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Editorial

An Unfulfilled Obligation

In the first place, God made idiots. That was for practice. Then he made school boards.

I have never let my schooling interfere with my education.

- Mark Twain

These two quotes serve to bring home the point that the education system is not without its shortcomings. The Indian education system, for instance, is often criticised for the importance given to rote-learning, the poor quality of teaching imparted and lack of depth in the curriculum. Yet, despite its many failings, a formal education helps set a child on the voyage of self-discovery and learning. Learning to read and write can itself open up whole new worlds for an eager and inquisitive mind.

Those of us who are fortunate enough to work or study here, at the Indian Institute of Science, can attest to the rewards of education. What, though, of those children who find themselves deprived of this opportunity? Can IISc, as a recognized center for learning in the country, have a role to play in enriching these children's lives?

One does not have to look far for children who do not go to school. With a slew of new buildings coming up, from new departments to new quarters and hostels for residence, the last few years have seen construction work of some form or other across the campus.

The construction workers are contract employees. Many have migrated from different parts of the country. Do the children of these construction workers go to school? Do they benefit from the fact that there is a school within campus? If not, can we, as faculty, staff and students of IISc ensure that these children get educated during their stay here?

These are pertinent questions and form the focus of this issue. This is not the first time such questions are being asked. In October 2007, Voices highlighted the need for a Balawadi Center on campus for children of construction workers. In the ensuing two months, a fully staffed Balawadi Center was indeed set up. But due to lack of children, it was shut down a few years later. The April 2009 issue of Voices focussed on the issue of hiring child workers in the eateries on campus. As late as last year, there were children still working in a few eateries on the campus. So this problem has not yet died out.

A few students do actively seek to help children.

Initiatives such as Help the Needy and those undertaken by the Note Book Drive Team do make a difference. But by and large, this issue is met with apathy. Even if a new Balawadi Center or school is set up, there is no reason why it couldn't be shut down in the lull when there is no construction on campus, and hence, no children to take care of. A workaround would

be setting up a center that is staffed by IIScians who run the school voluntarily. That way, the school operates only when there is a need for it. The idea is worth looking into. But for this to be brought to fruition, it requires a set number of volunteers prepared to devote their time to this cause. Not just from the present batch of students, but also from those who will join in the years to come.

Can IISc afford to stand idly by and watch while a few children are deprived of their childhood within its fold? Are we obliged to help these children out, to give them a chance at a brighter future? Or is it acceptable to ignore this issue altogether? These are uncomfortable questions. But they are ones we must ask ourselves. And the answers that come tumbling out might help make or break a child's future.

K. Vijayanth Reddy (ECE/CeNSE)

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The Forgotten Children of IISc



IISc is, by nature, dynamic. The institute, over the last century, has evolved continually, trying to keep up with the needs of the country. As it evolves, its landscape changes too. Buildings come and buildings go, the old making way for the new. For this cause, toil many migrant workers, hidden within the tall Aluminium sheets covering the four flanks of their work site, playing their role in the growth of the institute. Not far from their work places, their children play away under the afternoon sun. And therein lies the stark irony. Living within an institute that is revered as a temple of knowledge, these children may never see the inside of a classroom.

A large part of the workforce employed by the contractors to work for the construction projects in the Institute, are migrant labourers hailing from other states. They go where their work takes them, often with their families staying with them near the sites. When asked till when their stay in the institute will last, the most common reply from the labourers was "When the work here ends". Sadly their children suffer the brunt of this. Many can never attend the same school for an entire academic year as their parents rarely stay that long in one place. Some wish their children to have a permanent roof over their head, instead of a nomadic existence. "I will send my children to stay with their grandparents back in our village, soon", said Shabaana*, a labourer, busy

Living within an institute that is revered as a temple of knowledge, these children may never see the inside of a classroom.

wetting the newly laid concrete at a construction site near the new Aerospace Department. Those who stay with their parents near the work site, however, are left to the care of others in the temporary tin roofed settlement as both the parents have to work at the site to make ends meet. Ramesh, a project manager with the Ramky Group who is in-charge of the construction at that site, said, "Indeed! We would love to send these children to pre-school. That way, we don't have to worry about their safety because a construction site is an unsafe place for little children to loiter around". He remembers there being a Balawadi centre within the campus a few years ago. And he is right.

A Balawadi centre is a pre-school specifically aimed for children in the age group of three to five years belonging to the underprivileged section of our society. The aim of such initiatives is to ensure universalisation of pre-schooling. It is believed that this will improve the rate of enrolment in primary education. Not too long ago (late 2007) the students and the Administration had been instrumental in setting up a Balawadi centre in the Institute for the children of the construction workers working in the Institute then. Sadly, as the construction projects got over and the workers left, the centre was closed down. According to some workers Voices spoke to, the place near the Water Recycling Plant where a

new canteen is coming up is the place where this Balawadi centre once stood.

Back at the construction site, the site in-charge seemed oblivious to the presence of the little ones in the settlement right next to the site. When prodded further he admitted their presence, "Yes, there are children, but they are all small, some three or four years old. No one is older than six". He said, "We are ready to even sponsor their school uniforms and books, but the parents are not interested in sending their kids to school. They stay for no longer than six to eight months." He has been in the institute for 7 years. When asked about the old Balawadi centre, he admitted he didn't know there was one. "If they open it again, I'll encourage my labourers to send their children there. I'll also arrange a vehicle to take them to school and bring them back." He mentioned the tens of thousands of rupees they donate to a school nearby, the management of which approaches them for donations, on a yearly basis. One might wonder, if true, how the management could miss seeing the children that play on the path that leads to their generous donor's office.

The people behind the Note Book Drive initiative too, were at one point, keen on making sure these children get primary education. When asked about their view, they said, "We started 'Reach and Teach' 3-4 years back; aimed at the children of construction workers but we had lot of difficulties in taking the initiative forward. The main difficulty we always faced was the shorter time duration for which they were present in the institute. The labourers mostly used to change. Also, once Prof. Prabal Maiti (from the Physics Department) started discussion with the administration to have a permanent crèche for those kids in IISc, but the administration never really responded". Even after repeated attempts, the Voices Team could not get any response from the administration in this matter.

"It would delight us all if these children could go to school", said Babu, a bachelor new to the settlement. "Would you like to go to school?" he asked little Ismail. He nodded a quick "No!". And everyone around laughed. One of the elders near him smiled and said "No, my boy, be a good kid and go to school." Indeed, who, among those who live in India's premier research institute, would know better the value of educating the young, than the ones who were denied it in their youth.

**All names have been changed to protect identities*

Arjun Shetty (ECE), Arpita Mondal (CIVIL), & Ranjith Warriar (AERO)



Excerpts from the Contract Labour (Regulation and Abolition) Central Rules, 1971:

"A Creche should be located within 50 metres of every establishment where 20 or more women are ordinarily employed as contract labour. While the Creche should be conveniently accessible to the mothers of the children accommodated therein, it should not be situated in close proximity to establishment where obnoxious fumes, dust or odours are given off or in which excessively noisy processes are carried on... Accommodation in the Creche should be on a scale of at least 20 sq. ft. of floor area per child. There should be a shady open air play-ground suitably fenced for older children...The Creche should have first-aid equipment kept in proper condition. Every child should be medically examined before admission. There should be medical check-up of the children once a month and their weight recorded once a month. A record of the periodical medical check-up should be entered in the record of medical examination of each child kept at the Creche..."

Sources:

http://labour.nic.in/upload/uploadfiles/files/ActsandRules/Service_and_Employment/TheContractLabour1970.pdf

http://www.lawsindia.com/Industrial%20Law/c_036a.htm

A Brush with Harsh Reality

It was August, 2012. A new wing was being constructed in our department. There were truckloads of bricks, sand and gravel. Many construction workers had arrived as well. Suddenly, there was lot of chaos around us, contrary to the usual serenity exuded by the Maths department. Amidst all these activities, my friends and I could not help noticing the construction workers' kids. They were only living their childhood. A girl, 6-7 years old, named Madhavi, a 5-6 year old boy called Ananda and the cutest one called Saraswati of around 2 years of age were sitting in a heap of sand, playing with it. Madhavi was taking care of Saraswati and Ananda was doing all sorts of mischief. Apart from being like other normal kids, they were also detached from the material things which many privileged kids are provided with these days. This made them more content and happy. We just adored them, especially Saraswati. They waved at many people who passed by that place.

As some more days passed by, we wondered if they could go to school. It was not a good sight, seeing them playing around in pebbles and mud the whole day and wasting their precious time, which could be utilized in a better way. Those innocent and smiling faces had no idea that they were being robbed of their right to learn.

We decided to do something about it. Our mother tongue is not Kannada. So we approached an office worker in our department, Paramesh, to talk to the parents of those lovely kids. They were siblings and their father's name was Hanumantha Rai. They were originally from the Gulbarga district. Hanumantha told us that Madhavi had been going to school in their hometown but had to leave it in the middle before coming to Bangalore.

We figured out that there was a Karnataka state board primary school near Gymkhana, IISc and they could admit these kids. With the help of Joy (a Notebook Drive volunteer), we managed to convince Hanumantha to send Madhavi to school. However, he did not want to send Ananda. We thought that after some time, Ananda might also join Madhavi.

Madhavi got admitted into the primary school. The school authorities gave her books and a bag, too. Hanumantha used to take her to school every day on his bicycle. We even offered that we could drop and pick up Madhavi from the school but he continued on his own. Madhavi was more than just happy. This continued for approximately two to three weeks. During the Dassehra holidays, Hanumantha and his family went to their home town. Everybody came back except for Madhavi. Hanumantha would tell us every other day that Madhavi would be back next week as she was with her grandmother. The next week never came.

In the meantime, some more kids had arrived at the construction site. They were two girls, Anita and Geeta. They were sisters and were six and four years old, respectively. We thought that we had another chance, and we wanted to do better this time. With the help of Pranav (Maths) and Arun (CSA), we could convince Anita and Geeta's parents to send them to school, on one condition - which was to take the responsibility of



(Left to Right) - Geeta, Sarawati, Ananda and Anita

their daily commute to school. Anita's mother also wanted us to talk to the contractor before taking the kids to school. We talked to him and he seemed to be fine with the idea. During that conversation, some of the workers told us that Hanumantha was scolded by the contractor one day for coming late to work as he had gone to drop Madhavi to school. We did not confirm this from Hanumantha though. Hanumantha's wife then revealed to us that he had sent Madhavi back so that she could stop going to school and that he had been lying to us about Madhavi coming back. When we tried to convince Hanumantha to send Ananda to school, he completely refused, even when we offered to take the kids to school on our own.



Sarawati, Geeta, and Anita also seen in this pic.

Here we were, in a very helpless situation. Belonging to an institution where the highest level of education takes place, it made us question if it really meant anything when there was no education at a basic level.

Anyway, we managed to take Anita and Geeta to school. The principal of the school was a bit reluctant this time because of Madhavi's absence but on our assurance, she did admit them.

My friends Lakshmi, Pradeep, Ashish and I used to take them to school in turns. Those girls were having a real good time. Two of my friends Maya and Jaya even tutored them to make sure that they were learning. Geeta specially needed extra guidance as it was her first time in the school. In fact, all this motivated another

worker to send her daughter to school along with Anita and Geeta.

Again, this continued for three weeks. Then, they had to go to their native place and there was a Christmas break as well. What we feared came true. They, too, did not come back. The construction work was coming to an end as well. So there weren't any new families arriving at the construction site. It was then time for me to leave IISc and my other friends got busy with their thesis defense.



(L to R) - Geeta, Anita, Jyoti

We just hope that whatever we did, it at least forced the workers to think about the importance of studies. But the issue of the education of construction workers' children is still not solved.

One of the major problems is that these construction workers do not stay at a place for too long. So it is difficult to keep track of them. Secondly, if they are serious about sending their kids to school, then they would at least make a sincere effort into it. One such example is Hanumantha. He stayed at the same place from the beginning. If he wanted to, he could have continued sending Madhavi to school or even Ananda, too. Later, one day, Madhavi's mother told us that Madhavi was going to school at their native place. We would like to believe that but we don't know the actual truth.

The most important thing is to make the parents realize the importance of basic education. If they are convinced, then half the job is done. We can start it at least in our own neighbourhood first and make a difference!

Jotsaroop (Alumnus, MATHEMATICS)

Students Protest Proposed Rise in Mess Bills

"Food for thought" read one placard. "Research α Health; Health α Food" read another. These and many more placards swayed in the breeze as a few hundred strong group of protesters held them high, silently marching to the Main Building of the Institute.

The boarders of all the messes, unhappy with the Institute's decision to stop the financial aid to the messes, held a peaceful protest march on the 12th of July, 2013, the first of its kind in a few years. With the Institute stopping the financial aid for the messes, the mess bills were expected to go up by Rs. 800 to 900 per month according to some estimates. Thus the student community wished for either a hike in scholarship or the continuation of financial assistance for the messes. A silent protest march was organised by the Students' Council to make the dissatisfaction of the students known to the administration.

The students assembled outside the A and B messes at two in the afternoon. Some turned up even sooner, to help make the placards and organise the march. A few security personnel and an ambulance were kept at stand by, in case the situation went out of control.

However the crowd was very peaceful in their protest and no untoward incident happened. The protesters started their march towards the Main Building a little after 2pm and on their way they went past all the major eateries and messes in the campus. People at the C and D messes, at Nesara and at Prakruthi were all witness to the large group of students on the march to the Main Building. The group finally reached the Main Building and then settled down outside the building, resolving to stay put till the administration heeded their demands.

The Director, Prof. P. Balaram and the Associate Director, Prof. N. Balakrishnan came out of their offices in the Main Building to address the protesters. The Director said that he understood the problem to be two-fold. The first issue was that the students wanted a hike in the scholarship to end their financial woes caused by

the price rise over the years. The second was that the students wanted the administration to continue the financial aid given to the messes which helps in bringing down the mess bills to manageable levels. As regards to the first issue, he said that little can be done at the Institute level since the decision regarding the scholarship hike is something that is taken by the Government bodies entrusted with such tasks, such as the MHRD, DST and the like. However he agreed to get the Institute administration to try and help in speeding up this process.

The second problem, he believed, was more of a local one, since it was restricted to the people and the policy within the Institute. He said he understood the woes of the student community, and that he'll try his best to reduce the burden on the mess boarders, come August.

Wishing for a more concrete assurance, the protesters decided not to budge from the front lawn of the Main Building. To this decision the Director responded by stating that assurances are not something to be made so informally to a crowd and invited the Students' Council for a formal meeting on the following Monday to take the appropriate decisions. The protesters, convinced that their voice had been heard, decided to end the protest for the time being and the crowd dispersed.

The Students' Council was notified by the Chairman, Council of Wardens on the 19th of July, 2013 that status quo would be maintained by the Institute till December 31, 2013 and that the financial aid would be equally distributed between all the existing messes. The SC plans to meet the Associate Director and discuss about the possible solutions to the situation that will arise after December 31, 2013.

The outcome of the protest march was definitely a welcome one for the student community, particularly for the Master's students whose consolidated stipends are just about sufficient, if not less, to make both ends meet.

Voices Press

Notebook Distribution

The “Notebook distribution” programme organized every year by the “Notebook Drive” (NBD), an IISc students’ initiative, has grown into a beautifully green “wishing tree” raining different shades of happiness and joy across various government schools in and around Bangalore. It was a seedling with that colloquial hope to grow big some few years back but, like the exotic sunshine and the invigorating water the relentless and sprightly volunteers have nurtured it into what it is today - A “wishing tree” as I had rightly said.

Like every academic year, NBD started its activities with “Notebook distribution” this year too. 27 government schools in and around Bangalore were covered under the programme this time.

The event began on an eventful Wednesday, the 19th of June. Distribution of notebooks (single lined, double lined, four lined, square lined and long ones), Math books (donated by Biocon), stationary (color pencils, felt pens, pencils erasers, sharpeners, rulers and pencil boxes name) and sports items was carried out in Jalahalli schools.

It was followed by Kolar schools on 20th, Magadi schools on 21st and Chikkabanavara and government schools around IISc on 22nd which marked the end of the grandiose event.

There is an inexpressible joy in spending time with kids, seeing them laugh to their heart’s content, seeing happiness seeping through their souls when they lay their hands on something new and you get to enjoy

every bit of all of that when you are a part of the “Notebook distribution”. The happy faces of the kids, their ear-to-ear grins, their glittering eyes are a sight so fulfilling and an experience so enriching that no amount of money can buy it and no amount of time can decay it. The happiness of being a part of “Notebook Drive” is so contagious and intense that it grows within you and lingers on for a long time. Wise men say, “happiness has no language”, and you will find the true meaning of those words when you see the little angels smile.

With the untiring efforts of 55 zealous volunteers the entire distribution programme was carried out in a very orderly manner. Everything was almost perfect. The programme got a fuller meaning when teachers of some of the government schools reported an increase in student strength after it had been conducted. The goal seemed to have been achieved. NBD’s language of ‘encouragement’ seemed to have struck the right chord.

Organizing such a gala event isn’t really easy but NBD with the help of the contributions from the volunteers has made “Notebook distribution” a soaring success story.

To relive your bygone childhood, to get a piece of the joy cake, to forget the grown-up blues, to get hold of the lost innocence come be a part of our story. Let us together make NBD a never-ending tale of pure bliss and ecstasy. Let us reach out to many more cherubic souls. Let us restore the good that exists. Let us keep the chaste smile intact. Let us value the simple joys of life.

Together let us make the world a better place to live in.

NBD Team



Students' Council News

It's been more than a month since we took office as the Students' Council, IISc for the term 2013-14. Most of the activities that we had planned have been initiated and our team of volunteers is working hard to maintain smooth functioning of the council. A brief write-up about the current operations of the students' council is given below:

Firstly the committees of the council were formed and their respective coordinators were assigned.

The Academic Committee conducted a survey on academics related issues faced by the Institute and prepared detailed reports that were presented at the Chairman-of-Departments (COD) meeting. Some of the issues highlighted were scholarship hike, delays in thesis review and reimbursement of travel grants, periodic evaluation of research progress etc.

The Amenities Committee conducted a survey regarding the price hike at Prakruthi and their report has been presented to the registrar for intervention. The committee has also undertaken the repair of the cycle pump and they are actively monitoring the quality of other campus amenities.

The Placement Committee is working towards making the upcoming placement season a successful one.

The Hostel Committee has identified existing issues in the hostels (such as common room facilities, condition of UV filters etc.) and is actively engaged in solving these problems. They are also working towards making the complaint & subsequent repair system more efficient.

The Women's Welfare Committee has taken up the issues of campus & hostel security with the chief security officer. A plan will be presented to make the campus safer for our female students. A women's healthcare camp is also in the offing.

The Cultural Committee has been busy planning the first major cultural event to be organized by the new SC.

The Environmental Committee is working towards installing more dustbins in the campus and improving waste segregation, setting up a plan for proper management of hazardous laboratory waste and taking steps to minimize detrimental interference with the flora and fauna of the campus.

The Web-designing Committee is working on a comprehensive online career development portal and an online interaction forum for IISc students.

The students' support network at present needs more volunteers for the post of students' counselors. We invite empathic and understanding students who have a penchant for helping out others to come forward and join the committee.

The Health Committee is organizing a blood donation camp on 15th August, 2013 and students are invited to participate in large numbers for the same. Other health camps (eye-camp, dental camp) are also being planned. Spreading awareness about the facilities offered by the health centre has also been taken up.

The Social Committee organized the 'Help the needy' drive and items that were donated for the drive will be distributed in nearby slums, orphanages etc. The Committee is also looking into other issues like food wastage, paper recycling and the living conditions of workers residing in the campus.

We require and invite volunteers for the UG committee.

The Married Students' Welfare Committee is focusing on making the allotment of hostels for married students more transparent and improving the conditions of these hostels.

The Nation First Initiative has sent a team of volunteers to Chandrapuri, Uttarakhand and they are engaged in relief and rehabilitation work for the people affected by the calamitous flash floods. The work requires a few months for completion and NFI will keep sending new teams to Uttarakhand to continue the relief and rehabilitation work.

Last but not the least, even though the Mess Committee is an independently elected body constituted to look after running of the messes, in the light of the inconveniences faced by a large number of students, the Students' Council has worked in tandem with the Mess Committee to try and resolve the issues. Together, we were successful in preventing closure of C-mess and enabling free flow of 2012-batch students into A, B and C messes. Tenders will be released for catering services at the D-mess after 6 months. Privatization of the old messes has been prevented and we are now working on reversing the decision to remove financial aid for the messes.

We are trying to address all the issues faced by the students of our institute to the best of our abilities. We need more dedicated people to help us perform efficiently and interested students are welcome to join committees of their interest.

Students' Council

Voices is Growing!

If you wish to join Voices, or wish to contribute an article, or have any comments, write to us at voices.iisc@gmail.com.

Samanway – 2013

Main Event

On the backdrop of IISc being ranked 35th in the Global Employability List after jumping over a hundred places in the list, for the first time in its 104 years of existence, IISc's first ever career fair - Samanway '13, was conducted by the Students' Council with the motive to connect the rich academic world flourishing amidst active research of IISc to the contemporary developments in the industrial world.

The JN Tata Auditorium on April 6th served as a meeting place for the students and many renowned automobile, software and defence firms. Be it the mature and wise postgraduates or the young, wild and carefree undergrads, the participation and the enthusiasm displayed was the same. Over 800 students registered to meet representatives of over 40 companies that turned up. The place was bustling with activity as the students flitted from one stall to the other, enthusiastically sharing their research ideas with the representatives who were equally enthusiastic to lend them a patient ear.

The event started off with an invocation prayer and the ceremonial lighting of lamps. The convenor of Samanway, Vipin Gupta began by addressing the gathering and stated that the primary intention behind this new initiative was not just student placements but rather to bridge the gap between the academia and the industry.

The initiative was encouraged by the IISc Director Prof. P. Balaram, who congratulated the organizers and also assured them that the institute will work towards making Samanway an annual event. Prof. Balaram in his address to the audience stated that academia-industry interaction is a two-way process. There are some industries that receive tax concessions and it should be an obligation for them to interact with academics and give back to the government that gives them tax subsidies.

The Fair not only attracted big names like Honeywell, Bosch and IBM, but also many newly established and developing firms who wanted their own share of the bright minds of IISc. Many of the companies that had hired IISc alumni were expressing their eagerness to hire more students from the Institute.

IISc alumni working in these companies were also not a very uncommon sight. Once students of IISc, like the many assembled in front of them, today they were experienced and successful people who had come back as representatives for various companies. They were excitedly sharing their own experience and were advising the students about the industrial world and the company they represented.

The portfolio, which was one of the points in the "to bring" lists put up, was received by the companies with great expectations and the representatives promised to forward the profiles to the appropriate people.

Awanti Sambarey (BC), one of the organisers, was kind enough to talk to the Voices team and she stated that

although the event was a success, the organisers want to make Samanway an annual event and hope to conduct it on a bigger scale in the coming years. This year, Samanway had registrations from 50+ companies and from 800+ students.

The Voices team also interacted with the company representatives to know their expectations while registering for the career fair of India's premier research institute. The companies ranged from startups to industrial heavyweights to government research labs like DRDO. Their expectations from the students also varied accordingly. TurtleYogi, an IIM Bangalore startup dealing with a new technology that reduces the bandwidth required for video calls, stated that they are quite open while recruiting. They are willing to look at any candidate who is enthusiastic and willing to learn. An established name, IBM stated that due to the wide array of operations, their expectations from the candidates depend a lot on the position they are recruiting for. For example, for some jobs they might be willing to take on a candidate who is enthusiastic and willing to learn while there may be some high end technologies where they require at least a master's degree in a related area before they consider the candidate. Overall, the companies were excited and looking forward to participating in Samanway in the future.

Panel Discussion

The main event was followed by a panel discussion which featured Prof. S. Mohan as the moderator. The panelists consisted of Prof. Raghunandan - the Dean of Engineering, IISc, Prof. Siva Umopathy (IPC), Prof. Rudra Pratap, Chairman, Centre for Nano Science and Engineering (CeNSE), Dr. Swami Manohar, ex-faculty, IISc and entrepreneur (founder of companies like Limberlink and Picopetra Simputers), Dr. Guha, Deputy General Manager at Bosch, Dr. V. C. Padaky, Director DEBEL (DRDO) and Dr. Shyam Vasudevrao, Innovation Manager at Philips Innovation Center. We present below a brief abstract of what each speaker had to say, followed by a brief synopsis of the group discussion along with the participation of the audience that followed.

Prof. Raghunandan: I must congratulate the students. What they have done over the past 3 weeks is marvellous. Samanway is not just about getting placements. It is for the industry and the students to get to know each other better. IISc is well known for (its research programs) in the press. What is rarely projected is that there is an ME program. I would like to tell you that all our ME students are admitted through a national examination and we get some of the best brains in the country. Sometimes we faculty and students do a lot of introspection on what we can do to make things better. We have these reviews to access the performance of departments as a whole. One thing I would like to point out is that all reviewers are from academics. We should have industry representatives also (as reviewers) and get their inputs to know what they are looking for in our people. Our curriculum review should involve people

from the industry to know what they are looking for. I would say that IISc is conservative, but it is opening up to the winds of change.

Prof. Siva Umopathy: I would like to congratulate the SC for organising this event and for being successful at it. Just like we have an annual open day at the institute, we should have an open day for companies and industries in our institute. This will be a day when our industrial partners can go around and visit our labs and facilities. I was very worried when I initially started interacting with the industry, wondering what a scientist like me can contribute. I had the patience and willingness to learn their problems and they had willingness to use new technology to solve their problems. Our students are well trained and given a problem, they are capable of thinking how to solve it, how to break it down and solve it within a target frame. Our students are well trained to take on and solve the problems that industry faces.

Prof. Rudra Pratap: When we were setting up this facility (CeNSE), we broke all the existing rules. We made new rules. We had to make everybody ranging from funding agencies to the administration to change their traditional ways to come up with this centre. We have to think beyond the limiting cases. We produce 2 kinds of output; the physical output which is 'students' and intellectual output which is 'research papers'. Our output is your (industry's) input and if you want to have a say in your input, you should interact with us. We are welcoming you to get involved in our lives. We make intellectuals, people who figure out what the problem is. Our strength is teaching and training students to be the highest possible thinkers. If you (industry) think that in the process we need to modify anything then we are all ears, we are listening.

Dr. Swami Manohar: I was a student here and later on, a faculty. At a point when we were working on the simputer, we realised that the existing mechanisms were not enough to meet our expectations. At that time, entrepreneurship was not an option like it is today. With a nudge and encouragement from various people, we started the faculty entrepreneurship and SID and companies like Picopeta, Strand Life Sciences could come into existence. As Prof. Rudra Pratap pointed out, existing rules can be an excuse for not doing something. You should make new rules or modify the existing ones. IISc is a place where you can get what you want if you want it badly enough. I was a little concerned when I heard that a thing like this is for placements for IISc students. I feel that IISc students should not worry about placements. I recommend that you (students) start interacting with the industry as soon as when you join IISc. It benefits both. Students get to find out what is industry, what kind of problems are solved and what you can do to update knowledge to fit in better in the industry. For the industry, it is not a right way to say that you will come for one day placements and hire the students. You should catch them when they are entering the institute. You get to know them better, you can get them involved in what you are doing and you get this energy free of cost. This interaction benefits both the students and the industry.

Dr. Syam Vasudevrao: I have started 2 companies, MIMO wireless and Forus Healthcare. Healthcare is a booming industry. Currently, in a country like India, only 10% of the population's needs are met with regard to healthcare. A big challenge in healthcare is that it is multidisciplinary. IISc is suited for multidisciplinary work because almost everything is available in one campus ranging from physics to cell biology. As Dr. Swami Manohar pointed out, instead of being job seekers you IIScians should be job providers. SID is a wonderful facility and I am thankful to all the people who have started it. In today's world, there is no limit for what can be achieved.

Dr. Guha: Thank you Prof. Mohan for having me here. IISc is a premier institution and we are a major consumer of what IISc has to offer. For example, we take consultancy from the professors here. We (Bosch) know the problems and we have the resources to solve them. What we need is in-depth knowledge and that is where premier research institutes like IISc help us. Fifteen-sixteen years ago when I joined Bosch, the no of employees was just 200 to 250. Now it is 12000. We have grown. We need technical expertise that is present in academia and the one we are using the most is IISc. This is because they have the best faculty and importantly, they are very approachable, open, willing to listen to our problems and willing to give concrete ideas. The new centre - Centre for Cyber Physical Systems was from a grant from the Bosch Foundation. To celebrate 125 years of Bosch, we are giving away close to 23 million euros over the next ten years. Also, whatever comes out of the Centre (like patents) belongs entirely to IISc (and not Bosch). We don't interfere in the Centre's working but there is a caveat: you must make use of the funds and you must be self-sufficient with the help of the output that comes out of the Centre in a period of 5 to 10 years.

Dr. V. C. Padaky: At the outset, it gives me immense pleasure to be in the presence of the bright and young students of IISc. I was a student in the Physics Dept. After my PhD, I spent a few years at DAE and then I joined DRDO. The strong foundation I got during my PhD helped me break up the problems into smaller ones, solve them and in the process solve much bigger problems. DRDO is a very big organisation. I work in the Life Sciences Cluster which has nine labs and DEBEL is one lab out of these nine. We work on bio-medical devices and systems which are very specific to armed forces. For example, a fighter pilot will lose consciousness within 3 seconds of taking off if he is not wearing the suit we developed at DEBEL. We have 75 scientists from 13 disciplines. Learning each other's "language" itself is a big task in such an interdisciplinary environment. DRDO is neither an academic institution nor is it an industry. It is somewhere in the middle. It knows how to fill in the gaps. We do that by having research boards. These research boards interact with and give projects to universities. Much of our research happens in IISc. Currently our human resource is not really enough. We have (around) 7000 scientists, 10000 technical staff and 10000 support staff. One probable reason why not many bright minds want to join DRDO might be the fact that the pay package is not comparable

to other private industries. However, I would like to tell you about the internal satisfaction that I derive from cracking problems that concern our soldiers. Also, our country is literally bleeding from importing equipment. Sometimes, the cost ratio of imported equipment to indigenous developments can be as much as 1000:1. This is all the tax payer's money that is getting spent.

Students/Audience Feedback

Ram (CPDM): I came to know about the kind of problems that the industry faces. I would like to thank the professors for supporting the event and the industry people for being so humble and for interacting with us.

Pankaj Jain (MBU): Earlier, I did not want to go to industry and wanted to go to academics only. Now, I realise that there are other options also available to me and would like to explore my options in industry like the DRDO labs. I got information about many things and it was a good experience. Hopefully it will continue every year.

Neeraj Sharma (ECE): I would like to thank the SC team for organising this event. We hope that this is done on a bigger scale in the future.

P. Siva (UG): I would like to thank the SC for organising this event. It was a good experience interacting with people. Two years back, before joining IISc, I used to see ads by big names from the industry like Saint Gobain, Bosch, IBM. I used to read about achievements of organizations like DRDO and Bosch, and they were like a distant dream for me. But now, after joining IISc and attending this event, all those dreams feel so close and tangible.

"Samanway seems to be a very good platform for the industrial world to recognize the newly started UG program in IISc. It was a great experience to interact with representatives from DRDO, IBM, Honeywell, Motorola etc. I really look forward to work with these people and I am also excited about the next years' Career Fair as well." Mahesh Reddy, an undergraduate student, voiced his excitement.

"I had always wanted to work for DRDO, today I had an opportunity to meet people from there and got to know more about the kind of work that is going on there and the kind of skills I am expected to have to join DRDO", put in another enthusiastic undergrad.

At the end of the panel discussion, Awanti specially thanked Prof. S. Mohan for all his help and his encouragement from the inception to the execution of the event. Javed (ECE), a member of the organising committee, said that it is a proud moment for him. Forty days back he was at a mess table discussing with his friends why can't they have an event to bridge the gap between industry and academia and now, thanks to the wonderful team of organisers, forty days later, the dream had become a reality. The event concluded with the vote of thanks by the co-convenor Bipin.

The fair left many students in an exuberant mood as their research ideas invited an awed response from the representatives. Overall, Samanway was a grand success and left the students in high hopes and a lot of expectations. The students slowly dispersed with a silent prayer for a Samanway'14 to be even more successful.

Arjun Shetty (ECE/MRC)
Ranjith Warriar (AERO)
Siva Prasad (UG)

Sign Cynicism

When I entered the Indian Institute of Science on July 30, 1999, I told myself, "This is where I am going to be for the rest of my life." The sudden drop in temperature by a couple of degrees, the serene atmosphere, the beautiful green cover that is home to so many happily chirping birds, the unfolding landscapes, the absolutely stunning and imposing main building of the IISc, everything adds to the enriching experience of an IIScian. For most of us, IISc eventually becomes an addiction for which no antidotes are available. Sometimes I feel I have been a campus bird for too long -- there have been weeks at a stretch when I haven't even stepped out of the campus for fear of losing my sanity and peace, because, among the many things intolerable in the outside world, the maddening traffic and noise top the list. It is just so insane! A little trip to the nearby Malleswaram area drives you crazy and makes you long to "go home." The other day, I just took a left turn at Malleswaram and then entered into a lane, only to discover that I was going upstream. Then I found a little board hiding behind a tree trunk, which said "No entry!" While I halted momentarily, I was horrified to discover a BMTC bus advancing with all its might. Who would take a *panga* with a BMTC bus? I rushed to a side, took a quick U-turn, discovered I was not run over

and still alive, and then drove alongside the bus, which disapprovingly pumped thick fumes of smoke right in my face. The bus driver gave me a nasty look and said, "Yaava ooru guru?" I finally managed to reach the clinic I wanted to go to, where I saw a rather interesting sign in the waiting room, "Caution: Lungs at work. No smoking!" Poor cigarettes can't compete with BMTC buses. If you observe closely, most BMTC buses have a funny sign written on the back side, "Non-polluting vehicle." Of late, there are many Vajra buses that ply on the Bangalore roads - I like those buses more than the BMTC ones, not for the air-conditioning (which is anyway switched off soon after it starts, and substituted by a suffocating blower), but for the hermetically sealed glass coverage. Thanks to the glass, you don't see elbows and faces protruding out of the buses, and most importantly you don't have to worry about protecting yourself from the *paan* leftovers jetting out of the window.

While driving amidst the terrible traffic in Bangalore seems to take away the very pleasure of driving, I have slowly discovered that the roads and the traffic, with all the numerous signs and creative instructions make a very amusing spectacle. The newly constructed subway near Prof. C.N.R. Rao circle defies all logic, at least for

the time being. A professor colleague observed "One has to take two U-turns to go straight!" It is probably one of its kind. And then, when you enter the sub-way, you might want to keep to your left, but when you emerge out of it, you find yourself on the right side of the two-way road and then at the next signal junction, you have a chance to cross and go over to the right (as in correct) side of the road, which actually happens to be on your left! How logical! A little further, there is a billboard on the pavement that reads, "Death caused by drunken driving is not an accident. It is culpable homicide." How many of us actually drink and drive unaware of its harmful effects? How many commuters actually understand what culpable homicide is? Most fashionable youngsters drink and drive with a purpose. At Ramaiah circle, there is a board that conveys a subtle hidden message, "Don't drink and DrivE. Your next victim?"

On an expedition to the Devanahalli airport, I found numerous traffic signs, some in Kannada, some in English, attracting attention, "*Athi vega, thithi bega!*" This is so threatening, but does not seem to deter people from speeding. A few kilometers from Sahakaranagara, I found yet another creative instruction, "Better helmet, than hell-met!" How subtle! A few more kilometers further down the road, I was completely bowled over by this absolutely fascinating piece of warning, "Better to be Mr. Late than to be Late Mr." Now, this time, I asked the cab driver to slow down a little, and told him I wanted to make it to the airport, even if a little late. :) Yet another board said, "Always stay in lane." I wondered how anyone could get anywhere, if they always stayed in lane and never changed it. A few more kilometers ahead, I found a more reasonable "Follow lane discipline" sign.

During my many trips to other cities in India, I have realized that roadside creativity is on the rise. Hyderabad, Calicut, Delhi, Vellore, Kolkata, every city seems to be catching up! Most compound walls of buildings and organizations are home to many street-side "pee"rs who literally target the writing on the wall, "Do not urinate here." *Kaala akshar bhains barabar!* Half of Mumbai's street-side walls of buildings have "*Thuka naka*" inscribed on them, but it just does not seem to work. People have come up with the most innovative solution to this problem that seems to work perfectly in India -- putting ceramic tiles containing pictures of various Indian Gods! You will find a fairly exhaustive collection of Gods on those tiles. That way, some level of communal harmony is ensured and even Gods don't feel left out nor specifically targeted! How secular! How ingenious! Not just ingenious, but "indi"genous! (borrowed that one from DDLJ). Surprisingly, this solution was found to work even in some Government buildings, (for example the General Post Office in almost any city) where the Gods have found their abodes in the corners, and mostly on staircases. Why the corners, of all places in the building? Of course, we need them there because most *paan*, *ghutka*, and tobacco leftovers from various employees working in the building eventually land there creating some kind of modern art. Munnabhai's Gandhigiri gives way to Bhagwangiri! Law does not work. The Gods have to descend to prevent people from urinating or spitting on the walls. It happens only in India!

While in Hyderabad, in Osmania university campus, on the pavement near a speed-breaker, I found a rusted little board dangling for years now, but still struggling to convey to commuters, "Speed thrills, but kills." Just outside the university campus, near the Tarnaka flyover, one finds a big board stating "Drive like hell and you will get there." I never knew the route to hell was so direct. Moreover, while speeding is guaranteed to take you there, driving slowly does not seem to take one to heaven. Also, those driving down to hell are likely to take some others along with them.

The last time I was in Delhi, I found numerous barricades on some roads, which slowed the traffic, but then the Delhi police had justification. There were panels attached to the barricades that said, "True, we slow you down, but we try not to let criminals slip by." While I appreciated the thoughtfulness and responsibility conveyed by the message, I am still not sure if one could identify a criminal by the speed of his vehicle! That would be a tough inverse problem to solve with immense potential to attract lots of funding from homeland security agencies.

On one of those GATE exam trips to Calicut, I found an innocuous warning to commuters at a signal junction, "Jumping the signal is fine!" "Wow! How liberating! After all, I am in God's own land," I thought, but then I realized that it was a word-to-word translation from the local language. To the locals, it probably means correctly that fine will be levied for jumping the signal. My suspicions about my theory of the influence of our mother tongue on our English were confirmed when I visited Kanyakumari on one occasion and found, near the sunset spot, a big signboard that said, "Bay and use toilet!" In the toilet, I found a little disinfectant bottle in a corner, on which was advertised, "Kills bugs dead!" I left the sunset spot wondering if there was any other way to kill without causing death. I was also reminded of a funny sentence that my classmate wrote in his exam paper, which our English lecturer read out aloud in the class, to everyone's amusement, "They not only killed him, but killed him to death."

On a recent trip to Vellore, we had to pick up a colleague on some 80 feet road in Bangalore. I have never understood the "80-feet road," "100-feet road" nomenclature in Bangalore. I have always wondered, "Is it the width, length, or the diagonal?" Given the condition of most Bangalore roads, I would not be surprised if it is actually the length of the road. A newcomer to Bangalore would be thoroughly confused. In general, how would anyone know the dimensions of a road just by looking at it? Well, I am told by some of my students who were born and brought up in Bangalore that, at one point in time, there was only one 80-feet wide road in Bangalore. Although that exclusivity is now gone, the naming convention still continues. We finally managed to receive our friend and continued along the highway, where we came across a masterful jugglery of words, "Know safety, no injury; No safety, know injury!" The traffic police must have hired a high-school English teacher to come up with that one. A little further and we found two more: "Fast drive could be your last drive." "Be alert. Accident hurts." Apparently no one seemed to know that accidents hurt. And then came a simple key to a long life,

“Lane discipline gives you a long life.” Finally, we went inside a university college campus to attend some meeting there. The university seemed almost like a high school with so many tiring “Do’s” and “Don’t’s” boards every few yards, including some that said, “Don’t sit here.” “Don’t spit here.” “Don’t stand in the middle of the road.” I thought that people in that university must actually be standing in the middle of the road, otherwise, those boards would not be hanging there.

Coming back to the roads, I have never understood the purpose of the white and yellow paints nor the zebra crossings when it comes to Indian roads, commuters and pedestrians. It is a huge waste of paint. I have always found the “Follow traffic rules” to be the funniest of signboards! With half of the road occupied by *thelawalas* and cars parked right under the “No parking” sign, manholes occurring in both open and stone-covered varieties, elevated at least a foot above the rest of the road, ditches and overflowing drains, sand and gravel flowing from a nearby construction site, a little branch of a tree planted in front of an open manhole silently signaling that there is potential danger, the “effective road” is only about one-third or even less, of the actual road width. How then does it matter if the road were actually 80 feet wide? Isn’t it a stunning feat that many of us (on an average) manage to drive on such roads and still reach our destinations in one piece? Many two-wheeler drivers face all kinds of challenges. They have to stop and pull over to a side if they find a train going overhead on a bridge; not because there is a V.I.P. going in the train, but because they want protection from the toilet flushes dropping from the top. How disgusting! Our prestigious Indian Railways could not hire even one sensible design engineer who could think of efficient

ways of handling human waste! In addition, strewn all along the railway tracks are “kilometers of plastic waste.” Kilometer is now a new “unit” to measure plastic waste. Neither the passengers nor the Indian Railways seem to care about what they are doing to the environment. The Indian Railways owes a huge penalty to all the cities, towns, and villages they chug through to handle all the plastic waste they are giving rise to.

Back in IISc, we are slowly becoming more Bangalorean than before. Vehicles in IISc now go much faster than they used to a decade ago. The number of vehicles in the campus has also gone up by an order or two. Speeding and screeching have replaced cycling and walking. The once green sideways and rustic roadsides have given way to numerous concrete parking lots. Maybe we should simply have one multi-storied parking lot instead of so many of them spread all over the place! There are also numerous “No-parking lots” in IISc, where vehicles and bicycles are parked right next to the “No parking” board. Some motorists actually honk whenever they encounter a no-horn sign. May be the sign acts as a reminder that their vehicles also have horns. We park scooters in four-wheeler parking slots ignoring the two-wheel exclusion. Of course, aren’t rules meant to be broken? A decade ago, there were hardly a few speed-breakers in all of IISc; now, there are three to four on every little stretch of the road. All of our commuting comfort seems to be coming with such a huge price that everyone seems to pay, but no one seems to care much about.

Finally, let me conclude with a piece of advice a poet friend of mine gave to me, “Don’t drive and drink. You might spill your drink!”

Chandra Sekhar Seelamantula, (Faculty, EE)

Secret of Macrophotography

This dandelion I captured near gymkhana is hardly 12-15 mm in diameter.

The frustration for most amateur photographers in shooting macro is that they cannot get close enough to the subject with their expensive SLR camera. Every lens has a focal length, which prevents from focusing when the subject is nearer than the limit.

Solution? Don't use an SLR for shooting macro shots! All you need is a cell phone with good camera (min 5 MP) with point and shoot function. Most android phones today have this feature. I have Sony Xperia S (f/2.4, 12mp). It allows me to shots from as little as 25 mm distance.

Obviously, there are lots of expensive pieces of technology that can be purchased to focus close-up with an SLR, such as a diopter, an extension tube, or a dedicated macro lens; however, if you are an amateur and/or don't want to spend a lot of money, your cell phone with point-and-shoot is a potent alternative.

Aashish Vishwakarma (SERC)



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