITB could come out of hiding on the lake issue.

2000-05 was an important period in this regard. Not only was the sewage line commissioned, but the 'Save Powai Lake' campaign began in true earnest. With complete certainty and sincerity, must one give credit to the dynamic leadership provided by Mrs. Rashmi Misra, wife of the Director, Prof. Misra. She had an uncanny ability to attract, organise and lead people. Soon, a loosely formed 'Save Powai Lake' team evolved, a team which was small in numbers, but persistent in its efforts.

Over many meetings (which were frustrating to some of us due to the slow progress), the team analysed issues, identified problems, gathered scientific and ecological facts, decided on issues to be raised and worked out action plans! It was an education of sorts, satisfying and frustrating, and in retrospect, fun and rather funny.

The team initiated awareness campaigns to draw attention to the deteriorating condition of the lake. It arranged talks, children's walks along the lake, began a postcard campaign addressed to Delhi and Mumbai's Environment Ministries and interacted with IITB's students in an effort to enthuse them. A significant activity of the team was the Human Chain on 26th January 2001, in which (besides Powai residents) 1,000 students from eight schools participated. Another successful awareness campaign focusing on lake water pollution was the 'Eco-friendly Ganesh' project, held for over a number of years since its beginning in 2003. After a lot of brainstorming, trials and

errors, the *Navsrujan* workshops were carried out. These workshops demonstrated the making of Ganesh idols from the lake's soil and the use of eco-friendly colours.

The Human Chain and the 'Eco-friendly Ganesh' campaigns caught the media's, the Powai residents' and the officials' and local authorities' attentions in a big way. The interest and response was overwhelming.

Considering this an IITB PR activity, it can be unhesitatingly mentioned here that the resources of the PR office were utilised in these efforts, particularly to get the involvement of print and electronic media.

The team's awareness activities also drew the attention of Mr. Kirit Somaiya, the MP during that time. His intervention in the issue — a petition in Parliament on Powai Lake, and following it up with the Environment Ministry (MoEF) and our State level bodies — was invaluable. This intervention resulted in the sanction and release of Rs. 6.5 crores by the Environment Ministry to the BMC, for a bioremediation project to improve the water quality, and to provide for the beautification of the lake's front along Adi Shankaracharya Marg. After some hiccups (one remembers attending innumerable meetings at BMC or elsewhere, including a tender opening meeting), the project was implemented.

IITB too, had an official Powai Lake Committee. We were now on many official bodies related to the lake, which had been set up by the State government and the Municipal Corporation, including on the Monitoring Committee for the implementation of the Rs. 6.5 crore (MoEF) bioremediation project.

Unfortunately, since the BMC was unable to do any restoration work in the bay area of Powai Lake, IITB itself decided to step in. The Estate Office employed its labour to physically remove weeds and grasses from the bay periphery, particularly in front of the Guest House and the Devi Temple. Similarly, some parts of the lake bed in front of the Guest House were de-silted by machines in the dry season.

The snowball rolled on. The 'Save Powai Lake' team's efforts attracted the alumni, particularly the class of '80. The class held its Silver Jubilee reunion in December 2005, and raised funds for a Powai Lake Legacy Project. This was mainly for the improvement of IITB's Bay of Powai Lake, and for the development of the lakeside road from Devi Temple to H-8 with gardens, a jogging track, a boat club, etc.

It was almost as if the universe had conspired to bring together support from various quarters to save Powai Lake! (One must also not forget the probable pressures and influences exerted by probable lobbies, as Powai was now a prime and prized suburb).

Powai Lake in the nineties, with all its natural ecological wealth and beauty, gave us IITians a sense of anguish and despair. In the next decade, IITB came into its own. The efforts at creating awareness about the issue and the active involvement in positive action brought a turn-around in the public and media perception of IITB's role in saving Powai Lake. From being an offender of the condition of the lake, IITB was now its champion — a concerned institution, struggling for the environmental preservation and restoration of one of its most precious assets — the Powai Lake! IITians could now sit by the lake at sunset, enjoying the peace and beauty. Serenity had been restored. ■

THE UPSIDE OF DOWN

'What's in a Name?' ■ SWEETIE AHLUWALIA

Length, mass and time - these we were told, were fundamental.



Little did we know that the miles would speed past in a second, and mass would lead to obesity. Little did I know that when I was handed that bar-coded ID-card by the security office, that eternity just lasts an hour.



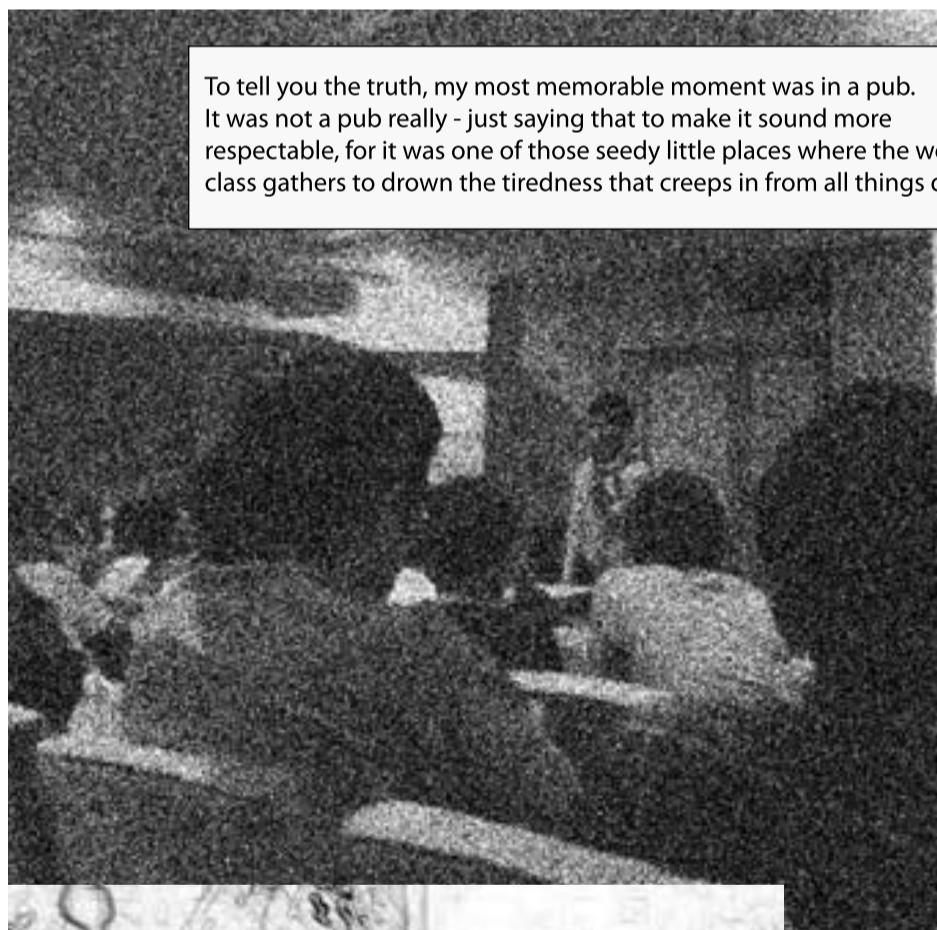
How does one keep a straight face and answer that question?

The most memorable time? Hmm. Let me think - Oh yes! How can I ever forget it?

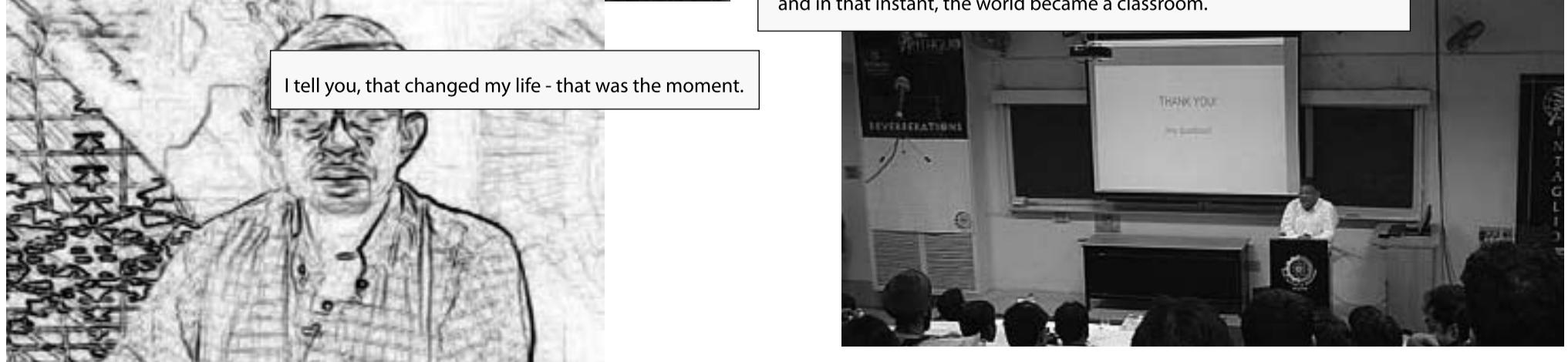


"My most memorable moment was not when I won the excellence in teaching award consecutively for the third time, but when an ex-student, whom I had flunked came up to me and said, 'Sir, if you had not been strict, I would not be where I am today.'"

"So you are retiring today?"
Tell us about the most memorable instant in your career.



I tell you, that changed my life - that was the moment.



Till that instant, I used to feel guilty about this pub-thing. Saw it as an escape from the tedium of lectures. And then I saw the blinding light - and in that instant, the world became a classroom.



PHOTO-ESSAY

■ Compiled by PURU



Tum-tum ride, ain't a smooth glide.



Packed to the brim. Half the class takes an exam in the Convocation Hall.



Wheels of motion (and obstruction?).



CS101 at Convo - Class strength > 850



During a two-day 'Advanced Workshop on Water Colour Paintings' conducted by the famed Milind Mulick, this wonderful rendition of the Devi Temple was painted on-the-spot at the location by him for the benefit of others to witness his techniques.

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