

**The Quarterly BITSians: Kanna Rajan, NASA Scientist
& Prof. GP Avasthi, Economics guru**

The BITSAA Edition

Sandpaper [2.0]

Summer 2004 Issue

Birla Institute of Technology & Science Alumni Magazine

Planet Pilani

Is there a God ?

Journey from the
Thar to the
Mohave: A \$1MM
race by Prof. Arun
Lakhotia

Briefings from the
land of the Dragon

A conversation
with Dr.
BalaSubramanian,
Padma Shri Award
Winner & Director,
LV Prasad Eye
Institute

Wild BITSians



Oh! What A Feeling...

**The Neuron Network liberates
BITSians and Pilani**

BITS celebrates with a big party



**An afternoon with
Prof. LK Maheshwari, the
new Director of BITS Pilani**

Sandpaper [2.0]

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So how do you want it to end...?

50 million people tuned in to watch Rachel, Joey, Chandler, Monica, Phoebe and Ross for one last time. This immensely popular sitcom defined a generation of people around the world that identified it. My generation. For us, it represented friendships, struggles a search for life partners, children and happiness as we made the long journey from our 20s to our 30s. For the cast of Friends, it was an immensely fulfilling journey that while entertaining us, made them rich beyond their wildest imaginations, and resulted in five deep meaningful friendships for each of them. The ending was poignant but happy.



Photo credit: NBC

Some other things came to an end, a little differently. Ronald Reagan, one of America's most loved Presidents, slipped away. His memorable farewell by a world that adored him will not be seen too often in my lifetime. Ray Charles, the father of soul was silenced, but his music lives on.

My grandfather passed away last week. One of the last Nehruvians, a father of the farm revolution in India, he passed away surrounded by his family, loved yet unsung at his own wish. He created many of India's modern farm institutions. As his energy, his eyes and ultimately his time deserted him, he went, his work not yet complete, his life somewhat unfulfilled.

The BITSConnect project came to an end too. Thousands of alums created the Neuron network that liberated the minds of future BITSians. But in the ending we saw a new beginning. We named "BITSConnect" for the series of future initiatives that would connect us to BITS. The legacy of what we have started will live on.

One very successful woman found fulfillment in a new beginning. On December 25, 2002, Oprah threw a massive, different kind of party. Where

the glitterati of Hollywood wasn't invited. In the deepest, poorest parts of South Africa, she flew plane loads of toys to wish a merry Christmas to 50,000 of the world's most deprived children, many orphans, many victims of AIDS. Oprah said that on that day, she finally found purpose in her life. One of the world's most successful women found fulfillment by looking into the eyes of those who didn't even know her name. Oprah has begun scripting a new ending for herself.

I have begun to study such endings more closely. They say life is a marathon, but I feel my journey is passing by in a blur, accelerating as I get older.

As I see periods, people, legacies, legends, institutions come to an end, I believe the journey is not about winning, or even completing it, but about having a really good run. Which I interpret as attaining some sense of fulfillment.

As the finish line draws near, today, tomorrow or 50 years from now, when we run past the ticker tape that waits at the end, I think the question we should ask – did we enjoy it? Was it enriching? Fulfilling? Worthwhile?

A BITS Pilani education gave us a great passport not just to begin this journey, but to make it more meaningful. It gave us the opportunities to run many different paths, take new routes, do new things. In spite of this incredible passport, if our journey remains un-enriching, unfulfilled, unsatisfying, it would indeed be unfortunate.

When we were 18, in the clouds of alcohol (and at times ganja) immersed in the sounds of Led Zeppelin and Bob Dylan, we debated these questions. Maybe we should reach out to those peers and classmates and ask them this question again. "How do you want it to end? Are you fulfilled. Are you ready?"

And I am sure that in some corner of this vast BITSAA network, we may find some (clear-headed) answers.

Anupendra Sharma ('87B3A8)

Chief Editor



Chitthi Aye Hai

Stanford is one of the best schools in the country, and the admission is very competitive. Representation of BITSians at Stanford has always been meager. However, since recent years, number of people have been getting admits here. Every year, at least 5+ people get admits. Last year, the number went as high as 10. However, less than 50% finally make it here because of financial constraints. Still, it is heartening to see a healthy apping scene. BITSians are now making it to all the top schools like Stanford, Cornell, CMU

Shashikant fd97093@yahoo.com

Hello, I just read Dilip's article about 'the best connected university in India' and the nostalgic memories it brought back to me of the excellent times I had with you all from 1965 to 1988. Naturally I am very proud of it. Congratulations and greetings to all of you from me and my wife, for conducting an alumni-meet on February 21. God bless you. My website on Science and Spirituality is <http://www.geocities.com/profvk/>. You can access my book on Gems from the Ocean of Hindu Thought Vision and Practice, and my father R. Visvanatha Sastri's manuscripts from the site. Yours, if you remember,

Prof. V. Krishnamurthy, former BITS Maths Professor, now at Portland, Oregon, with son Balaji.
profvk@yahoo.com

Really a classic one. It covers almost all aspects of information which any Alumni wants to know. I am of 83 batch and currently being managing director of Infinera India Private Limited (R&D center for Infinera, USA, and optical networking company). Also i had released a book in Hindi from Delhi, which is a collection of short stories on NRIs socio-economic situations. I am looking for the right contacts to get the TV-serial or movie made from this stories of my book. Any contacts/email address which you can provide will be of great help. Keep it up the great work.

Utkarsh Rai utkarshrai@yahoo.com

I couldn't resist congratulating the team on a Wonderful SandP edition. It was too good...from formatting to types of articles ..everything was the BEST. I am sure that we will prove our excellence in all further editions as well.

Manish Baphna

I was a regular contributor to Sandpaper in 1988 or 89 and remember spending a lot of time in the typesetting press (near the Guest House). We actually used to put printing blocks together to compose a page, as if we were printing the Gutenberg bible for the first time. A full color pdf version? Wow, who would have thought! Accept my congratulations in bringing out the Sandpaper issue. It is very exciting to see the names of BITS alumni doing so well. Many names are very fresh in my memory. Wishing you and all other alumni very best.

Prof Ram Ganeshan ('86)

Good to see your requests for abstracts about ongoing research. I am sure that this will help Alumni and current BITSians in knowing more about ongoing research projects that we are involved in. This will help attract students as also help potential investors aware of projects that have a certain market value. I would also like to add that at the University of Georgia, our group is always keen on translating results obtained from the laboratory bench into start-up companies. My boss (Steve Stice) and I have founded a company, Aruna Biomedical Inc. At this time, we are in the process of expanding our IP portfolios, based on our ongoing research. If you are aware of potential investors who might be interested in investing in stem cell research and development, we would appreciate it. Kudos again on the good job you and your group are doing with SandPaper and BITSAA International.

Raj Rao ('86) rajrao@uga.edu

I am the batch rep for the 97 batch. First of all let me congratulate you on the fabulous job that the alumni are doing. Actually the reason for this mail is that some of my batch mates from the 97 batch have started a business venture called PennyWise Solutions and I wanted to let you know about it so that you can update the BITSAA website and spread the word about this among the alumni community so that they could derive some mileage from it. Regards

Avinash avinash@yahoo.com

SandpaperOnline

www.bitsaa.org/sandpaper/sandpaper.html

UP TO THE MINUTE STORIES YOU WON'T FIND HERE

This published version will appear twice a year. To access the latest news, stories, cartoons, humor, class notes and to find out the latest regarding the BITSCONNECT project, visit our website. In addition, find the Business News and archives of our past articles and news.

BITSAA Newsletter

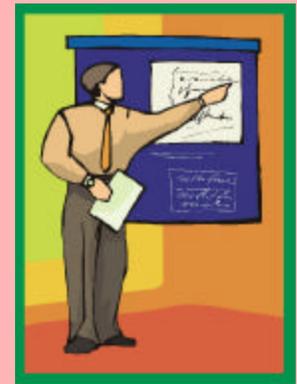
Every month we bring you a newsletter with stories about BITS and BITSAA through the Yahoogroups. In case you miss an edition, you can visit the Newsletter archives online and go through any issues and news that you may have missed out on.

BITSians IN BUSINESS

Download the lists of the Top BITSians Leaders in Business. Also read about BITSian entrepreneurs who have started over 100 companies in the US alone. Nominate someone to this prestigious list by writing to us.

BITSians IN ACADEMICS

At last count, there were **200 BITSian** alums teaching as professors at universities and research institutes around the world. All details including research, emails and phone numbers are to be found on the website. Contact these professors. Start a dialogue !



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BY THE SANDPAPER NEWS TEAM

BITS & BITSAA NEWS

May 24, 2004: BITS Pilani and Berkeley-educated Congress MP **Prithviraj Chavan** was sworn in as the Minister of State for Finance, assisting PM Manmohan Singh.

April 28, 2004: The Wharton Business School's Annual Business Plan competition was won by **Sammonoi Banerjee** and his team for development of the handheld Brain Trauma Detector. Sammonoi received \$20,000 for his effort and has received funding from the Navy. The company is Infrascan, Inc.



April 19, 2004: **Dr. Kishan Baheti**, 1968 graduate of BITS, crossed the finish line of the grueling Boston Marathon with an amazing finishing time of 3 hours and 52 minutes. Baheti completed the 26.2 mile race in the top 30% of the 16,000-runner field. Boston Marathon has a tradition of attracting the top runners in the world where each runner is admitted based on qualifying times of a previous marathon within last two years. Baheti qualified to compete in Boston by finishing the 2003 Washington DC Marine Corps

Marathon in three and a half hours. Dr. Baheti is a program Director in the Division of Electrical and Communications Systems at the National Science Foundation in Washington DC.

April 17, 2004: Kenya names Mr. **Goenka**, a graduate of BITS Pilani and founder of ITPC, a Rs 200-crore export house in Kenya, as honorary counsel in India to develop business relations with Kenya.

April 16, 2004: **Indira P. Raman**, (1998 Chemical) joined XLRI in 2002 and graduated this year with a Gold medal in marketing. She has joined Colgate Palmolive.

April 15, 2004: **B Murali Krishna** is contesting the AP elections for the Bahujan Samaj Party from the Himayatnagar Assembly seat. "I've come to develop my city. To show that NRIs like me are capable of contributing more than anyone else for its development," asserts Murali Krishna. Now for Krishna's track record. He was born in Tenali, Guntur. He did his BTech from Bits Pilani, MTech from IIT, Chennai and MBA from IIM Bangalore.

~~**April 15, 2004:** Delhi Police arrested two persons on charges of duping the ICICI bank of Rs 60 lakhs, including **G. Udayan Dravid**, a BITSian. He is accused of selling off the hypothecated vehicles on forged documents, without repaying the bank loan. Police said that Dravid, director of Gravity Logistics Pvt. Ltd and Dravid Investment Pvt. Ltd, had procured a loan of Rs 1.10 crores from ICICI bank against hypothecation of 24 vehicles for his transportation and warehousing business. 13 out of the 24 vehicles have been traced which accounts for Rs 50 lakhs. Dravid has done his engineering from BITS Pilani and MBA from Punjab University, Chandigarh.~~

April 2, 2004: **Anurag Jain** ('88), Founder of Vision Healthsource and Brigade was appointed Head of the Business Process Solutions Group at Perot Systems, a \$200 million division. Anurag sold Vision Healthsource to Perot for \$10 million earlier this year.

April 5, 2004: **Srinivas Balasubramanian** (Founder, Infravio) raised a new round of \$6 million round last week from strategic investors NetIQ (Nasdaq : NTIQ) and other venture backers. This is in addition to the \$6.2 million that was raised last year, after an earlier \$7 million raised in 2000.

April 3, 2004: Bharat Forge, founded by **Baba Kalyani**, BITSian, joins a growing number of leading Indian companies to offer a BITS Pilani degree. The program which will be conducted at BFL will primarily enable BITS to offer a degree course equivalent to BE/ B Tech to Kalyani Group employees. The employees will have a full-time student status and the degree awarded will be valid for applying for higher education in any other university. This three-year-six semester course consists of 20 subjects spread over first five semesters and project work for the sixth semester.

April 1, 2004: Chola Asset Management Company named **Sashi Krishnan** as their new Chief Executive Officer.

March 23, 2004: The University of Buffalo reported that a team led by **Prof. Abani Patra** has invented a pump to be used in a device that may help



revolutionize the

decontamination and purification of water, juices, and other liquids. Patra is an

associate professor of mechanical and aerospace engineering in the UB School of Engineering and Applied Sciences. He graduated with a degree in Mech from BITS in 1987.



March 1, 2004: Two BITSians, **Mithun Paul**, 2000B5A1588 and **Ganesh Ramachandran**, 2001B5A3586, came second in the National Level Finals of the Awakening Indians to India Quiz, conducted by the Chinmaya Mission. They got through many rounds including the State level, Zonal level and went on to become the runners up in National finals, beating around almost 345,000 participants who appeared for the first round of the quiz from all over India. They won a cash award of Rs.90,000/- and a fully sponsored one month All India Trip. They have also won a dinner with Dr.A.P.J Abdul Kalam, the Hon: President of India. The quiz which is being aired on Zee TV in 13 episodes, is being mentioned in the Guinness Book of World Records for being the largest Quiz ever conducted.

March 1, 2004: **Rakesh Ranjan** ('93 PhD), Senior Lecturer at Faculty of Engineering and Technology, Multimedia University Malaysia has been nominated for Marquis WHO'S WHO IN THE WORLD (USA) 2004 for his research contribution in the area of "Radial Distribution Systems". Dr. Rakesh has co-authored three books entitled "Signals and Systems" published by McGraw-Hill, Singapore / Tata McGraw-Hill, New Delhi, India, "Random Process and Queuing Theory"

published by Pearson, Prentice Hall, Malaysia and "Circuits and Signals" published by Pearson, Prentice Hall, Malaysia. His research interests are operation, control and planning of Distribution system with the application of fuzzy logic, genetic algorithm and genetic programming etc. He has contributed so far, 17 research papers in international journals and 35 papers at international conferences.

February 24, 2004: **Ramesh Ramanathan:** "Practical patriotism is what we need." Times of India carried an article on Ramesh Ramanathan and Janagraha on Tuesday, February 24th. Ramesh Ramanathan who "chucked up a career as a banking star to start a good governance project".

January 22, 2004: **Prof Krishna Saraswat** was named the Rickey/Nielsen Chair in the School of Engineering at Stanford University. He had earlier received the 2004 IEEE Andrew S. Grove Award for seminal contributions to silicon process technology. Dr. Saraswat has also previously received the Electrochemical Society's Thomas D. Callinan Award and two gold medals for undergraduate excellence while attending BITS Pilani. He is the author or co-author of more than 400 technical papers and is the recipient of several Best Paper Awards.

January 21, 2004: **Kalpana Nayak** ('90 BE Comp Science) is the Commandant of the first all-women



battalion of TN police profiled in

News Today. On January 31, J Jayalalithaa, Chief Minister of Tamil Nadu commissioned India's first All Women Police Battalion, led by Kalpana Nayak ('90 BE Comp Science). Part of her job is to provide commando training to over 1000 women police officers in TN.



Credit: College of W&M

January 15, 2004: Associate Professor **Ram Ganeshan** ('86) was named the co-winner of this year's Wickham Skinner Award for Early Career Research Accomplishment. Bestowed each year by the Production and Operations Management Society (POMS), the award recognizes young scholars – those who have received and/or begun their academic careers in the previous five years – with unusually strong research records and reputations.

To be considered for the internationally recognized POMS award, Ganeshan submitted a portfolio detailing his research and demonstrating its contribution to academia. The latter requirement certainly wasn't difficult: Ganeshan is one of, if not the first, to concentrate research efforts on the use of digital technology to enhance the efficiency of supply chains.

January 15, 2004: BITSian combines e-tailing with network marketing, profiled in Business Standard. **Vishal Anand**, a 32-year-old BITS Pilani

computer science graduate says that his

dotcom venture Mahamaza Ecomm Ltd not only stayed afloat but grew into an Rs 80 crore company in the last three years. By selling the products through a chain of network marketing agents (like Tupperware) to customers in small towns - not metros.

January 12, 2004: Wipro Vice Chairman **Vivek Paul** has been named as one of the best managers in the world for the year 2003 by BusinessWeek in its latest issue dated January 12, 2004. Paul has been listed alongside Apple boss Steve Jobs, NBC chairman Bob Wright, Craig Barret of Intel and Starbucks CEO Orin Smith. BusinessWeek praised the Mountain View, California-based Wipro vice chairman for taking Wipro from a \$150 million company to a \$1 billion giant; and for his strategy of growth by acquisition is helping Wipro steal business from the likes of IBM Global and Accenture.

January 10, 2004: BITSIAN leads the software team that lands a spaceship on Mars. Computer engineer **Kanna Rajan** ('84) team that developed the software for Spirit. For Rajan's years of hard work, the moment of truth was when Spirit rolled off the lander platform. The Rover will drive around the planet and scoop up rocks for experiments, guided by the software that Rajan and his colleagues developed. Rajan is the second Indian from the University of Texas to hit the headlines in recent times. The first was the late astronaut, Kalpana Chawla. Kanna Rajan is a member of the Planning and Scheduling group at NASA Ames Research Center. He holds a BE (Hons) Computer Science from the Birla Institute of Technology & Science, Pilani, India and a Masters from the University of Texas, Arlington both in Computer Science. Prior to joining Ames he was in the doctoral programming Computer Science at the Courant Institute of Mathematical Sciences at New York University. His primary research interests are in Planning, Robotics and Knowledge Representation.

January 7, 2004: **Srividhya Rajesh**, BITSian, is among leading fund managers in India. Srividhya Rajesh handles the Select Focus Portfolio, Sundaram Growth, and Sundaram Tax saver, and Sundaram Mid Cap funds for Sundaram Mutual. An alumnus of BITS Pilani, she has been with Sundaram Mutual since the company's inception and is widely quoted in the Indian press for market insight. Srividhya worked with Kotak Mahindra for two years prior to joining Sundaram Mutual.

January 1, 2004: Amkette is staying ahead of the herd by moving into high-end computer peripherals such as LCD screens and wireless keyboards. "We were very clear from the beginning that the business model would be to work on carefully identified niches," says **Rajiv Bapna**, the BITSian MD of Amkette. Rajiv completed his BE from IIT Delhi and then came to Pilani for higher studies.

January 1, 2004: **R.K. Kaul** ('71) is head of DSCL Energy (Shriram Group) that has been named the best Energy Services Company two years in a row by the Petroleum Conservation and Research Association (PCRA). A tennis champion at Pilani for three years, he has given the proposal to BITS Pilani, which could save up to Rs. 1 crore a year.

December 15, 2003: Magma Launches "IC Excellence" Initiative in India; Partners With BITS Pilani. Magma Design Automation Inc. (Nasdaq:LAVA) one of the world's leading providers of chip design solutions, today announced the launch of its "IC Excellence" initiative in India. As part of this initiative, Magma will donate IC design software to five leading engineering institutions including BITS Pilani, launch an IC Physical Design PG Diploma course with leading VLSI training institutions in India. Magma Design has won many international accolades and was started by an Indian, Rajeve Madhavan, who is currently CEO. This initiative was led by **Raj Khare**, CEO Broadcom

India, **Vinod Agarwal**, Chairman, LogicVision and other BITSIANS.



December 11, 2003: **Shivan Subramaniam**, FM Global CEO was profiled in the Economist. FM Global has \$4 billion in revenues. IN A new, \$78m research facility in Rhode Island, FM Global routinely blows up, batters and burns all sorts of materials and structures. It is distinguished as being one of the largest facilities in the world that can do a controlled fire. The company is one of the handful that dominate the market for insuring large industrial and commercial property. Its penchant for testing things to destruction is a sign of its unusual approach to underwriting risks, based on preventing losses rather than on minute analysis of probabilities. Indeed, it employs 1,400 engineers, more than all its competitors together, and incredibly, has no actuaries.

Barring a disaster, FM Global is likely to conclude a second year with a combined ratio (operating costs and claims losses divided by premiums) of only 70%. For almost 20 years, most property-and-casualty insurers have put up with combined ratios of more than 100% and tried to bridge the gap by investing premiums. A ratio of 90% is regarded as heroic. Anything less verges on being too good to be true.

However, FM Global's peculiar approach to underwriting may well have helped too. Its army of engineers evaluates clients and pushes them to make their buildings safer, on the premise that most losses are avoidable. This strategy of emphasizing loss prevention rather than statistical

analysis stems from the company's origins. A truly original approach.

December 8, 2003: Amit Thakral, ('97 Chemical) received the Infosys Excellence awards, given for his work with the Hinjewadi Foundation, an organization working for upliftment of society, especially the poorer sections. Amit is one of the core member of the foundation.

November 30, 2003: BITSian is the editor of a book titled "India in the global software industry" - an examination of India's IT industry. **Anthony P. D'Costa**, a graduate of BITS, Pilani (1975-80) is an Associate Professor of Comparative

become internationally competitive in the IT industry, this book also offers an avenue for India to tackle the myriad economic problems of the country.

October 2, 2003: Krishna Vavilala is Chairman of Mahatma Gandhi Statue Project in Houston. 1960 BITS, Pilani graduate Krishna S. Vavilala, who was featured in the inaugural issue of Sandpaper in May, 2003 was elected Chairman for the Mahatma Gandhi Statue Project in Houston. The attached picture shows Mr. Krishna S. Vavilala addressing the Press during Mayor's Press Conference in City Hall. Standing behind are Houston's Mayor Lee P Brown (Center Right) and the Consul General of India, Hon. S.R. Tayal

inaugurated by Mayor Brown in December 2003.

October 2, 2003: BITS cracks the first round of BBC University Challenge on October 2nd. It was a splendid performance by 4 BITSians at the BBC University Challenge - BITS scored 110 points versus 55 points scored by Sir M Viswawaraya Institute of Technology. At the start BITS was 25 points behind, but the team came back with a knock out punch for a COOOL win !!

September 8, 2003: BITSAA.org is subject of a Rediff article on online student networks. Writing about alumni networks, Rediff article mentions the use of BITSAA.org for networking, for fundraising and for project management.



International Development at the University of Washington, Tacoma and is affiliated with the University's South Asia and International Studies Programs in Seattle. By showing how India can

(Center Left). Ground breaking by Mayor Lee P Brown was on October 2, 2003 in Houston's centrally located Hermann Park, which is frequented by millions of tourists every year. The statue will be installed and

BITSAA.org has quickly established itself as a leading alumni web-site that has successfully brought together BITSians from BITSAA's 30 global chapters under the same tent. . .



KANIKA – THE ACTRESS IS BACK IN THE MOVIES

Kanika, an engineering graduate from BITS, Pilani, and a former Miss Chennai Runner-Up, recently graduated from BITS. Although she had made **Five Star**, a hit movie that was directed by Mani Ratnam, she waited till completing her studies to take on new projects. Obviously she thought the BITS degree was worth it !

She is making a grand re-entry in director K S Ravikumar's latest venture **Ethiree** in which she acted opposite Madhavan. Kanika also played a guest role in director Cheran's run-of-the-mill **Autograph**. She is currently playing the lead in director Keyar's **Dancer** and in a Telugu film too.

RASIKA – THE BAND

Rasika was formed by a small group of music lovers in Atlanta in 1994. The group has grown since then and has performed in many cities in USA, often to benefit charitable causes. Most of the members of the group are budding professionals and long time music students who have come together due to their overwhelming passion for music and it is this passion that they wish to share with the Indian community and all others who love Indian music.

The variety of music played by Rasika ranges from old and new "chatpati" Hindi songs to the latest "dhamaka" popular scores..from the sizzling Hindi music of the 80's and 90's to some exquisite compositions of R. Rahman and Iliaraja.

The orchestra is provided by an array of very talented instrumentalists who have performed widely on stage both in India and the U.S. The singers are some of the most talented and popular singers who have already won the hearts of the "junta" during the past performances in Charlotte, Atlanta, Augusta, Richmond, San Jose, and other cities.

Masala & Spice

BITSIANS in Rasika include Tirthankar Das (Drummer/ Percussionist), Pankaj Sharma (Electrical/ Acoustic Guitar), Priya Raman (Vocalist), Shyamsunder Vaidanathan (Composer / Sound Engineer / Keyboardist), Sundi (Keyboardist/ Violinist).



SHYAM VAI – THE KEYBOARDIST LAUNCHES HIS CD

Perhaps the first instrument Shyam began experimenting with was the harmonica. He borrowed an old harmonica from his neighbor when he was in grade 6 and played it at home every night before he slept. His dad noticed this skill and bought him a wonderful HOHNER harmonica from Germany

At BITS Pilani, he performed with the Music Club at BITS Pilani for 5 years with a total of over 70 performances on different stages with its members. Shyam won the coveted BEST KEYBOARDIST in ROCTAVES for three consecutive years, 1993-1995.

Since 1999, he has been affiliated with DOUBLE FORTE @ CHICAGO: He has to his credit two complete albums of Indian music. His music and CDs can be heard/purchased online at mp3.com

His website is www.shyamvai.com



BY VENU PALAPARTHI ('87B3A7)

BITSCONNECT: OH WHAT A PARTY!

BITSCONNECT'S first initiative, the gigabit Ethernet network called 'Neuron,' was launched by Dr. KK Birla in an impressive ceremony on March 20, 2004. Using a laptop that was equipped with a wireless card, Dr. KK Birla triggered the curtain raiser which marked the launch of the project.

The auditorium was packed with students, alumni, faculty, and non-BITSian donors, and other key participants in the \$1.5 million BITSCONNECT Neuron project. Media was present in full force – there were reporters that covered both technology and education.

Dr. Venkateswaran spoke about his new role of Vice Chancellor. He said he owned the copyright on "Diro." He joked that although "Dr. LK Maheshwari is the Director of BITS Pilani, he will never be called Diro!"

Himabindhu and Anu Hasan welcomed the guests and introduced the speakers. Dr. KK Birla reminisced about how Shri GD Birla started the school decades ago. He was proud to be presiding over a college who had produced outstanding leaders, and whose admissions process could not be influenced. Smt. Indira Gandhi once recommended some students for admission to BITS. Dr. KK Birla declined politely. A curious Smt. Gandhi asked Dr KK Birla why BITS was so special and surely they could admit a couple of candidates who came with the requisite recommendations. Dr Birla said he would have no problems. But strings were attached. BITS would have to go public with this new method of gaining admission into BITS and Smt. Gandhi would have to own the responsibility of going through the 5,000 applications that came accompanied with recommendations. Smt Gandhi quickly saw his point. There was simply no alternative to pure merit. This particular story was carried by several newspapers the next day.

The excitement among students was palpable. They had been reading newspaper reports comparing their network with the best in the world. They showed off their own technical prowess with a very impressive curtain raiser – a presentation of the type that India has never seen before.

Satish Gupta, Founder of Cradle Technologies, spoke on behalf of the alumni. He announced that BITSCONNECT was not a one-off affair, and introduced the concept of BITSCONNECT representing a movement. This movement would provide BITS with infrastructure that is unparalleled anywhere in the world. Something has to be said about Satish's quick wit. At the press conference the previous day, a reporter asked about Dr. Murali Manohar Joshi's plan to have government clear all alumni contributions. In that context, the reporter asked "what role did the government play in the BITSCONNECT Neuron project" to which Satish's response was "the government had an important role – they just stayed out of our way."

The President of the Students Union, Vinay Babu thanked the Chief Guest and the alumni for everything. He invited us to a music night that evening on behalf of the Music Club. Two things stood out about this President who took over from his illustrious predecessor, Aditi Pany, the first ever woman president of BITS. Firstly, Vinay came dressed looking very sharp in a bespoke suit. Gone are the days when borrowed suits were the order of the day. Secondly, someone whispered that he was an A8-A7 dual! Electronics and Instrumentation and Computer Science. I know of only one other President with such impressive academic credentials! Our very own honorable President Abdul Kalam who would have been impressed had he showed up.



That afternoon, Mario Mazzola (photo) delivered the key note speech. It was his first trip to Pilani. Mukul Chawla mentioned how the project team had to come up with ideas to deal with the intense Pilani heat that threatened to melt the equipment and the dust which was quickly clogging the ports. The Cisco and Wipro teams deserve our thanks for all the efforts in rolling the project out.

Dr. Venkateswaran spoke about his new role of Vice Chancellor. He said he owned the copyright on

clubbers as they practiced the previous night. She was impressed. But if the practice session was impressive, the actual music night was simply phenomenal or 'mindblowing' as they say in BITSian lingo. The Music Club's rendition of AR Rehman's Vande Mataram was better than the original and I am sure AR Rehman would have readily agreed if he listened to it.

Back when I was in BITS, students rushed to the well and danced until they were driven out or daylight broke. All in good spirits! But the present day



“Diro.” He joked that although “Dr. LK Maheshwari is the Director of BITS Pilani, he will never be called Diro!”

Quick observation: BITSians no longer hurl tomatoes.... And two alums announced a reward of Rs. 50K to the Music Club.

The music night was a blast. Anu Hasan, a veteran of the Music Club from 1988-1993 sang with the music

students are better behaved – or do I sense that they are subject to more restrictions. Alumni didn't bother to check what the rules were. They were out there dancing. One alum went on stage and started singing. Quick observation: BITSians no longer hurl tomatoes. And they truly respect their alumni!

Two alums announced a reward of Rs. 50K to the Music Club. Just like that! I am sure a lot of ex-music clubbers are thinking “Daaaamn! Where were these rich blokes when I was on campus?” |

BY DEEPAK SHARMA ('91A1)

OF HUDDLES, CUDDLES & THE NEURON NETWORK

It is around 12.30a.m. On

Vinod replied emphatically, “

instantly able to get together, unite and share passion, jokes, and work with each other easily! All of us were working in a virtual team over email and phone for the past one-year to set up NEURON, BITS' gigabit Ethernet backbone, and today was a day to celebrate and take a breather before the team launched on more ambitious projects for the future! This is truly being connected by BITSConnect – the ability to bring together people from different walks, generations and locations together to create something that will further the cause of students and ultimately India in the world!



March 20, 2004 and the ANC at BITS Pilani is in full swing with students jostling at the counter – “Ek Maggi, do sam chat, 4 chai”, “Teen coffee, 2 chips, char samosa”, “Hey Ramesh idhar aa re yaar – I can’t lift all this myself”, the constant chatter of “laccha” – Intellectual talks ranging from solving electro-magnetic problems to how to date Kareena Kapoor, a few clouds of smoke in a dark corner and a group that was able to get late night permission for the girls sitting proudly at the center!.

Amidst all this there was another group of folks that were sitting around in a circle and sharing old ‘n’ new jokes. “So how do you define a huddle vs. a cuddle?” asked Vikram and

Arre bhai what we saw was not a huddle it was definitely a cuddle – anything more than 30 seconds is automatically in the cuddle category!” The whole group roared in laughter.

So what was different about this group. For starters nobody was a current student. The group consisted of alums ranging from 1960s all the way to 2000! Second, behind the joviality were strong, smart determined men & women who had come together based on their passion for BITS Pilani and had made NEURON – Interconnecting Minds – a reality on campus today!

Last but not the least – most of these folks had not met each other till today and yet were

My mind raced back to September 2003. I was pulled in by Mukul to attend the weekly conference call for BITSConnect project of wiring up the campus. In the very first call, I was amazed by what had been achieved by the group – and the passion in the folks was unbelievable. Here were folks who were devoting their precious personal time and working odd hours and up at all times to get a pro bono job done. It was a great ride for me as I got involved with the marketing/branding team and we started preparing our messaging, content and co-ordination work with the PR agency. It meant phone calls at midnight – sometimes midnight in US and sometimes midnight in India! There were folks like Karthik who arranged all the logistics for

the two-day event at BITS Pilani including transportation logistics and he was not able to make the trip!! It amazed me to see what technology, passion and single purpose determination can achieve! The list of people was endless, connecting 100 people around the world. And even when the time came for media campaign it just took one phone call and/or email to get a yes from the concerned alum to volunteer to do something. Many of them made the memorable trip to Pilani just for this purpose!!

Lastly it was very heartening to see NEURON (The gigabit

(NEURON) for web connectivity –downloading music, running radio stations and doing online coursework today (Although it did take some students 15 minutes to find the course online, a bit like the 15 minutes it takes to find the class we never attended except to show up for the exam)!

The network is already transforming the way education is imparted at BITS Pilani and also inspiring students to think “outside the box” for business models revolving around using the network both for research and commercial purposes. In my mind this is the new face of

changing and at their freedom to connect to the rest of the world.

The two days at Pilani went by in a fleeting second. We hardly slept, staying up till 4a.m. every night and also managed to recreate our classroom bunking days by ducking out of a few conference lectures to have shikanji in sky and get some feedback from the ‘real’ students present in sky!?. We did the early morning visits to the temple and had dinner in the RB mess (yes now it is RB since Malviya has been handed over to the better sex!). The evening was filled with trips to C’Not and then sessions of coffee/chai at the ANC.



As the car drove out of the guesthouse, I looked back one more time and promised to be back next year for the next project. This was truly a remarkable project. BITSConnect had cut across batches, industry, faculty, students, geographies, time zones and created an unbreakable bond. The end goal for all is to put BITS Pilani on the world map for its education, diversity and global leadership. So behind the huddles ‘n’ cuddles jokes lies the absolute faith,

network project) in action at Pilani. As we walked down memory lane with Nagarji’s shikanji in hand we walked into several rooms, it was a startling sight to see brand new PCs sitting on old wooden desks! It was very exciting to see students using the Ethernet network

BITS Pilani – changed yet unchanged. While the hostel room is the same and the serenity plus peace at the temple is the same and one can still get Pappu’s coffee at Sky, there is now a PC in almost every room at BITS Pilani, students are excited that the world is

determination and rock solid dedication that will not accept anything less than total success!

Deepak is an engineer at Cypress Semiconductor in the Bay Area |

MEDIA COVERAGE

BITSCONNECT: A MEDIA BLITZKRIEG



Old Boys Gift Rs 200 Cr To BITS Pilani, The Times Of India, Mumbai, Saturday, March 20, 2004

Alumni Launch Rs 200-Cr Tech Makeover For BITS, The Hindu Business Line (all editions), Saturday, March 20, 2004



Industry, BITS Alumni Launch R&D Project, Hindustan Times, New Delhi, Saturday, March 20, 2004

State-Of-The-Art Library Inaugurated At BITS, Hindustan Times, New Delhi, Saturday, March 20, 2004

BITS Grads Join Hands To Chalk Out Plans For Alma Mater, The Economic Times, New Delhi, Saturday, March 20, 2004



BITS Sets Up Network Across Campuses, The Financial Express (all editions), Friday, March 19, 2004

BITS Pilani's Rs 200 Cr Semi-Conductor Lab, The Indian Express, New Delhi, Saturday, March 20, 2004



BITS Connect R&D Centre, Business Standard, Mumbai, Saturday, March 20, 2004



How Alumni Wired BITS, Pilani, Rediff.com, March 19, 2004



OLAB...BITS Pilani Alumni Unveils Rs. 2 Bn Project, Indiainfo.com, March 19, 2004

BITS Pilani Collaborates With Cisco, The Free Press Journal, Mumbai, Friday, March 19, 2004

Another Milestone For BITS Pilani, Hindustan Times,
New Delhi, Thursday, March 18, 2004

HindustanTimes.com

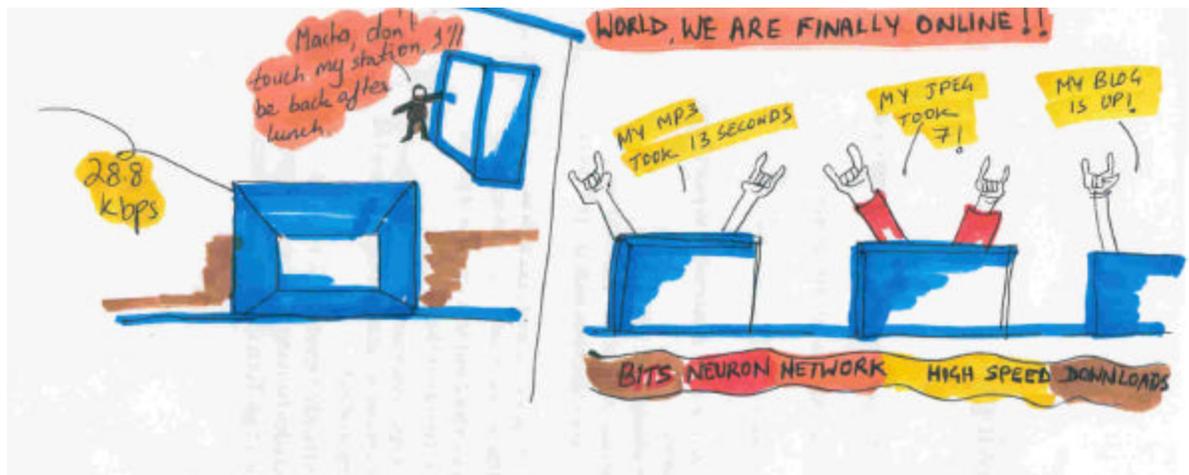
THE FINANCIAL EXPRESS

BITS Alumni Seed \$50 mn Into IP Lab,
The Financial Express (Front page all
editions), Tuesday, March 16, 2004

BITS Does A Stanford In Networking,
EconomicTimes.com, Tuesday, March 16, 2004

THE ECONOMIC TIMES

The real use for the Neuron Network by Rahul Chandra



A BITSIAN STARTUP FROM THE BATCH OF 1997

Software for fleet management systems gains rapid traction in India and UK

The batch of 1997 has finally produced its first group of entrepreneurs. **Anand Morzaria, Ananth Vyas, Pochu Pavan, Krishna Mohan, Anshuman Dimri** and **Venkat Ram Polana** have banded together and started a Software Technology Solutions provider firm in Hyderabad named PennyWise Solutions Pvt. Ltd. This is an eclectic mix with three Finance majors, one EEE and one Software Systems major among the founders. This is no mean achievement considering that they all had been out of college for only a year and a half before they decided to start their own business. They have been in operation since June 2003 and have already bagged some pretty impressive projects in UK, USA and India. In less than a year PennyWise Solutions has established strategic partnerships with SCIC Corporation, California, a high-end transportation technology solution provider and BTC, London, a real estate conglomerate in the UK to provide quality technology solutions to the US & UK markets. Their flagship product is a Fleet Management System named QuickDispatcher™, which has already been licensed to several companies in the US market.

Thanks to Avinash Modi for bringing attention to this startup

Contact **India (91-40-23542633), US (1-310-686-7672) & UK (44-20-8889 5161)**

FROM THE BITSCONNECT TEAM

AN UPDATE ON THE NEURON NETWORK

Dear Alum,

The goal of the first phase of BITSConnect was to build a gigabit network infrastructure at BITS Pilani. Specifically, the intent was to roll-out

- *10/100 voice-grade data ports to every student room, faculty home, guest house room etc., with limited VoIP roll-out in Phase I.*
- *802.11b wireless access at selected locations*
- *Streaming Media Infrastructure for rich content delivery*

We have achieved all of the goals above. That said, let us review some specifics and current status:

While we have a gigabit network within Pilani, the external bandwidth to the Internet is currently 2 Mbps, up from 1 Mbps last year. BITS has already paid-up VSNL & ERNET for another 2.5 mbps which will improve the total external bandwidth to 4.5 mbps in the next few months. To put things in perspective, top Indian institutes have an external bandwidth of 4-8 mbps, putting BITS in a similar ballpark.

So while data within Pilani travels at Gigabit speeds (1000 Mbps), the bottleneck to the Internet is the 'thinner' external link (2Mbps).

Clearly, this begs the question: Why build a network capable of 1Gbps?

1. The network has been designed with locally-hosted content in mind. Consider on-line lectures, access to the supercomputer, local servers, the soon-to-be-built VLSI Lab infrastructure or even student-hosted content. These require blazing-fast transfers 'local' to Pilani – as applications for BITSConnect evolve, we expect such traffic to be a vast majority of data on the network.

2. We want to build a network that is 'Future-Proof' for many years, when external bandwidths will be significantly higher.

Given the external bandwidth limitations discussed above, it is possible for a few users to completely utilize the external link (say, with a large ftp transfer), bringing internet access for the rest of the campus to a stand-still. Hence, BITS has a policy of 6pm-8am access to students => that allows the external bandwidth to be used by the Institute's network during the working day.

The good news is that we HAVE a solution. As the additional 2.5 Mbps becomes available, we have designed a solution to provision the total external bandwidth so that the student network and Institute network are separated – soon as that happens, it will be possible to remove this time restriction on network access.

ALL data ports are voice-enabled, i.e. it is possible to plug in an IP phone and have telephony access. To start with, we have 250 IP phones on campus. As newer phones become available, the IP Telephony roll-out will continue.

We welcome questions and queries. Technical inquiries may be directed to Prof J P Misra (jpm@bits-pilani.ac.in) or Mukul Chawla (mukul@bitsaa.org).

Thanks,

The BITSConnect Team

BY LAXMAN MOHANTY ('71)

PLANET PILANI*Published and copyright owned by desijournal.com*

Two days back I was traveling by the morning 5.15 bus from Jaipur. Till Sikar my eyes were closed and I was in a kind of trance. I had to get up very early in order to not miss the Jaipur station; otherwise I would have landed up in Old Delhi station. After Sikar, as the sun light transformed to its glorious form I also came to my own self. Then I sat down looking outside at the babul trees passing by. Babul trees looked superb with new green branches just coming out and appeared like green cotton wrapped at the tip of all branches. The air was cool and this glorious morning set me to think about my association with a place called "Pilani".

Some 25 years back in the month of June I had made my first trip to Pilani to join Birla Public School in class XI. It must be around 5 O' clock in the afternoon when I and a friend of my brother (my escort) landed up in Pilani. On the road, we had come across several people ploughing their fields using camel driven tillers, babul trees standing like ever prompt soldiers on the desert and one or two peacocks loitering in the fields. Pilani was a big surprise with its large bunch of trees. I could not believe it was in the middle of a desert. But what had surprised me most were two things: sun not budging to go out though it was close to 8 o'clock in the

evening and the most "besuri awaz" from a lovely creature called peacock. Even seeing peacocks moving around so close to human beings was a surprise for me. When first time,

dunes to create a new pattern. After 22 years when I had taken my wife to show those sand dunes they had vanished all together. There seemed to be no place which had only sand.



Copyright 1998 Bhaskar Thiagarajan

I ate "rajma" I mistook it as groundnut peas which had somehow no taste. The curry of "tinda" was also a total novelty.

We used to have a lot of sand dunes near the horse riding field of our school. Many times we used to walk on the sand dunes with friends and what used to amaze me was that sand dunes located in a particular place were displaced to another place overnight as if somebody in the night reconfigured all those sand

Everywhere there were small bushes and grass. This seemed to contradict what we have been reading that a large percentage of our land is getting converted to desert.

The death of one of our school students forced us to an adventurous experience. For the first time in my life I had to participate in a strike. We, seniors, defied our Principal, came out of the school campus and went around in the Pilani

village asking other schools to close and also shouted various slogans. What stuck me was that the small Pilani village had so many schools and most of the students were from various parts of the country. We also went to the President of BITS Students' Union, who was like a big brother to us, students of BPS. The President of BITS Student Union addressed us like a professional politician in the front lawn of the BITS campus and assured us to send a student delegation to Sri K K Birla to look after our demand.

The concept of "hiring bicycles" was quite novel to me. In our school, we were allowed half a day of leave on Sundays to go out of the campus and visit BITS, Connaught Place, and other shopping areas. Students used to almost run to reach the cycle stores near the school campus and then after hiring bicycles covered the whole village in those 3 to 4 hours. After so many years of traveling to many other places, I am yet to come across this simple concept of being able to hire cycles and roam around on your own. We had heard a lot about the availability of free cycles in Copenhagen, but when we visited the place we could not find such facility.

For most of the inmates of our school one of the biggest challenges was to jump over the school wall, see any movie running in the local movie hall called "dabba", then again climb over the campus wall and come back to our hostel room without being caught anywhere. Mind it, the school used to show movies every weekend and "dabba" could be hardly called a movie hall with bats roaming around and chairs hardly about to stand

on their own. The ultimate defiance was when the Principal refused to allow a group of my friends to see a movie in the BITS auditorium and as a mark of protest all of us forced our way through the main gate without bothering for a minute whether we would be allowed to continue in the school or not from the next day onwards. Fortunately, we were let off with mild warnings.

One of the biggest challenges was to jump over the school wall, see any movie running in the local movie hall called "dabba", then again climb over the campus wall and come back to our hostel room without being caught anywhere.

While being in school I had decided to join BITS as it was much easier option to do so. There was no need of going through postal coaching and all the hard work necessary for IIT entrance, one need not to go for another learning curve in adopting to a new place and BITS was an exciting place with its good name and our seniors from BPS.

What I still remember about my days in BITS is the "baad mein" culture. If you had no money, there was no problem. Eat or buy things and simply utter the magic words "bad mein", which

meant I would pay later. Interestingly, the shop keepers, even without knowing you, allowed you to go without paying and they never bothered about recording your name or address. People used to pay back later and I haven't come across any case where somebody vanished without paying back the dues. I often wonder if we can have this kind of faith, the world will really be a nice place to live.

The other thing that had impressed me was the culture of everybody paying for own food. A bunch of friends may come together and sit for hours, but while paying for the food every body paid for his share of food (I have not used "her" as by some celestial rule any "her" was never allowed to pay for her food). If you have no money, you allow your friend to pay on your behalf and as soon as you land up in the hostel, you pay back your friend the fifty paise or whatever he had paid for your tea or food. I felt this system never put any pressure on a person who was low on resources and could not afford too many things.

Pilani undoubtedly is a sandy place, but the sand storm that we experienced once was simply out of the blue. One afternoon, we were standing on the roof of our hostel and then suddenly we saw some black cloud moving towards us. Out of fear we tried to get down to the first floor, but by the time we managed to reach the first floor verandah the whole place had become pitch dark and we had no option but to sit down on the verandah calling each others' names to ensure that all of us were there. We were not even able to see one another from 1 foot distance.

But after a few minutes the whole place was lighted again. After sometime we realized that it was a sand storm and the older people on campus told us that sand storm of such intensity had come after 13 years. An incredible experience really!

During ragging...I threw a karate kid and hit (a senior) in the belly. .

We hear a lot of nasty things about ragging. But what I came across in BITS was really fun. Someday I was asked by a senior to bring water in a jug from the cooler located near the next hostel. Every time I used to bring water some other senior on the way used to drink that water and I had to repeat the process. After 2 to 3 efforts I simply threw away the jug and reported to the senior that the jug was taken away by a senior. Another time a senior urged me to show a karate kick. Though I never knew this martial art, I simply threw a kick and hit him on the belly. He had no clue to do what next. Of course another time I was easily trapped by a senior who posed as a fresher to me and sought my suggestion regarding the strategy to follow as he was asked by a senior to report to his room at a particular time in the night. Without thinking even for a second, I suggested "don't go and if that senior asked you

later, tell him that you were taken away by another senior". I was caught red handed of misguiding my peers and invited for a special treatment!

I learnt to survive both the cold winter and the hot summer of Pilani. But the most chilling experience I still remember is one of my journeys from Loharu to Pilani. It was winter at its best and I had landed up in Loharu at about 1 am by the evening train from Delhi. There seemed to be no bus for Pilani and all I could manage was a truck that was going to Pilani. I had to sit in the open carrier and I was not even properly dressed. Every minute that night seemed like an hour and the journey from Loharu to Pilani simply took ages.

What I liked about BITS was the freedom that it provided. Of course, I have seen many of my friends not able to cope up with this freedom, go astray and ruin

their careers. Though I spent almost all of my time doing all kind of art and décor works, I still do not have any regrets. I might not have got 9 CGPA but the experiences that I had gathered in working for Oasis and APOGEE helped me immensely later in my work life.

When I left Pilani after completing my engineering degree I had never thought that one day I would again come back, stay in the hostel and eat the mess food. And all the time now I go back to Pilani for some or other reason I still find the place fascinating and out of the world. Though many things have changed like the ratio of girls and boys and coming of mobile phones, still Pilani has remained unchanged in many ways. It still feels like a place you can't find anywhere in the world - a planet by itself with its own history, structure and ways of doing things.!



A BITS Style International Cricket Tournament in New Jersey On July 31, 2004

A summer picnic on July 31 (Saturday) featuring the first ever "International" Wing Cricket Tournament exclusively for BITSians on the East Coast! In the morning, we will play some BITS style wing cricket. Six-a-side with tennis ball and armchairs as wickets! Please register your six-member team today. To register your team, just e-mail venu@dreamcricket.com with your team name. If you want to play but don't have a team, email us and we will hook you up.

Then, we will follow it up with some real cricket for the more serious wing-cricketers among us (with real stumps and gear). This will be a 25 over match between pre-1995 batch and post-1995 batch. If you are interested in playing, please e-mail venu@dreamcricket.com with your batch. Please mark your calendar for this outdoor event with food, drinks, and games. There is no fee for participating! It is FREE!

The cricket ground is in Central NJ. Watch this space for more info on the venue and for wing cricket rules.

Time: Morning. More information to follow

Price: Free sponsored event.

Place: Cricket ground in Central Jersey. More information to follow.

Organizer: Venu Palaparathi. Email venu@bitsaa.org

Thanks to
Nuware

BITSAA East Coast Event

Books by BITSians: Memoirs of Army Days



Anuradha Gupta studied MMS at BITS Pilani (86-90) followed by an MBA (International Business) at IIFT, Delhi (90-92). She worked for 10 years, the longest stint being 7 years at Hindustan Lever. She taught at SP Jain briefly and plans to get back to teaching eventually. Right now on a sabbatical, bringing up her child she is thoroughly relishing her hobby, writing. Her first book, "Memoirs of Army Days," deals with what being Army brat entailed. The second book, "The Green Dragon" is in the process of being published. The third book deals with getting rid of the stigma of mental illness which is still shrouded in myths and misconceptions. She also writes on issues related to the girl child, poetry and humorous articles etc. for a website, www.viewsunplugged.com.

Anupendra Sharma

WITH DIVYA DIWAKARAN (CURRENT STUDENT)

AN AFTERNOON WITH BITS PILANI'S NEW DIRECTOR

Dr. LK Maheshwari talks about the last 30 years at BITS, his vision of the future, the introduction of the color TV to Pilani, research, admissions and much more in this candid interview.

Shall we start right from the beginning sir? Tell us something about your life. When did you first come to BITS?

I came to BITS in 1965 for studying in a MSc (Tech) Electronics program which was a 2 year program which I completed in 1967 and then I joined the PhD program in BITS which went up to June 1971 and since July 1971 I'm in the faculty of BITS.



So what made you stay here all these years?

Well, the environment of Pilani, the affection of the students and the system of education followed here in BITS, all these contributed to my staying here. On the way I did have other opportunities including one by our Chairman to be the CEO of their sugar industries in UP. I declined it however, because I thought that environment would not suit me and continued to stay on here.

30 years has been a really long time. You must have held a variety of positions here?

Well, I started of as a Lecturer here in 1971. In 1973 when the Instrumentation program came into being I was called upon by the then Director, Dr. Mitra to take the lead. At the time it was a program with EEE. Later when restructuring took place in 1976 and Instrumentation got formed as a separate unit I was appointed Chief of Instrumentation.

This I continued till 1986, when I was made Dean, Research & Consultancy. Of course before that in 1976 I was given a promotion, a double promotion if you may call it, from Lecturer I was made Associate Professor and in 1982 I became full Professor. In between I served as Acting Dean, ID and EHD and in 1999 when Prof Nagrath retired I was appointed Deputy Director, Academics. On 24th Nov 2003 I was given responsibility of being the Director of BITS, Pilani campus in view of the 3 campuses we have now.

So this is the story, but it is teaching that I have always like most, the opportunity of interaction with students and this is has given me great strength.

What made you choose teaching as a career? After having graduated in Electronics way back in 1971, there might have been ample opportunities then?

To be very frank, I really had never planned for this. I came from a middle class family and my father always wished that I go in for higher studies. So I took up the MSc. program here. Upon completing it I was offered a research fellowship. I completed my PhD as a full time student with a stipend of Rs.400 a month, I was one of the first full time research

fellows in the Engineering faculty at that time. After getting the PhD I was given an offer to be part of the faculty at REC, Trichy. However I was asked by the Head of the Department as to why should I not join in here itself. They offered me a position as Lecturer with the same basic as Trichy was offering, so I joined here. So if you see it is really the circumstances that put me into teaching.

But after having joined teaching, I found it a very noble profession. As a teacher you have to keep higher goals of motivating young minds which I feel I have been successful at to a certain extent, I do not know for sure. The satisfaction of seeing bright young faces, I think no amount of money can match and I have been particularly fortunate in receiving this affection and appreciation from the students.

Did thoughts of going abroad never cross your mind?

I have always believed that I should go as an equal. I don't want to go to any place where I'm not respected for the purpose I go for. So when opportunities came by, I went. In 1999 I visited, on behalf of the Institute, some of the Laboratories and Institutes abroad for collaborations with us which I though was a respectable situation. I have had the opportunity of meeting several professionals, administrators and I feel they have respect for us now. When I respect myself, I earn it from others.

Also I never tried to go abroad for any studies, having completed my PhD here. But my papers and my contributions to the field- it was Bipolar Junction Transistors at the time were appreciated and I did receive some invitations to work there but it just so happened that I continued to stay here.

Moving away slightly....., any particularly memorable moments in BITS that you recollect?

Memorable moments... one of them was when I was given the



responsibility to be the In-charge of the Instrumentation group. I must have been around 30-31 then and in those days giving such important responsibilities to young people was unheard of. So that was exciting, not because I got a position but because I was given the opportunity to work and show something and trust was placed in me to fulfill the requirements of the job.

Another memorable moment would be when I was awarded my PhD. PhD is a process shrouded with uncertainties regarding its completion. Looking back now it seems like a simple affair but back then it was a big moment.

Then another one I recollect is during the ASIAD, 1982. We had no television in Pilani at that point of time and I being In-charge of Instrumentation was given the task of telecasting live ASIAD in Pilani and in 'color'. It was the first time color television was introduced in the country. There was a lot of experimentation involved, putting antennas on the roof of ET (Engineering Theatre) and other places and the moment we received the signal I could see the

uncontainable excitement among all the students, everyone jumping, completely thrilled with what they saw. We had about 2-3 TVs, a Sony TV one of the students had bought as part of his project. The programs

were aired in rooms- M31-M33 (currently 2215-2217 I think), we put mats on the floor and this continued throughout the ASIAD week. It was very exciting for me as project in-charge along with Prof Raghunathan and is one of those particularly memorable moments.

I can only imagine. Today some transition of that magnitude is difficult to perceive. Getting Internet connection in our rooms was big but I guess not so much as this one was back then. What do you think are the biggest challenges facing BITS today?

The biggest challenge would be to come at the top of the education system. At BITS, we have constantly strived to experiment and make improvements and have been quite successful. Other challenges would include:

1. To have research linkages with the industry. We currently have educational linkages in terms of Practice School, now it has to extend to research which will help us develop useful technologies for the country.

2. As a technological university we have to develop entrepreneurship through technologically driven projects. This development needs to take place in BITS through the promotion of entrepreneurship among students. According to me this is what will be the salvation for the country. For, every person who decides to become an entrepreneur will in turn generate at least 10 more jobs thus increasing employment opportunities.

3. Another challenge is to fulfill social aspirations. As a university we cannot sit in 'ivory towers'. We need to be aware of societal needs and take up some social responsibilities. Let me give you an e.g. Water is a crucial problem in India, Rajasthan in particular. If we as a university can do something in the areas of rainwater harvesting, water purification, making water potable for drinking, it could be a great contribution to society development. And there are indications now of interest in such areas. Various international groups, our Alumni are coming into the picture, who are ready and willing to participate in such projects.

4. Another issue is whether we can do something to remove illiteracy in the country. Our contribution could be in terms of developing low cost lessons, technologies that can be used by many at large. It should be made a mission.

5. Also I see it as a challenge to be able to inculcate habits among young students and the faculty as well to be conscious of their social responsibilities. The feelings of the need to serve the community need to exist in their minds. Only then can we dream of a prosperous India. Like Dr. Kalam has said a developed nation can be built only by responsible citizens and I think it is the challenge of ours as a university to be able to produce such citizens.

These are I think the main challenges we face. We need to be a knowledge society. Every BITSian has to be able to prove that he can be a leader in technology,

politics, administration whatever, but with a mission in mind- that India be a prosperous country in the shortest possible time. We have the potential; we need to unleash our energies to achieve our potential.

But currently there isn't much of a research focus in BITS. Is anything being done in that regard?

Well, I can tell you that some efforts have been made. I was very happy to see some of the exhibits during APOGEE (the Academic fest) where some reliable projects in rural development areas in terms of devices for sowing seeds, low cost energy devices were displayed. There are pockets; we need to learn how to develop such ideas to make them feasible and useful. The seeds are there but we need to take it to a stage where we can convert it into a product and give it a technical name. We have a long way to go. We are proceeding in the right direction; however a bigger thrust is needed.

There is the Technology Incubation Centre (TIC), NEN projects, rainwater harvesting projects and others. What we need now is to work on them, develop them and see that they are economically viable and achieved in a set time frame- to get into a mission mode. Once appropriate missions are set, we can achieve them.



Now that you are the Director of BITS, Pilani, what are your visions for BITS?

My vision is to bring a sense of pride among all students and faculty of the institute, to make them feel they are part of a family- a family which means business, which means excellence. Also, of course, our vision is clearly put down in the bulletin in the words of our founder chairman, I quote, "to provide for and otherwise protect education and research in the fields of Technology, Science, Humanities, Industry, Business and Public Administration and to collate and disseminate in such fields effective ideas, methods, techniques and information as are likely to promote the material and industrial welfare of India" and to "train young men and women able and eager to create and put into action such ideas, methods, techniques and information". This was the vision of the great legendary Shri G.D. Birla. This remains to be our vision and I think it is up to the individuals now to take it upon themselves to work towards fulfilling this vision.

Like I said earlier, the need now is to set small missions to be achieved in a set time frame. I would like to see Pilani take the lead and set examples in terms of achieving developmental goals. Pilani should be known for something, for e.g. it could be for the development of good educational material. A large number of engineering colleges in the country today do not have very high standards of education due to lack of good teachers and other factors. We could put in some efforts in the area to produce fruitful results. With the objectives in place, let there be entrepreneurs

who will take up the task. We have CEL (Centre for Entrepreneurial Leadership) here with a group of individuals highly committed to the development of entrepreneurship who will be able to guide them and provide assistance and the Institute will provide full support for such endeavors.

What about the BITS, Alumni? What are your views on the changes in the level of BITS, Alumni interaction with Institute over the last 25 years?

The Alumni have become much more active now and it is a positive sign for the Institute. What has become very satisfying is that they have reconnected with the Institute emotionally too. Of course, earlier too they have been there but now I think they have come together as a group. For e.g. the BITSCONNECT project has become more than just a project now, it's become a sort of mission to connect with BITS. From different parts of the world they are coming together for any cause and this has been particularly satisfying.

How do you see their role in the development of BITS, Pilani?

Well, the Alumni have shown a lot of interest in our projects. BITSCONNECT has been one of them. They have shown eager interest in other projects too in terms of entrepreneurship development. They have shown active participation in projects of societal importance like drip irrigation, drinking water for Rajasthan etc. At Nokia, they have helped establish scholarships. It is the Alumni that are active in all these projects and I know they will continue to be actively involved.

But more than that, I think what is also required now is that they spend time, a sabbatical in Pilani. If the Alumni can come for a period of 3-4 months here then they will become active partners and that's when it'll serve the BITS community more. What I seek from the Alumni is their commitment to spend time, starting from say 15 days to a month, a few months up to

a year even and contribute to the academic growth of the Institute in special areas - society projects, research projects or any other area of their interest and the Institute will be happy to appropriately compensate them and provide them with necessary facilities during their stay here. So this is an appeal to the Alumni, to spend some of their time here in taking up courses, research projects and entrepreneurship activities. We would like to create the same culture of opportunity here like it exists outside, like in the US for e.g. where everyone is driven by a cause and work towards its accomplishment. Let Pilani be a testing bed for this and the Alumni can be a part of this endeavor. This will be my expectations from the Alumni.

There has been a lot of talk about the process of admissions into BITS at the undergraduate level, doubts regarding whether the existing process is really the best one to ensure we are drawing the best talents from all parts of the country. Are there any plans to change the same?

Right now our admission procedure is under discussion in the courts and we are currently defending it. I am not saying that what we have currently is the best, but what we have is a process, a process that gives us students who have a normalized percentage greater than 98%. The process can be altered. But what is required is a national testing scheme which we have suggested to the government, where students have the opportunity to improve their scores and this score obtained can be used by them to apply all universities in the country, something on the lines of the GRE and then the Institution should be allowed to finally select its students. What the government insists today is that it will conduct an All-India test and counsel the students and send them to us, which is not acceptable to the Institute. We have a system, which we are proud of and any system chosen has to be such that it maintains the autonomy of the Institutes. This is the

fundamental issue towards which we are working.

Is there going to be any significant changes in the admission process for the next academic year?

Right now we are making marginal changes. For e.g. for students from the CBSE syllabus we might take them separately from different zones, normalizing their marks with that of the zone's topper. Similarly for Maharashtra and Jammu & Kashmir. We have also proposed to the government the idea of conducting computerized testing, a common test for students all over the country which we are prepared to take up. Right now the matter is subjudice, once the courts clear it then we can think further on those lines. So this year we'll be admitting by our own methods with a few marginal changes as I mentioned earlier which could give a reasonable spread.

Going back to the talk on teaching as a career what do you have to say to the current generation to take it up?

Society develops a norm about what a developed person or a developed society is. In our society unfortunately there is not much importance given to teaching, which is why not many are attracted to it. But if you look at say countries like Canada, teachers in universities are highly respected. So I think as a society we have to develop a sort of faith in the community of teachers. Also it is essential that teachers also behave appropriately. They need to take pride in what they do and have genuine commitment. Teaching is not an alternative to livelihood. My message to all young students who would like to go ahead and get into a teaching profession and have the commitment is to never harbor feelings that it may not be worthwhile. It depends on how passionate you are about it, there is nothing else in this world that can make you as happy. Good teachers will always be respected, they have never been known to earn highly but the amount of respect and

satisfaction received more than compensates for it.

Is BITS doing something to attract good faculty? Like you said earlier, you were offered the chance and then it got you interested. Are such things happening even now?

What we normally do is we place an open advertisement in leading newspapers both for in house students as well as outsiders. Then we have a very innovative recruitment method where if required we call the applicants to deliver a lecture here in Pilani. The recruitment committee consisting of all Deans listens to them and then if found suitable we offer them a post right up to Professor right across the table. There is no need to wait for approval or sanction from any other committees.

We also conduct Intensive Teaching Workshops with about 20-30 teachers enrolled in it every semester, where the art of teaching is taught. In selective areas we conduct subject workshops as well, providing opportunities of discussions in upcoming topics in the field. Opportunities to attend conferences are also given. We have now also provided a special contingency fund to the entire teaching faculty, Rs.6000 for Professors and Associate professors, Rs.5000 for Lecturers and Assistant lecturers and Rs.2000 for the Teaching assistants for their own professional activities. They can use it to purchase books, stationery, subscription to journals etc.

We now have a new campus at Goa. How different is that going to be from Pilani?

BITS, Goa was set up by the Chairman Dr. K.K. Birla with a view to contributing something towards higher education in Goa when an opportunity was given. Zuari Industries with whom they have high involvement, offered land, about 180 acres at a prime location at a very nominal lease rate. Further expansion at Pilani is ruled out because then there'll be

severe water shortage, so when this opportunity came by it was taken up. Also Goa currently does not have any good institution of higher education.

BITS, Goa will have the same model; it will be another Pilani at Goa. The same methods of education, the degree will be from BITS, Pilani. Teaching, evaluation, Practice School everything will be the same. Already about 30 faculty members from here have been posted there. This project is big, with a budget of over 100 crores. It has modern buildings, classrooms that will be air-conditioned because of the climatic conditions of the place, hostels are built on modern lines, and there is no fence/boundary wall for the girls' hostel! (Laughs). Its not that we are giving more freedom, just the concept of a wall that is removed. The aim is to develop a township

Lastly, I come to that inevitable question of comparison of BITS with the IITs, something which I think every BITSian either loves or loathes doing. What do you think are our strengths and weaknesses compared to the IITs?

IITs have some strengths in their own areas because they have developed well. We are certainly proud of the IITs as a nation. Their resources essentially come from the governmental side. Also since their faculty have been involved in a lot of active research projects right from the beginning they have an edge over us in terms of attracting industrial projects and industrial funding. On the other hand on the education front, in classroom teaching BITS remains ahead. In the methods of documentation, the flexibilities in course structure, the elaborate planning of instruction, registration, counseling, which are

through different methods. So let innovations flourish, let different systems be derived out of this diverse country and the best should survive.

A challenge for BITS will be to take on competition from the world's best universities now because education is going to be created as a service by 2005 under the agreement of GATS of which India is a member which essentially means that if any foreign university, say Stanford, MIT etc. wants to set up a campus here in India they can. A fundamental goal of BITS would be to attract best students and faculty to take the journey on.

Well, that's really their methods, the magazines need to publicize themselves and also inform the society. It's a sign of good journalism to inform the society what's best. They have their own

means and data by which they come to such conclusions. So if we are good and among the best, it will be published. Now we have to see that each student, each faculty member, each person who is responsible for any activity in the BITS system works towards being the best in all aspects and take the initiative for the same. You need to see what you can do to give back something to BITS. When I teach, I need to teach the best, if I'm a student I need to study well and this is what will bring most satisfaction.



there like here in Pilani. The significant thing is that it will be a full fledged campus like BITS, Pilani unlike the many engineering colleges in the country which are built at a budget of about 3-4 crores. We have been receiving a lot of support from the Education Ministry in Goa too in the efforts.

highly structured in BITS. The concept of Practice School is something we take pride in, something which none of IITs have dealt with. So it is in these aspects that the IITs have to learn from BITS and it is with these that we are able to compete with the IITs. Both the IITs and BITS draw good students from all over the country

Thank you so much sir, for your time and patience. It has been really wonderful talking to you.

Thank you. I wish all the students the very best and that they do well in whatever career path they choose and belong to that great community of BITSians. †

BY PROF. ARUN LAKHOTIA

Journey from the Thar to the Mojave

Dr. Lakhotia talks about a quest for more than just a million dollars. He can be contacted at arun@louisiana.edu

“EVEN though we were in the middle of nowhere in the Mojave Desert, the atmosphere was charged. Helicopters were whirring overhead, with photographers hanging out the sides. The place was packed with supporters of Caltech, CMU, U of Florida, and the likes. In the midst of this excitement I was leading Team CajunBot (see www.cajunbot.com), a participant in the DARPA Grand Challenge. The challenge: To

build an autonomous ground vehicle that would traverse around 200 miles of desert road in under ten hours.

Team CajunBot had made this far after some intense filtering. There were 106 initial applicants, who were filtered to 35 after design review, to 25 after a site visit, and then to 15 after a demonstration in an obstacle course in the California Speedway.

Here I was, leading Team CajunBot, while I had never tinkered with vehicle, electronics, power supplies, and generators. In

the “Workshop” course in BITS I could not make my candle stand. In EEE lab I had a hard time getting transistors onto circuit boards. The only batteries I am comfortable handling are the ones in flash lights. Thanks to my early experiences at BITS shaped by Dr. Aditya P. Mathur, now in Purdue, I love programming languages and compilers, which is a far cry from robotics.

It was no surprise then when, a few days earlier, I heard Kunal Mohanlal on the other end of the phone asking “What are you doing building a robotic car?” The question got repeated several times as the article on my team in the Times of India of March 9th made its round. The questioners were my batch-mates from BITS, the ones who have known me for 27 years. These were people with whom I had shed boyishness in the Vyas Bhawan and with whom I had contemplated the purpose of life after receiving 2/20 in Calculus I.

Even after two and a half decades of our shared experience, I could answer their probing question by a simple phrase, “Operation G.M.B.” They’d retort, “But we lost that one.” And I’d say, “Yet it was fun and we gave them a run.”



In BITS Operation GMB was a project a handful of us started on a whim, on the way to C'Naught for an evening chai. The goal: To challenge the top dog in, of all things, the Student Union election. The top dog (Hi Sheriff) was assumed to be the winner. No one was stepping up to challenge him. We figured it was our duty to make the top dog sweat and earn the title. Thus, the "B" in GMB stood for the staple food of the Giant Panda. We succeeded in our goal, getting enough votes to instill some fear, but not enough to be stuck with running the SU.

The venture in DARPA Grand Challenge was just another way to relive the days of BITS, or maybe an attempt to fight mid-life crisis. It started on a whim.

Within three months it snowballed into a mega affair, with 23 members in the team, several sponsors, massive coverage in CNN, daily updates in the local print and TV news, and that article in the Times of India. The highpoint, though, was when a competitor from an esteemed university came up and said "We are rooting for you to take the ball from" the top dog.

Though the race ended with a whimper, with all the bots out within 7.3 miles, the experience, or should one say, the trip, was incredible. An unknown team, with no track record in robotics, had, in a matter of months, put together a pretty credible robotic vehicle that sent some jitters among the competitors. Mission accomplished.



Did BITS play a role? It did in more ways than one. Yes, the technical training I received in BITS, refined further through a Ph.D. in Case Western Reserve University, was valuable in this whole adventure. But the challenge was not in technology; it was in integrating people who knew the relevant technologies and in not being intimidated by 'authorities.' Quite coincidentally, I was prepared for taking on that challenge by the first Operation G.M.B in the middle of another desert many years ago. †

Books by BITSians: Reetela Safar (A Sandy Journey)



Utkarsh Rai ('83 batch Maths & CS), Managing Director of Infinera India, Bangalore (100% subsidiary of Infinera US, an optical networking company) released a book of short stories in Hindi on NRIs last year. These stories, written while he was in the US during mid 90s are developed from his interactions with the Indian community. The stories are compiled into a book.

These stories touch the right cord. Written in a style that leaves one feeling that these stories were unfolding in one's own house or in one's neighborhood. The stories are very emotional and raw, conveying many bitter truths.

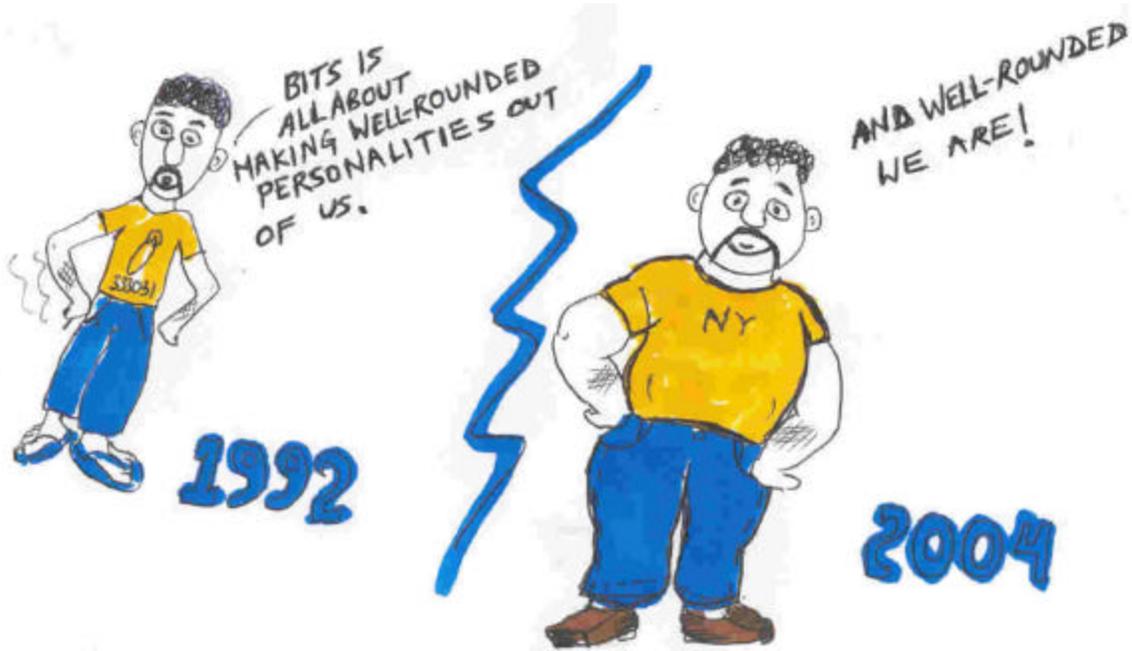
There is a story of a widow who has been invited to the US to take care of the daughter-in-law at the time of her maternity. She is exploited and discarded as her usefulness gets over with time. Another story deals with the dilemma of marrying a professional or a non-professional wife, and the attack on the male ego when the professional wife starts earning more than her fragile husband. A third story revolves around a dark complexioned girl who cannot find anyone to marry her, causing tremendous mental agony to her and her family. She eventually comes to the US where she regains her confidence.

Reetela Safar is named after one of the stories. A beautiful if tragic story, it narrates the migration of the younger son of a farmer family to the US, the torture of his wife by his family when he is unable to send the expected dollars back home. The story of parents who went bankrupt to support their son's studies in the US, and how they cope with his ungrateful attitude towards them. There are funny moments too. One hilarious story describes the attempts of Indian parents to get their pampered daughter to marry an Indian (or should I say, a FOB – fresh off the boat).

Overall a very interesting must read. For a copy or if you are thinking about a mini-TV series (since many BITSians are in the media business) contact utkarshrai@yahoo.com for some outstanding plots.

Anuradha Gupta

<<Cartoons by Rahul Chandra>>

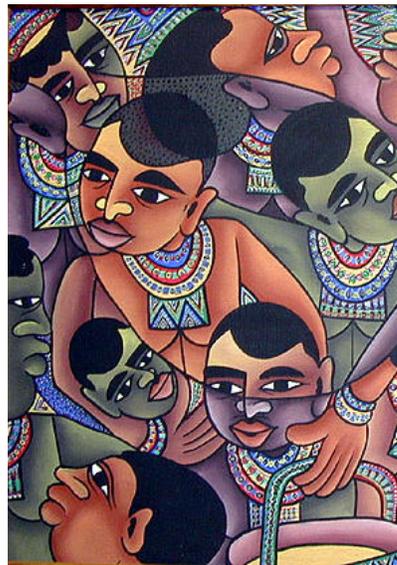


Poetry by Ravi, Anu & Margo

War

BY RAVI CHANDRA ('98A2)

War
 They said it didn't happen in one moment;
 The decision took time to be sent;
 They said we have seen enough to have lost
 Waiting on border to recover the cost;
 Was it war of man, by man, for Man?
 A war that mankind lost
 A war in which kind men were lost
 How many times, will Mankind stoop?
 Let us attempt to break this loop
 Let us start with love and hope.
 Let's try to forget, the nightmare,
 and strengthen the resolve.
 So, Friends across, and brothers away,
 Lets come together,
 before light fades and Mankind dies,
 Let's go to get her,
 back to where she belongs,
 in our hearts, in our deeds and our thoughts
 Lets wage a war
 with war itself ,
 drive it to extinction
 for the Sun to shine,
 for you and me,
 and all that follows from it. †



The Search

BY ANURADHA GUPTA

It's been so long
 Loneliness my companion...
 Sometimes I think,
 I hate this place.
 Lost in the crowd,
 I search for myself-
 Am I just one,
 One cold, bare face? †



A Date with Myself

BY ANURADHA GUPTA

When I slow down,

From the city pace,
 Will I feel empty?
 Out of place?
 Or will I meet myself-
 All over again,
 Rediscover life,
 Beyond ambition and gain,
 Simple pleasures,
 Little joys,
 Truth and growth,
 Little girls and boys,
 Cooking and cleaning
 Reading and lazing about,
 Will I find joy?
 Will I find meaning?
 I have a date-
 With myself today,
 It's been a long time,
 Missing my solitude.
 Soaking in the sun,
 Sipping a cup of tea,
 Dreaming endlessly.
 Watching the world go by
 And setting myself free... †

Two Princes

BY MARGO (WIFE OF BITSIAN)
 WRITTEN AT THE BITSAA EAST
 COAST REUNION, OCTOBER 13,
 2001 IN MEMORY OF SSHA &
 VAMSI

Two princes
 from Pilani
 met again tonight
 laughing like schoolboys
 somewhere in the sky
 a beautiful sky
 ever youthful
 like a Rajasthani morning
 never to die again
 But forever reborn
 Princes from India...
 God bless
 two Rajas
 celebrating tonight. †

Shai ri collected by Anupendra

Sukh

(WRITER UNKNOWN)

Tu chandramukhi main surajmukhi,
Tu mujhse dukhi main tujhse dukhi
Chatt se chhalang laga de,
phir tu bhi sukhi, mein bhi sukhi

Lut chuka hoon main

(WRITER UNKNOWN)

Aur bhi bahut si cheeze lut chu-ki hai dil ke saath
Ye bataya dosto ne ishq farmane ke baad
Is liye kamray ki ek ek cheez "check" karta hoon
main
"Ek tere aane se pehle, ek tere jaa-ne ke baad"



Husn ka hooka

(WRITER UNKNOWN)

Bujha hua terey husn ka hukka
Ek ham hi hain jo gur guraye jaten hain

Chandni

(WRITER UNKNOWN)

Chaand se pyaari chaandni,
Chaandni se pyaari raat,
Raat se pyari zindagi,
Zindagi se pyare aap.



Kabr

BY GHALIB

Na Salam Yaad Rakna, Na Peghaam Yaad Rakna,
Bas Itni Si Irtajah Yai
Jab meh marjow to meri kabar peh zaroor aana
Do phool chara dehna,
Agar rohna na ayehto muskara dehna.



Meri Dil ki Arzu

BY GHALIB

Meri Dil Ki Arzu Yeh Thi,
Ki Tereh Kadmoh Meh Dam Nikleh,
Bewafa Tum Nahin Badkismat Ham Nikleh.

Dil ka Dard

(WRITER UNKNOWN)

Dil Dard Karta Hain Jis Ki Duwa Tum Ho,
Agar Qiyamat (judgement day) Ka Daar Na Hota,
Toh Keh Dehteh Khuda Tum Ho

BY CHANDNA SETHI ('86)

THE STORY OF NOWHERE MAN

If you were the daughter of Punjabi parents who grew up in Bengal and Bihar, and then married the son of a Maharashtrian Tamilian couple who grew up in Hyderabad, you'll face an identity crisis like our author. She talks of her family's attempts to wrestle with being an interracial, multicultural couple. First published in desijournal.com

“So, where are you from?” I mull over this question as I stir the gajar ka halwa while it cooks and as the amti boils.

I am cooking for tonight's dinner at which we are to be joined by guests, an Indian couple I met at Charles de Gaulle airport in Paris last week. Like me, Anil and Saumya were waiting that day to board the plane to Nice. I was returning home; they are residents of New York who were traveling here on vacation. We got talking as we waited and exchanged phone numbers after I gave them some information about the region. We spoke again on the telephone a few times this week. We seemed to hit it off and agreed it

My sister-in-law advises that for best results amti must be allowed to boil for a good length of time. Normally I am not so patient but today I allow that to happen, to buy some time as I ponder how to reply if our guests ask that question posed almost inevitably by new acquaintances to each other - “So, where are you from?” But the problem is that in the twenty years since I left my parental home to find my own place in the world, I haven't found a succinct answer to this question though it has been asked of me on many occasions.

I have often wanted to say in response (and I think I actually did, once or twice) “Oh, from all over the place”. But that can seem frivolous even though it comes

How to explain lives like ours? My parents were born in what is now the Punjab province of Pakistan and spent their early years there. My mother's family then moved in the 1940s to Rajasthan (films like Chandni bring on huge nostalgia for summer holidays spent with my grandparents and memories of thrilling camel rides). My father's family moved to Jamshedpur in Bihar and they have called it home ever since. My father went to IIT Kharagpur and according to family legend came back after four years more a Bengali than a Punjabi in his tastes. My mother accommodated the results of this change in her style of cooking and it led me, fortuitously, to grow up reading such literary greats of Bengal as Sharatchandra and Bimal Mitra.

And since my father spent much of his working life in Bihar, it is where my brother and I were born and schooled. It was then off to Delhi, Rajasthan, Calcutta and Mumbai for the next few years at various points in our academic and working careers while my parents moved to Orissa, where my father worked until he retired.

In the process, we never experienced what is known as “Punjabiyaat” nor did we come to comprehend completely the Bengali or Bihari way of life though those are the cultures that perhaps we have observed most closely (no one in my

family was surprised when my brother married a Bengali and now he calls himself one).

My husband's story is no less complicated than mine. His mother was a Maharashtrian Brahmin while



would be fun to get together before they went back. So my husband and I have invited them to eat with us tonight.

closest to the truth. My father, who cared very little for this line of enquiry, used to say, “Tell them we are refugees from Pakistan”. But that doesn't tell the whole story either.

his father comes of a family of Telegu-speaking Brahmins who moved to Nagpur from Hyderabad just two generations ago. That past is still very evident in my father-in-law's family's religious and culinary traditions. And because my father-in-law served in the Army until he retired and then settled down in Madhya Pradesh, my husband and his siblings can truly claim to have grown up all over the place.

Exposed to so many diverse influences over the years, the original traditions of our respective families have been somewhat transformed and diluted. One benefit of this familiarity with change has been that it has made the task of adapting to each other's ways easier in our marriage. Especially in the matter of food, my husband's Punjabification is complete. He loves nothing better than gobhi ke paranthe any day of the week. As for me, I enjoy nothing as much as I do the varan with rice and toop that he grew up on. (Maybe I should confess here that this isn't the whole truth. It really pains my husband that I refuse to concede the supposed superiority of the Alphonso mango. But though it is beloved to Maharashtrians, it is often unknown to Biharis like me who grew up on such delicious varieties of the fruit as the Dusseri, the Langra and the Sindoori.)

Yet an acceptance of each other's culinary traditions doesn't help us find an easy answer to the question most Indians we meet for the first time ask us about ten minutes into the conversation – "So, where are you from?"

Like the time my husband and I were in a local store that stocks Indian spices. As we browsed, we noticed another Indian and we all stopped to introduce ourselves. We had barely gone past the stage of exchanging first names when he popped this question at us.

I remember thinking to myself "Oh no, here we go again". I knew that my husband's answer—"Well, that's a tough one for us..." he began—would fail to put us in a comprehensible slot because we are the kind of people who are from everywhere and yet from nowhere. But how do you sum up the nomadic past I have described into an answer that can be delivered in one sentence in a shop aisle? Quite predictably, we never heard from this person again.

There are other issues that such muddled histories as ours raise, which are not easily resolved simply



by acquiring a taste for new foods. For instance, I was raised as an Aryasamaji and am still a staunch advocate of that way of life. Yet I also have a deep love of Maa Durga and all that she stands for, while my husband's family have their own set of divinities they put their faith in. Is it possible, I wonder, to find in all this a coherent belief system and traditions to pass on to the next generation?

These are not questions that bother me in a serious way though. I have never missed having a strong ethnic identity, nor the traditions that go with such an identity. For I have noticed that good people everywhere in the world seem to live their lives by the same human

values. This makes them—whether they are Kannadiga, Czech, or Japanese—honest, kind, considerate, polite and hospitable. So as my daughter grows up, if these values are the only tradition I teach, I think we will be okay.

As for tonight, hopefully the food will represent the amalgamation my husband and I are trying to achieve in our lives because this amalgamation is our identity now. The amti and the khamang kakdi reflect my husband's Maharashtrian antecedents while the matar paneer and the dessert represent my Punjabi background.

Imagine my surprise then that our guests expressed no curiosity in our ethnicity in all the hours we spent together. Anil and I were delighted to discover that we went to the same school (though several years apart) in Delhi and that he has relatives who live in the same city as my mother. But apart from this common ground, there was so much else we were able to talk about. We discussed the pros and cons of life in Europe versus life in North America, we exchanged accounts of our favorite destinations in Europe and India, we traded funny stories about our toddlers. And we argued amiably, as all people who know these cities do, about which is the better city between Mumbai and Delhi.

The reason for the lack of an inquisition about our roots became clearer over the course of the evening. Anil, as I gathered from the conversation, is probably a native of Uttar Pradesh who grew up in Delhi but many members of whose family now live in Bihar. Saumya is a Gujarati who grew up in Mumbai. Both she and Anil have lived in America for twenty years. So perhaps they are the kind of people who don't bother anymore with the question of where someone came from.

May their tribe increase. |

BY RAGHAVAN DAMODARAN ('98C6)

IS THERE A GOD ?

ASK a majority of the world this question, and they'd emphatically tell you, "Of course there is, you atheistic lunatic!" Herein lies my problem. I, of the worldly and scientific kind, have certain reservations I know none (except for, maybe God) can satisfactorily answer. Maybe it is just my background that makes me think this way – born in Libya, where religion was a cause for the country being abolished from the international arena; bred in Kenya, where fighting among the tribes over their Gods has led to instability; based in India, where thousands die each year because Muslims & Hindus cannot see eye to eye. Everyone agrees there is only one God, and that Jesus, Ram, Allah are but people's customized images of Him. If that is the case, would He want to create so much fighting and hatred amongst people over His name?

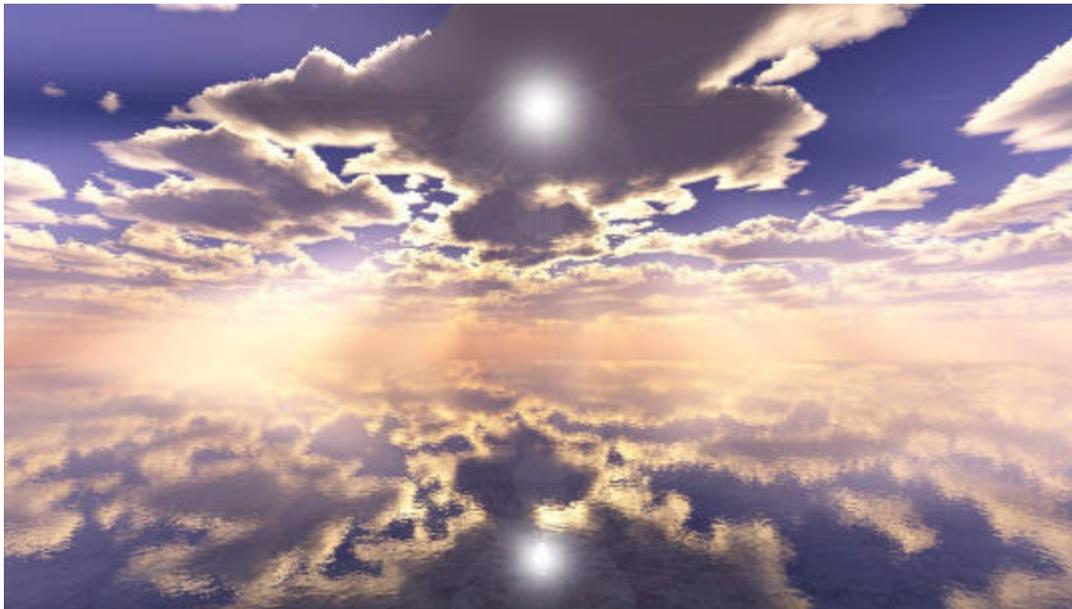
binding society together, giving people a set of rules that would be for their benefit and would give them a sense of belongingness. The Bible, Bhagavad-Gita and other holy scriptures were stories to give concreteness to the existence of God. God served as the figure of admonition whenever you went astray. Church, mosque, temple visits were occasions to socialize with people we would otherwise have not met. However, over centuries, people in power have used religion as a means of building wealth, threatening people into submission, and encouraging activities that would benefit themselves. Such people, in particular, have tarnished the name of Islam.

Having said this, I was once a "believer", not your hard-core lay-my-soul-at-the-Lord's-feet kind, but your average being that never failed to remember Him during times of

removing one's sandals before entering any place with God's statue, closing our eyes while praying. I have logical explanations for each of these practices outside of religion – the first for ensuring that stray nails do not pierce your skin, the second for keeping the house tidy, and the third for the perfect meditative posture. Religion is good for one, when one understands the significance of what he/she does, and does not go overboard.

Religion has fed many people through social occasions, given employment to many more, and galvanized people into thinking for their own, and society's good. It is not the fact that I do not believe in the existence of a God, it is merely the fact that I trust myself more than I trust any religious concepts of re-incarnation, water cleaning your sins, prayer giving you all you want. How about getting a clear picture of what is right, doing right, and

everything takes care of itself? I like to call this "The Law of Social Justice". Where one is born is just the draw of the lot, but every succeeding minute is in one's own hands and not predetermined by Fate. What you sow is what you reap; over your lifetime, what you do is what you end up getting. Be a



Would he not come down and show himself to us and put the world at peace? I believe religion originally started off as a set of rules for

crises, the regular occasion being on the verge of flunking an exam. In Hinduism, we have certain rules like not cutting our nails after sun-set,

nice person, and the world will be nice to you. Simple enough, is it not?!

BY TIRUMALA RAO TALASILA ('84A7)

BRIEFINGS FROM THE LAND OF THE DRAGON*This article describes the author's perspective on China since his relocation from the United States*

“You really have to master the Chinese language to understand Chinese business and people”, advised a 76-year old retired businessman on a flight from Shanghai to Beijing. I nodded in agreement as I looked back at my own experience. My two semesters of Chinese in the United States helped, but I got a long way to go before I can master the 5000-odd Chinese characters. What added to my confidence is the fact I “mastered” the indecipherable “Modern Physics” during my first semester in Pilani, circa 1984. So Chinese shouldn’t be that bad, I comfort myself.

It has been 8-months since I relocated to China after living in the United States for the past 15 years. I have been going to and fro China since 1997 almost every year. I have seen a lot of changes within the Chinese economic and business landscape and people’s attitudes since then. There is no doubt that the Chinese economy is growing at a mind-boggling rate. The landscape and economy are being continuously reshaped. First time visitors to China are quite shocked at the high level of development and sophistication in China, especially in the coastal provinces. The 8-lane freeways are very similar to that found in the United States, the only give away signs are the highway signs written in Chinese in addition to English. The skyscrapers in Shanghai, a la futuristic Blade-runner kind, compete with the world’s best.

The business environment is very unlike of the United States or India. It runs by its own rules. I am able to experience this personally in my role of managing the subsidiary of a multinational major in China. Having the ability to converse with Chinese gives you a better glimpse on the

but only on paper. An erudite Beijing businessman told me after he watched “The Gangs of New York” that he felt China feels similar to the environment portrayed in the movie. China is a new nation being born out of the principles of raw capitalism. Lots of opportunities are up for grabs and



going-on in addition to bringing the credibility. Knowing the right people is essential for success in this new business frontier.

The pace of things in China is very fast. A skyscraper can appear from nowhere in a year. Business opportunities are found and exploited within a few months. The unbridled capitalism at work in China is certainly going to make Adam Smith proud. Yes, this is still a Communist country,

there is the making of rubber barons equivalent in China. Having established itself as the unquestioned Manufacturing Superpower, China is now focusing on reshaping its vast industrial and information base. Like any other nation, China has its own Achilles’ heal. But the nation’s people and its leadership are supremely confident that they are going to reclaim the economic and political leadership on the world stage that rightly belongs to China.



Foreigners still have a lot of misconceptions about China. I am quite shocked at the low level of awareness at the corporate levels in India about China. I also feel an average Chinese knows more about India than vice-versa. A Chinese man on the street knows about Vajpayee being the PM of India, and that the famed Shaolin temple (of the 36th Chambers of Shaolin fame) in China was founded by an Indian monk in the 6th century AD. On the contrary, I am not sure an average Indian knows who the PM of China is, nor knows that China has a better quality of life factors than India.

What struck me first during my visit in 1997 as very impressive was the leap in living standards achieved in one

generation. I spoke to the average man on the street and students in buses and trains. And the stories I hear amazed me. I distinctly remember one conversation where a student told me how her peasant parents now live in a 3-bedroom house with all the modern conveniences whereas just 15 years back they lived in a house sharing with two other families. I confirmed this story is quite common across coastal China. People who were previously using hand-fans can now sit in air-conditioned homes and offices.

There is an infectious energy in China especially in the area of doing business. People are willing to do whatever it takes to build a business and grow it big. There is tremendous pressure in the society to succeed. There is also a growing tension in society with this pressure and also with



generation. I spoke to the average man on the street and students in buses and

the disappearance of the iron-bowl social security umbrella. The

competition therefore is pretty ferocious. This is quite evident in my conversations with business folks and entrepreneurs in China.

With regards to improving the English language skills, I have seen the commitment of the Chinese government in action on the ground. Since my past two visits I have seen a noticeable change in English speaking ability. I was surprised when the person who washes hair in a hair-salon started conversing in some rudimentary English. Even the regular guy standing besides a soybean milk stand is now trying to say a few words in English. The joke that is going around is that it is 'WTO English'. The students whom I met tell me that their government wants them to focus on learning English more than Chinese. The roads, highways, and public places now have signs both in Chinese and English. I have seen this phenomenon in the Chinese hinterland not just in the coastal areas.

There is lot of respect for India and its intellectual firepower in China. Everybody in China knows that India is a software and movie powerhouse. Many Chinese are not aware that China and India had a border dispute and that both the countries went to war in 1963. The knowledgeable ones feel there is no need for both the countries to be hostile. When I was visiting a museum of a tomb of a Tang Dynasty royal in interior China, I noticed so many artifacts that clearly had strong Indian influence. I could have mistaken them to a temple in southern India. A staff of that museum remarked "Mao bought down misery to millions of Chinese. He also started a war with India. Lets not be hostage to some incident in the past. These artifacts show our common heritage and how both our cultures flourished together in the past. We should join forces and flourish together today and in the future".

US based EEE grads teaching Engineering/IT

Professor	Position	Department	University
Aditya P. Mathur	Professor of Computer Sciences	Department of Computer Sciences	Purdue University
Alok N. Choudhary	Associate Professor in E&CE	E&CE	Northwestern University
Amit P Sheth	Professor; Director, Large Scale Distributed Information Systems Lab	Computer Science	University of Georgia
Babita Gupta	Associate Professor, MIS	Institute for Management and International Entrepreneurship	California State University
Bala Natarajan	Assistant Professor	E&CE	Kansas State University
Divyakant Agrawal	Professor and Chair, Department of Computer Science	Computer Science	University of California at Santa Barbara
Hari Narayanan	Associate Professor of Computer Science	Computer Science & Software Engineering	Auburn University
Harmit Kaur	Professor of Electronics & Computer Engineering Technology	E&CE	Sinclair Community College
Jay Sethuraman	Assistant Professor, Industrial Engineering and Operations Research	Fu School of Engineering & Applied Science	Columbia University
Kartikeya Mayaram	Associate Professor	E&CE	Oregon State University
Mustaque Ahamed	Professor, Computing	College of Computing	GeorgiaTech
Narendra Ahuja	Professor, Beckman Institute, and Coordinated Science Laboratory	E&CE	University of Illinois at Urbana-Champaign
Padmanabhan Seshaiyer	Assistant Professor	Mathematics & Statistics	Texas Tech University
Rahul Telang	Assistant Professor, Information Systems	H. John Heinz III School of Public Policy and Management	Carnegie Mellon University
Ravi Ravindran	Professor of industrial engineering & Head of the Department	College of Engineering	Penn State University
S. Ramasubramanian	Assistant Professor	E&CE	University of Arizona
Sanjay N Rebello	Assistant Professor of Physics	Physics Department	Kansas State University
Shiv Chandrasekaran	Associate Professor of Electrical Engineering	E&CE	University of California at Santa Barbara
Soumitra Sengupta	Assistant Professor of Medical Information Systems	Columbia Medical School	Columbia University
Srinivasan Vedantham	Assistant Professor of Radiology	School of Medicine	Emory University
Srisankar Kunniyur	Assistant Professor and Multimedia and Networking Laboratory	Electrical and Systems Engineering	University of Pennsylvania
Venkatasubramanian Mani	Associate Professor, School of Electrical Engineering and Computer Science	School of E&CE	Washington State University
Vinod Malhotra	Associate Professor, Department of Electrical Engineering	Electrical Engineering	University of Hawaii at Manoa

BY ANURADHA GUPTA ('86 MMS)

MY LIFE AFTER 'MMS'

Without a doubt, MMS was the hardest degree to explain, the people who most struggled with job interviews, and who were known for the most progressive thoughts, the hazaar cat shats on campus. It is interesting that so many MMS students now teach at US business schools. One student talks about her journey to create a life after MMS that did not include Java, Cobol and C plus plus.

WHO said people are

known by their actions. In India, as in many other places, they are defined by their degrees and careers. Stripped of that, how do you introduce yourself?

I tried that when I took a 'sabbatical' (sounds respectable). Tried to define myself by my name and interests and not bask in past glories or future aspirations. Quickly shifted my stance. Tried to say I tried to say I was a writer (but more often than not, I have writer's block – who cares). So a simple definition was not to be...

I remember tentatively stepping into the BITS Audi with my feelings all muddled up. Well, I was 86A6PS--- and happy to be there. I was ambitious but hadn't been able to put my finger on what I really wanted to do. I knew I wanted to teach sometime but that's about it. What, when, how, was all a puzzle that would unfold. My father had traveled to Pilani to get the BITS form and I had filled it up without knowing much. I didn't even know that a dual degree would afford me an opportunity to get a 'real' engineering degree, but that didn't matter then because I wasn't awfully keen on engineering. (Now it does sound dreadful, doesn't it)? People were so shocked when I nonchalantly mentioned all this (probably thinking that I would turn out to be a 4 pointer or

some kind of nincomp oop) so I stopped doing it and pretended I was headed somewhere. It's just that we were all expected to do pedigree things from pedigree places. And get churned out of an assembly line as India's crème-de-la-crème.

One of India's crème-de-la-crème was busy daydreaming in the Audi when they talked about MMS. That MMS was like an engineering and management degree combined in a neat, 4-year package. Sounded very, very impressive. Very inspiring. That one no longer needed to do a 4-year engineering course and then slog at a good management institute. One could get by with MMS from BITS, Pilani. Ah, if wishes were horses...

Pilani was great fun, acads were wonderful, (extra-curricular were close competitors) and I think more than what the acads taught me, it was learning how to handle one's acads or one's life or one's career that I learnt - in subtle ways. It restructured my brain. It added to my status (that I was a Pilani breed ka pilla). I also discovered the joys of marketing, advertising and psychology. I spent time mulling over the social cost benefit analysis of projects that were being appraised and the delights of Maggie at Blue Moon.

Some sort of discrimination is part of every social structure. Against a race, or a stream or a caste or a state or a...degree...well, MMS junta were considered by some, to put



it mildly, - as vela. There were those of us who took pride in that and those of us who disputed it. I was too obtuse to care. There were other class wars (in Marxist fashion) amongst other streams so it wasn't as if MMS was singled out. I will never forget the scene in the Audi when we all were watching Ankush and a group of actors on screen talked about being out of jobs despite being civil engineers. There was pandemonium...junta wrecked chairs, booed, yelled the Audi down and the movie had to be stopped for a while...so every

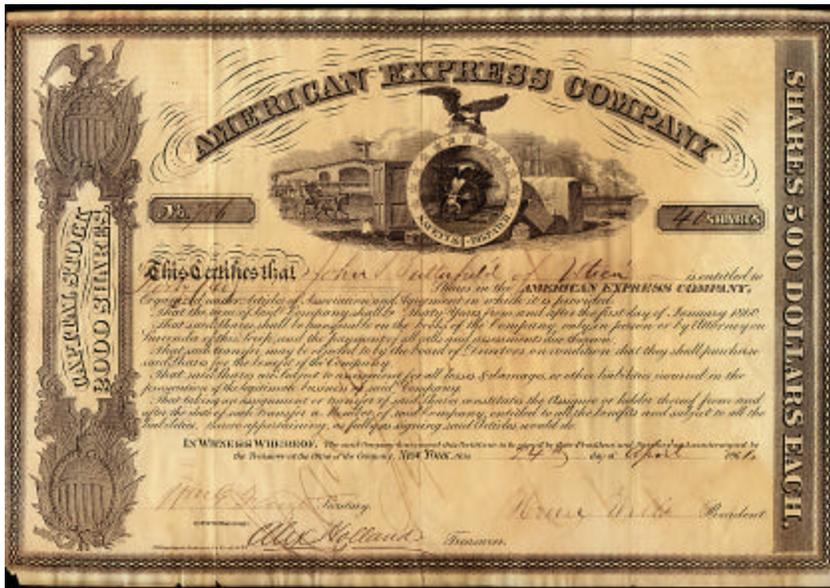
stream had a history to contend with.

Well, it was 4 years later that I went on to try and corroborate the Orientation theory of MMS (Engineering+MBA) at the TCS campus interview. And before they could ask me about getting into the regular software development stream, I asked them whether they take MMS people for their management consulting division. There was a bit of a smirk on one recruiter's face, and a hint of an apology on another's. A diplomatic, HR type reply, "Because we really think that you can get into management consulting but after

People celebrated other people's jobs but I did not have any ace up my sleeve. Not yet.

That MMS was like an engineering and management degree combined in a neat, 4-year package. Sounded very, very impressive. Ah, if wishes were horses...

W And after that PS at



a few years spent in software development." "Well then, I am not interested." I said and walked out. I went for the HCL PPT but decided against selling computers. I wanted an ad agency, or even set my sights on Hindustan Lever but discovered that HLL does not come to the BITS campus. So I dropped out of campus placements and my hitherto carefully nurtured academic and go-getter reputation fell slightly. I don't think I was any longer 'in'.

American Express taught me another big lesson – that they do not recruit BITS MMS junta. Also, that they did think that I would do some data-entry kind of stuff for them, amongst other things. Well, they had bitten off more than they could chew. I harassed my guide and made him hire somebody for data-entry (I shook them to the core of their beings I think, ha) while I did some of the more exotic projects that the IIM guys were doing – on Competitive Strategy

and development of a software for Incentive Planning.

I had heard that off campus one really had to hard sell oneself to the industry – starting with what MMS is all about. But I got into Trikaya Grey. Thankfully, at that interview I did not have much explaining to do. I talked my way through the interview (the way only a BITSian can, the way I had been convinced in the Audi, Day 2 at Pilani), demolished people at the GD and stayed all night working on my first day as an Account Executive. Not my cup of tea, no, I wanted my Mother to know the name of the company I worked with (or vice versa – she had already had a hard enough time explaining MMS to her friends – now Trikaya Grey? I had to bring credibility and respectability back to my life). Panda, one of my closest pals who also did MMS joined Trikaya with me and had a meteoric rise – last heard he was heading the Mumbai Branch of Trikaya Grey.

Other MMS batch-mates of mine (some without additional degrees and some with) seemed to have done well – currently, one is in Pepsi, one in GE, one in an Ad Agency, one a partner at one of the big 4 consulting firms, one in UPS (one of the brands with the highest equity in US), some in software (again, either in Marketing or Business Development), one embarking upon a career to teach autistic children and so on. Quite a motley brew, quite impressive. Lends a lot of hope. Wonder what the path was like.

Well, I had decided that after MMS I couldn't have a repetitive life (like I scream for Ice-cream and any time I scream

that's what it means – a silly metaphor inspired by my child) and end up doing another MBA. A specialization was called for and I zeroed in on MBE (Masters in Business Economics) or MBA (International Business) at IIFT. Got into both and decided on IIFT since it had a good placement record (HLL included) and I had other BITSians for company. The class profile was impressive. And we were taught the boring bureaucratic regulations that the Indian Government had created as a part of their earlier vision to be a socialist and self-sufficient, closed economy (amongst other things).

Here I was, neither was my engineering perfectly respectable, nor my management degree absolutely the best. Heard of the Avis Ad – 'We're number 2 so we try harder.' That's how they got ahead of Hertz car rentals, it was a landmark ad. Very inspiring strategy.

Except that in 91 (my MBA – (IB) was from 90-92) Mr. Chidambaram decided that he had to give my career a different direction. Well, that was not his primary motive I am sure, but he dismantled controls and liberalized India. In my little

life, that meant that IIFT had to redefine its role in the new context and reposition itself as an Institute that taught International Business in the real sense of the word and so on. It didn't really matter to me, I had decided to get into HLL and worked towards that so IIFT really was like a stepping-stone. It helped again when I taught briefly at SP Jain.

But again in organizations, there is so much mentoring and the IIM's, XL and Mumbai Institutes etc. are so powerful. Here I was, neither was my engineering perfectly respectable, nor my management degree absolutely the best. Heard of the Avis Ad – 'We're number 2 so we try harder.' That's how they got ahead of Hertz car rentals, it was a landmark ad. Very inspiring strategy.

When I heard of MMS people taking CAT I could have kicked myself. Considering that I was A Big Fat Rat in the Rat Race, I wanted to eat every fat cat and climb up the corporate ladder. I wanted to live down my stupidity at not taking CAT. I was able to. (Esp. when I realized – on a very philosophical note – that at the end of the day we are all selling soap!).

And then of course, everywhere, in corporate life and with friends, there were the inevitable questions about what my undergraduate degree was. MMS met with puzzled looks. I had to define it as a course in Pilani (based on the MIT system of education – ah, what we do to lend a halo around our heads) where we take all the engineering courses in the first two years and then study our

disciplinary courses, which are all related to Management. Of course, we do a lot of interesting electives like Project Appraisal (I would leave out Philosophy which I actually enjoyed more) and work off campus for six months. I would name drop. Talk about American Express. Not talk about the struggle it involved. To lend a bit more of respectability I would talk of my PS-I at CSIR. That was my claim to fame, to being scientific in a country obsessed with science.

And at some stage when I dropped out of the rate race, I thought I would temporarily teach at school (before getting back to the grueling Post-grad Institute teaching routine). That's when I realized that I can teach only something that is related to my Undergraduate degree. What that is and how that is defined is anybody's guess.

Considering that in Management one is taught to 'present one's views' and I had always wanted to pen down my thoughts, my hobby – writing – became my part time career.

I am sure a lot of you have had better experiences (and some worse). Also, a lot of water has flown under the bridge. In Darwinian fashion, mutations might have occurred in the evolution of MMS. Watch this space, we may discuss this further. If I am not skinned alive by then of course.

Disclaimer: This article is not meant to offend anybody including myself. It is a true, honest admission of what I went through...!

COMPILED BY RAUF ALI

BITSIANS RUNNING WILD

BITSians have been known to pursue alternate careers. Movies, music, art, journalism, politics, social work. But nothing is quite as unusual as the career that a handful of BITSians have taken up, working in forests with monkeys, crocodiles, elephants, tigers and more. What is common to each of them is the passion for their work, and the fulfillment of their careers. These are their stories.



RAUF ALI & THE LIONTAILED MACAQUE

(72S04425)

A spur of the moment decision took me to the BITSAA concert in Bangalore last July. Few memories remain from the alcoholic haze most of us were in. Old friends whom I met twenty-five years after graduation were surprised and amused to find that one of their numbers was different. He was not either a manager or an engineer. Well, actually was doing a very weird thing. I was a wildlife biologist! Thinking about it, I came up with six

more names, of people from BITS who had opted for the same career. I was able to contact four, and they responded. They have told their stories in their own words, with varying degrees of effort, and with the occasional annotation

where I know something.

First, about myself. I grew up in a family of zoologists, but never considered it a career. Joined BITS in the unassigned category, in those rare years when the experiment was tried. Found a couple of Ph.D. types who were induced to come out of the closet and go bird watching, usually in the thorn forests outside the campus. In my second year, I decided I didn't want to be an engineer, and all this molecular bio stuff was boring. Luckily B.Sc. was offered for the last time....

I started working on the highly endangered liontailed macaque in an area now known as the Kalakad-Mundanthurai Tiger Reserve (as a Bombaywala let

loose in rural Tamil Nadu for the first time, you can imagine the problem with these words!). I also did some work on bonnet monkeys at the same time and found I had so much info on them that it made sense to write up my Ph.D. dissertation on them. Which I did at Bristol in England, followed by research assistantships at the Smithsonian Institution and then Harvard.

I then made the mistake of coming back to India, and found myself the pawn in a lot of political games. This is all university education in India seems to be about. Three universities later (Madurai- I resigned; IISc- I quit noisily; Pondicherry - I was sacked after abusing the Vice-Chancellor), and after having the exalted status of Professor, I began working for NGO's. I'm now trustee of one. In the meantime, I've worked on forestry economics, protected area management, gibbon behaviour, birds, plants, and coral reef socio-economics, besides hopefully helping a number of young reprobates to get started (see below).

Most recently I've spent the last couple of years in the Andaman Islands looking at various environmental problems there. I hope to start a research program there soon.

Rauf Ali

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JAYASHREE RATNAM & THE CROCODILES

A dreary PS2 in a grey New Delhi, a couple of hikes in the Garhwal Himalayas and a trip to Corbett National park, and I had the epiphany of my life: being a computer scientist was clearly not for me. I returned home to Chennai to reexamine my choices, and decided to work towards joining the Master's program at the Salim Ali School of Ecology in Pondicherry. I passed the entrance exam, but whether I would have made it through the interview had not Dr. Rauf Ali, one of the interview panelists, chosen to do no more than merely raise an enquiring eyebrow at my less-than-heavy CGPA, will always be a question in my mind. (She

would have, actually. I saw a BITS mark sheet and went, without even realizing it, into vicious ragging mode, much to the shock of my colleagues on the interview panel-RA) In what followed, I graduated with a master's under Rauf's aegis, trained as a behavioral ecologist. It was my good fortune to wander the forests of southern India and the Andaman islands in search of birds and lizards during this time. (Well, one type of lizard...a gecko actually. It was bright green and hung out on coconut leaves-RA) This was followed by a year of studying captive monitor lizards at the Madras Crocodile Bank Trust in Mammallapuram (I Do recommend a visit - its denizens of open-mouthed, apparently indifferent crocodiles and turtles in fact have a fascinating evolutionary history and resilience). From there to the cold northern climes of upstate

New York for a PhD program at Syracuse University, where I continued to train as a behavioral & evolutionary ecologist and conservation biologist. In a truly strange series of coincidences, I ended up studying decision-making behavior in bonnet macaques in the Mundanthurai Tiger Reserve in southern India for my dissertation; the coincidence being that I studied the same troop of bonnets that Rauf had studied in 1976 for his PhD. Indeed, we believe one of the females he

had studied was still alive, albeit very old at the time of my study 22 years later. Her thoughts on the predilections of some graduates from Pilani for staring curiously at her for hours, I am sad to report I don't know. As of the current moment, I am a research scientist at the Natural Resource Ecology Labs of Colorado State University. I now study patterns of herbivory and the morpho-physiological adaptations of trees in the semi-arid and arid savannas of Africa. This is a necessary detour- any biologist must needs see Africa- after all, it is the cradle- and an incredibly beautiful one. I imagine I will eventually be back in the forests of southern India, hopefully to study and work in them for the rest of my life.

Jayashree Ratnam

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MAHESH SANKARAN & THE TIGERS

I boarded the bus for that all too familiar trip from Pilani to ISBT for the last time in 1988. M.Sc. (Tech) Computer Science is what the degree said. I signed on the first dotted line proffered my way and plunged headlong into the fiefdom of corporate overlords. (And also the world of sleazy bars in Pondy where I got to know him and Jayu well-RA) Two years and as many manic bosses later (most didn't like being called fools to their faces, a disease all of us seem to have picked up-RA), I was through with the corporate world. A hop across the pond found me in the cotton-pickin' South, pursuing a Master's degree in Wildlife Sciences at Auburn University, Alabama. Between prolonged periods spent at the local watering-hole, I worked on

developing spatially explicit models to predict extinction probabilities and patterns of gene-flow in endangered small mammal populations. From there it was on to the snowy expanses of upstate New York for a Ph.D. at Syracuse University. For my dissertation, I worked at the Kalakad-Mundanthurai Tiger Reserve in south India, investigating the potential causes and consequences of recent herbivore and predator declines in the reserve. (This is nonsense. He lit forest fires and watched what happened to the plants afterwards-RA) I am now a Research Scientist at the Natural Resource Ecology Laboratory at Colorado State University, having spent a year in the interim as a post-doctoral researcher at the Imperial College in London. My research focuses on understanding how species extinctions within communities influence their subsequent ability to function and recycle water, nutrients and energy. I will eventually return to work in

the forests of the Western Ghats. In the meantime, I am studying savanna-grassland ecosystems in Africa - Kenya and South Africa in particular.

Mahesh Sankaran,

mahesh@nrel.colostate.edu

MADHU RAO & LOGGING

I had always wanted to be an ecologist and as a keen outdoor person wanted to ensure I chose a career where I spent most of my time in the wild. I completed the Bio.Sciences degree at BITS as a start. I dropped computer science as a dual degree much to everyone's horror. I was always quite keen to follow something other than the usual professions and wildlife, nature and the like have been a long-time favorite. So, I guess I am fortunate to be actually making a living out of doing something I really enjoy and believe in. I initially did a MS in Conservation Biology at Duke Univ. researching orangutans and selective logging in Indonesia followed by a Ph.D. researching forest fragmentation in south eastern Venezuela. Following that I became assistant director of the WCS Asia Program based out of New York designed and managed projects in about 12 Asian countries. I am currently Associate Conservationist with WCS and working on projects in Burma and South East Asia. It has been a fun ride all the way and I cannot think of anything else I'd rather be doing.

Madhu Rao

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ARUN VENKATRAMAN & ELEPHANTS



What do wasps, Asiatic wild dogs and elephants have in common? Nothing at all, apart from the wacky spectacle of a Wonky working on all these diverse taxa through a series of events that were actually quite connected. I was one of few BITSians who steadfastly refused to do a dual degree, despite considerable family and peer pressure, preferring to pass out with a M.Sc. Bio. degree. Armed with superficial wisdom in everything from circuit theory to the dynamics of social change (I perfected cracking make-ups there!) and unable to compete with curricula trained Molecular Biologists, I opted to do a PhD at the Centre for Ecological Sciences, IISc, Bangalore. I then spent 5 years watching social wasps do everything from copulating to evicting colony queens! And did produce a reasonably sound PhD at the end of this (fortunately visits by my

illustrious senior (Rauf) were far and few then, as it took days to recover from them!). During the last year of my PhD, the call of the wild hit hard abetted by a nascent group working on wildlife ecology at CES and

frequent trips with a hopelessly teutonic German primatologist. This call has actually persisted through much of my life and while at BITS, resulted in a trip to Sariska with a despondent group of batch-mates. Memories of this trip include 7 of us spending a night in a hide with, what turned out to be a deranged homosexual guide. My enthusiasm for wildlife fortuitously did not dampen.

As wild dogs or dholes are possibly the most social mammal known within the country and offered immense challenges in their study and conservation, I promptly declined all post-doc offers abroad and aided by a grant from the government began working on these elusive animals for the next four years in the Mudumalai Sanctuary, Tamil Nadu. So far this has

been scientifically the most rewarding and exciting period of my life. At the end of this, family needs did prevail and I had to move back to Bangalore for my son's education and my wife's apparent sanity (actually she now wants to go back to the wilds and is diligently constructing our house outside Bandipur Tiger Reserve). Around this time I was offered a position to direct scientific programs at the newly created Asian Elephant Research and Conservation Centre at CES, Bangalore and I was there till August, 2003. The job was great and allowed much travel to elephants habitats in India, Southeast Asia and Africa.

The halcyon days in Bangalore were however short-lived. I was selected to head a new program for South Asia under the Convention for International Trade on Endangered Species called MIKE (Monitoring of Illegal Killing of Elephants). I presently provide technical advice and build capacity for the implementation of this program by the Government's of Bhutan, Bangladesh, India, Nepal and Sri Lanka. I live in New Delhi that has been aptly described as a dark and dreary place by a contributor to this feature. But thanks to work-related travel frequently get out to sunnier climes.

Arun Venkataraman

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BY VIKAS CHANDRA

WHEN ACADEMICIANS BECOME ENTREPRENEURS

THE THIRD IN A SERIES OF PROFILES

Prof K.R.V. Subramanian (popularly known as Raja to BITSians) has made contributions to BITS by the creation of institutions that have given BITS an edge over other institutions, and will outlast all our lifetimes. He remained at the helm of technological leadership of BITS during a tremendously successful and satisfying 26 years that he spent there. Prof Subramanian joined BITS, Pilani in 1974, and joined BITS upon graduation in 1979 with MA (Hons) Economics.

After 1985, he taught courses in Computer Science and Information Systems. He served as Group Leader of Computer Science for 3 years during 1986-1989. In 1989, he started the Center for Software Development and served as the Chief Coordinator till 1995. During 1990-2000, he served as the Dean of the Distance Learning Program Division.

In May 2000, Prof. Subramanian left BITS and moved to Bangalore to start AnswerPal (now Ascendum). He currently serves as the CEO of Ascendum. He is also one of the Directors on the International Board of Standards for Training, Performance and Instruction. He still maintains very close ties to the BITSIAN community in India and Abroad.



Name: KRVS Raja

Academic Position: Former Professor & Dean of Distance Learning, BITS Pilani

Entrepreneurial Venture: Founder and CEO, Ascendum

Contributions to BITS Pilani: Key in setting up the Distance Learning Division and the Center for Software Development

Education: PhD & MS, Computer Science; MA (Hons) Economics, BITS Pilani

You spent almost 26 years at BITS. How do you remember your BITSian days?

I remember my BITSian days (26 continuous years) in a number of ways:

Very vividly. I remember quite of number of events very vividly from my Freshman year to my last day of work there in May 2000. Often, my wife Usha (she spent 16 years in Pilani) my daughter Nitya (while she was not born in Pilani, she spent her formative years till she was 13 in Pilani) and I reminisce our Pilani days and recall many events very vividly. These memories are very special for all of us!

With lot of fondness. I remember my BITSians days with a lot of fondness – love for the institution, love for the place (dust, heat, cold, and all...), love for the people (I think Rajasthanis – at least the people I met in Pilani, are among the most honest, simple and hard-working ones).

With a lot of pride. Over the years, I came to respect the institution and what it stood for in the world of education. I came to respect the processes, the flexibilities, the transparent nature of conducting business, and the opportunities for growth that it offers for faculty and students. I came to respect the selfless dedication of a number of teachers. I came to respect the batches of students who made me feel younger and vibrant with each passing year. I remember my BITSian days with a lot of pride!

With immense gratitude. It was BITS that gave me everything I have today. It gave me a good education, it gave me an opportunity to follow my dreams, it trusted my abilities, it enabled me to grow in multiple dimensions, it helped my wife blossom into a good teacher and a professional, it gave me a community life that I cherish very much. It gave me nearly everything I have today – more than what I gave BITS back. I remember my BITSian days with immense gratitude.

What were the reasons to leave an illustrious career in academia to start AnswerPal (Ascendum)?

I enjoyed every aspect of my stay in BITS (teaching, research, development, managing, mentoring, whatever). After I started the Center for Software Development at BITS, I had the opportunity of working with many brilliant students. The numerous discussions that I had with them contributed a lot to widening my ideas of technology, development, ideas, opportunities, etc.

During my stint as the Dean of Distance Learning, I had the opportunity of honing up my management skills. I had the opportunity of interacting a lot with industry. I tried to run the Distance Learning Programs as though it were an independent business division of a corporate body (from the operational

efficiency point of it). This gave me the confidence that I can possibly run a good business too.

On one of the cold winter nights in 1999, a few students and faculty (who worked with me and Usha at the Center for Software Development) started a freewheeling discussion on what it would be if we moved out of BITS and started to run a business. What started off as an “agenda-less discussion” or a typical BITSian “lachcha” quickly took the shape of a compelling choice for all of us. Well, we discussed some more, did some soul searching, and then we decided to move out and take up this challenge.

Talking to Dr. Venkateswaran about our decision to move away from BITS was one of the toughest things Usha and I have faced in our lives. Dr. Venkateswaran has been a great teacher, a wonderfully warm friend, mentor, philosopher and guide. Suffice to say that Usha and I choked on our words with intense emotion the day we talked about this decision to him!

Did your experiences at Pilani prepare you for your entrepreneurial activity?

Yes, they certainly did. First was my experience of setting up the Center for Software Development and running it somewhat successfully.

Second, my experiences in running the Distance Learning Programs for nearly 10 years and helping it grow healthily.

Third, the opportunities I had in interacting with wonderful people from the industry. They taught me so many things!

Of course, there were several things I was not prepared for (I am still learning). I tried to learn and adapt as fast as I could. Perhaps the BITS educational system subtly prepared me for that too!

Tell us more about AnswerPal (Ascendum).

AnswerPal started off as a simple software solutions & services company. We began working with software product development companies in the USA (small-to-medium sized companies), providing some high-end architecting, designing capabilities, R&D support, and the like. Even today, the software solutions & services remains a large part of our business.

In 2001-2002, we had the opportunity of working with IBM in the development of courseware products (in the broad areas of software engineering). We quickly realized that learning solutions is our passion and also our core competence (we have a good number of BITSians with us!). Today, we also provide custom eLearning solutions for corporate entities. We are also developing eLearning courseware products in specific areas. We employ a very unique and compelling learning methodology called “Learn by Doing”.

In January 2004, we changed the name of the company to Ascendum. Ascendum has two divisions – one that deals with software solutions & services, and another that deals with learning solutions. We have a lot of exciting development initiative underway in the learning solutions.

Have BITSIAN connections come in handy in your new venture?

Surely, it has! I am probably a lot more fortunate than many others in that I have known BITSians of various batches – from my seniors to those who were there in 2000 too! BITSians have helped me in various ways. Some have directly helped with routing some business our way. Others have helped in introducing me to people who are potential customers. Still others have helped shape my thoughts, attitudes and actions with helpful advice.

Having said that, I honestly believe that business networking among

BITSians is still in a nascent stage (as compared to other alumni groups). There is a tremendous potential and I am hopeful that BITSians would come together sooner than later and network furiously.

You have been involved with so many things at BITS; which one do you think made the most important impact on BITS?

I can think of two things, one from the viewpoint of BITSian students and the other from the viewpoint of the institution.

The Center for Software Development that I started provided opportunities for several students to shape themselves for a career in the software industry. I have observed (as many others have) over several years, that many highly intelligent and gifted students do not necessarily have an impeccable (or even a good) academic record. The CSD helped nurture students who were talented, but did not find scope for expression in regular academic work. It provided a safe haven for students who wanted a free, creative and challenging work environment. I think that this made the most impact on at least a section of the student community.

My involvement with the Distance Learning Programs was another satisfying experience. I think that many of the advances being made in BITS in terms of infrastructure, faculty well-being, diversity of programs/courses, and several other things can be traced back to the gains from the distance learning programs in some ways.

In both these involvements, I was fortunate to have had the active support and cooperation of students and my colleagues there (Dr. B R Natarajan, the present Dean and my buddy). More importantly, my involvement was passionate only because Dr. Venkateswaran trusted my abilities, constantly demanded higher performance, and mentored me to be useful in these activities.

What are your future career plans? Any plans of returning to BITS to teach part-time?

Future career plans? I am still grappling with a startup (albeit a modestly profitable one). I have miles to go in this...

I did manage to teach a few courses for the off-campus programs in Bangalore a few years ago. And when my travel schedule became quite hectic, I could not manage this.

Yes, I do miss teaching, and would love to take up any opportunity to teach (time and logistics permitting). In fact, my wife Usha misses teaching and Pilani far more than I do! I do not have any plans moving away from the current role of building Ascendum.

What are the biggest goals for you to achieve in your lifetime?

You are probably going to be disappointed that I do not have any

“inspiring” things to say here. I do have goals, but modest ones. I have some nice ideas on making a difference in the world of eLearning.

What is your advice to BITSians who want to pursue a career in research or academics?

Three words – Passion, Perseverance, Patience ;

BITS & the Rankings. A looming threat to our Top 10 Status ?

In the **India Today 2004** Rankings BITS slipped for a third year in a row, in spite of the new network, the media blitz and all the joint faculty-alumni efforts. For reasons we do not understand, we have been unable to stop the slide. With the entry of two new schools – DCE and Anna University into this year’s rankings, and the likely incumbencies of the 7 IITs, it means that BITS is going to be fighting four excellent non-IIT schools for three spots next year. If the announcement of 5 additional IITs goes through, BITS may cease to be a Top 10 school within the next five years. Does anyone have any ideas or “real” insights into these rankings ? Mail anupendra@bitsaa.org

2004 Overall Rankings		2003	2002	2001	2000
1	IIT Kanpur	2	2	2	4
2	IIT Delhi	6	10	3	3
3	IIT Mumbai	3	4	3	1
4	IIT Chennai	4	5	3	2
5	IIT Roorkee	8	8	11	-
6	IIT Guwahati	7	15	-	-
7	IIT Kharagpur	1	1	1	5
8	BITS Pilani	5	3	3	6
9	Anna University, Chennai	10	9	16	-
10	Delhi College of Engineering	-	-	-	-
-	Institute of Technology, BHU Varanasi	8	8	11	-
-	REC, Tiruchirapally	9	17	-	-



INTERVIEW BY ASHISH GARG

THE QUARTERLY BITSIAN: KANNA RAJAN, ('80) - NASA

A Chemistry/Chemical dual degree holder, Kanna Rajan lead the Software team for the Mars Exploration Project (MER), unarguably the most ambitious and complex mission flown by NASA to date. His work in a niche area of Artificial Intelligence was recognized in appointing him to the position. He believes his days at Pilani prepared him well for his work, especially through the extra curricular activities as CoStAAan and Election Commission Chairman. In this interview he discusses the future of space exploration, India's plans for space and the kachoris at BITS.

Tell us something about the time you spent at BITS Pilani

I joined BITS in 1980. In those days we used to have something called the 'Prep semester'. The Prep semester used to be in June, July and Aug. It was another filter after the Class 12th exam which was used to determine admission status. We had a very intense three months and at the end of it we could get to pick our dual for those who were in the dual-degree program.

In retrospect I found it interesting as it exposed us freshmen/women to Pilani gently. The Prep semester allowed us to come in, figure what we want, adjust to the environment and gave us the Pilani feeling – for instance there are things you do and certain things that you don't as BITSian. The initial shock of joining Pilani was somewhat alleviated, I must say, by a visit inside Meera Bhawan in my fresher's period when I was sent there get ragged!

I started off in Vyas which had terrible food, but it sort of improved when after I went to Malviya. Malviya was the feared Bhawan in those days because seniors who were 5 years ahead of us were busy engaging in forbidden substances. It was a different experience in the

company of some very interesting people.

In retrospect those years in Pilani were the best years of our lives. My wife continues to be amazed at how I've managed to keep my Pilani alliances alive even after all these years.

When did you come to the US and how and why did you choose to work for NASA and when?

I came to US in Aug 1986 after graduating from Pilani. I joined the University of Oklahoma at Norman for 6 months. My academic advisor sent me to the Fermi National Lab for 8 months, after which I decided to join University of Texas at Arlington (UTA).

After graduating from UTA in 1990, I worked for two years with the Artificial Intelligence group at American Airlines in nearby Ft. Worth. I left to join the Courant Institute at NYU because I wanted to work with Ernie Davis in the area of knowledge representation.

When I was at NYU, I realized that a lot of what I was doing was very theoretical. I was keen to use all this theory to solve real-world problems, which eventually led me to NASA.

Joining NASA was a serendipitous turn of events. I was looking for a

job at that time. AI Magazine had a posting for a position at NASA Ames. At that time Ames was primarily a theoretical AI outfit, but was ramping up to do some spectacular applications based on years of work in the theoretical domain. I was hooked.

The funny thing about the interview itself was it was in a café in downtown Mountain View since I'd forgotten to get my green card (which I had already at that time) to get into the base.

When I joined, NASANASA researchers working on AI were mainly theorists. Fortunately the year I joined, 1995, was an interesting one because NASA agreed to fly an AI based control system on-board a spacecraft for the first time.

The agency asked us to prove it to them that we were capable of the job of controlling a complex spacecraft by developing a prototype. I was hired to work on that project. This phase was highly successful. This system was called the Remote Agent and it still remains the only one of its kind at NASA! From an AI perspective that was good work and its flight on DS1 a significant achievement.

Credit: NASA

What is your typical day like at NASA?

NASA is a big institution with many different divisions. My group does applied research in autonomy and robotics. Its very academic; I liken it to walking into grad school. The group's charter is to essentially build the next generation of control systems for spacecraft.

Now that I lead this effort, there is a lot of administrative work to do. Apart from that there is quite some traveling to conferences. I ensure that my group at NASA Ames works closely with the NASA Jet Propulsion Laboratory (JPL) at Caltech. A day at NASA for me is fairly chaotic but exciting.



Photo credit: UT Arlington

Name: Kanna Rajan

Position: Leader, Scheduling & Planning, Mars Rover Exploration Project, NASA

Former jobs: AI Group, American Airlines; Fermi National Laboratory

Education: NYU, UT Arlington, BITS Pilani

Tell us more about the Rover project?

At any given time, the rover is doing multiple things and there are some serious energy constraints. The rover runs on solar power so we need to make sure we do not drain the battery, or we don't bump into a rock! We have limited resources,

limited time and also some scientific intent behind everything that the rover does. These constraints mentioned above, could be "you cannot take a picture while you are moving because of power issues in addition to the fact that one might get blurry pictures". Also we do not want an overloading of the CPU, which runs only at 25Mhz! So in a sense there is this tension between the scientist's wanting to do as much as possible and the operations engineers want to do as little to keep the rover safe.

Our group is responsible for the MAPGEN system. For MER time and energy are critical elements. The most crucial is battery, which is a non-linear resource. If we plan too many activities for the rover to execute, we might be draining the battery; if we plan too less then we might overcharge and top it wasting the capabilities of a rover that could have been doing a lot of science. The MAPGEN software essentially produces a sequence of activities, and then schedules these activities for the Rover.

Is there anything you learnt at Pilani that has prepared you for what you do today?

I think so. My hypothesis (which may or may not be correct) is that Pilani actually prepares you for life better than most academic institutes in India.

One of the main things I learnt at Pilani was the art of dealing with people. Academically I was always engaged but I was also very active in extra-curricular activities. I was a CoStAAn for the Department of Controls for the second APOGEE on campus. I was also the Election Commission chairman in my 3rd year. I had strong relations with people of my batch even as I was close to a batch junior.

Do you remember any funny incidents from BITS days.

One funny incident happened during my 3rd year in Vyas. On the Vyas Bhawan Cultural day I had imbibed a little too much and then kicked somebody's door open. This guy was from a rival camp in an

upcoming election. Next morning, G.P. Deshpande who was the chief warden (and also Mr. Tough-Guy) called me and first thing he asked me was my GPA. Incidentally my GPA was high and he told me, "With such high GPA why are you fooling around like this?"

When we were there, BITS was a wild place. My BITS life is full of such memories and in terms of bonding with friends, it was a phenomenal experience.

Any other people of Indian origin working on the MER project?

Not that I am aware of.

Did you ever get a chance to meet Kalpana Chawla?

No.

George Bush has announced ambitious plans involving Mars. Do you believe man (or at least the US) will colonize Mars in your lifetime?

We will get there someday for sure. We currently have the technology needed to get to Mars from a research perspective. What we don't have is a viable prototype of a system to get someone to Mars and get him back. I think within 40 to 50 years it's definitely possibility I believe that this requires more political will than anything else.

Companies are applying for licenses to take man to the edge of the atmosphere. Is this something that will become commonplace in our lifetime?

Absolutely! It will happen within the next 10 years, maybe 5. There are organizations like www.xprize.org who are trying to promote sub orbital flights with prizes of up to \$10 million. I am sure that within 5-6 years we will have a commercial, non-governmental sub orbital flight.

India is planning to spend billions on their space ambitions, yet millions remain poor and starving. How can we justify investments in our space programs when the most basic needs remain unmet?

There is a long(er) term view that one has to think of, when answering such questions. Science in general always has the tendency to generate unintended (and very often beneficial) spin-offs and inventions. The personal computer (PC) as we know it today owes a lot to the work IBM did for the Apollo for example. IBM kept getting pushed to building smaller and smaller computers, which finally led to the advent of the PC. That in turn, had a very significant impact on the US economy. There is no reason to believe why spare research will not lead to similar scientific advances in India.

However, India has to be clever enough to have a roadmap (and to articulate that roadmap) for doing space science indigenously that has a clear cut benefit to the young in Indian society (rich or poor). This in turn would spawn new industries, generate employment. Space exploration easily inspires children, so we will not lack for talent to enter the field.

India's success to date has been in launch vehicles and in putting



spacecraft into orbit. What we don't know is the quality of data they get back from these spacecraft.

India recently announced that it would fly to the moon. What do you think about that idea?

I am not sure about is the point of the mission to moon. If it is a political or a prestige issue then I don't think it's worth it. But if there is some scientific basis that can push science in India then we should go for it.

There will definitely be benefits of space research. But if people in India think that we can fly to the moon today and expect benefits tomorrow, then that scenario obviously is prone to failure. The Indian Government needs to very clearly articulate its goals in going to the moon in the short term and space exploration in general.

While you fulfill the dreams of man, you must have some of your own. What would you like to do in your lifetime?

In the long term, I want to get to a point where I can help people in the Artificial Intelligence community to push the state of the art (and practice) something I am very passionate about. Our community has some very sharp people, who are at the cutting edge, but the problem is that they are somewhat disconnected with real world problems. They are working on deep problems in theory and they want to get into the practical world to solve real problems. This has been a very difficult thing to do. NASA is one of the very few places where you can make this transition between the theoretic and practical worlds.

Eventually I guess I would retire to the hills of India and have a nice house ?. I am 40 and I think I have at least 10 years more of contribution in me. After that I might just become a brainless manager which maybe I already am.

Any advice for other BITSians who want to enter the realm of Space Exploration. What talents

are needed? What is the career path like?

There is no specific recipe to getting into Space Exploration. My advice would be to stick with what you like. Since Pilani, for instance, I have stuck to a very narrow field of research namely planning and scheduling, and it's paid off for me. This may or may not pay off for someone else. But as long as you have the integrity to say that this is "what I am going to do because I enjoy it" I think things would work out. The most important thing is to like what you do as a career; not have to do it because of other reasons.

You really need to home in onto something and follow it. One doesn't need to be an Einstein, but one does need to focus. So going back to your question, if you want to do deep space exploration then you aim to go to JPL Caltech. If you want to do earth sciences related work, you go to NASA Goddard in Maryland. Biology is very big within NASA Ames (and most people don't realize it)! So if you want to work on AI, biology or general space science research then you come to Ames.

Lastly, tell me something about your family. Do you intend to take them to Pilani?

My wife and I have a 3-year old kid. I just got back from Madras where I was visiting my father recently.

I really want to go to Pilani sometime. The problem is that we go in winter and BITS is closed for winter vacations during the time.

During our times, there was this guy Vishwanathji, who used to sell really good kachoris near the swimming pool. And I still remember the samosas and shikanji's at Blue Moon, the best I've ever had. So I'd really like to go back at the very least for the shikanjis and the kachoris, not to mention if I can help BITS in any shape or form. And get my wife and kid to experience what I've been raving about all these years !

INTERVIEW BY VIJAYA GANESH (BITS ME STUDENT)

THE QUARTERLY BITSIAN: PROF. GP AVASTHI, FORMER HEAD OF DEPARTMENT OF ECONOMICS

An era ends at BITS as a legendary professor takes his last class in Pilani. Known for his fiery, passionate and entertaining classroom sessions, on a wide range of subjects from macroeconomics to student smoking, he has been revered by many generations of BITSIANs. His famous quotes and dialogues were more popular than those of Ajit. He has inspired students to forsake a career in Engineering for a more rewarding pursuit of Economics. Many students went on to teach at some of the world's greatest Economics departments including Chicago, Harvard, London School of Economics and Princeton. In this last interview while still at BITS, he talks about economics, offers fatherly advice on student responsibility and mentions his plans for the future. On behalf of a thousand BITSIAN students whose lives you touched, and whose minds you helped shape, we thank you !

Prof GP Avasthi studied Sciences and Mathematics like many of his peers and when he was unable to secure admission into an engineering college he took up the Arts instead. At first almost all fields of study in the Arts disenchanted him. Economics was the notable exception since as he found the subject extremely analytical as its fundamentals were rooted in mathematics. Prof M A M Muralidharan of the PUSA institute also influenced his preference for Economics.

After completing his MA in Economics in 1964, he went on to pursue doctoral studies in the same field and started his teaching career in 1967 as a Junior Lecturer at Rajasthan University, Jaipur. In 1971 he received an invitation to join the faculty at BITS, which he accepted. It would turn out to be an intellectual shift too as he fondly recalls the enthusiastic reception by the students to his Mathematical approach to Economics.

On his career... In addition to his academic responsibilities he was also a part of the Planning and Development Cell and working closely with Prof C R Mitra, he co led the development of a broad based education system in BITS. Practice School and the 5 Year Integrated programs, critical elements of the BITS education

system today, are a consequence of their recommendations.

When asked about his views on teaching as a career path he shares that he has found the past 30 years extremely fulfilling and has derived a great deal of intellectual satisfaction by virtue of having taught and learnt a broad range of courses in Economics.

His mentors and mentees... His favorite economists include his own doctoral advisor Dr. Raja J Chelliah who was, at the time, the Economic advisor to former Indian Finance minister Manmohan Singh. Harvard University's Prof M V Mathur has also had a profound impact on him. As for his students, they are in various Multi National Corporations and Business Schools across the globe. He fondly remembers Adanki, who was a Professor at the Harvard Business School prior to joining Nera Consulting, and Shantanu Dutta, a former World Bank Economist who later joined the University of Chicago as an Associate Professor and currently teaches at the Marshall School of Business at the University of Southern California.

On BITS... Prof Avasthi believes that while the normalization based admission process is best suited for BITS, as the institute should not relinquish control of its admission process, there is a need to review and

evaluate the current admission procedure for potential improvements.

A message for his students and alums... He expressed his concern about the lack of discipline among today's students, warned them against complacency and stated that the increasing academic freedom permitted by the system has to be complemented by a greater sense of responsibility on the students' part. In his message to the BITSian alumni community he reiterated the need for hard work and concentrated efforts in their respective fields.

Looking Ahead... Subsequent to retirement he'd like to spend more time with his family and retain his ties with BITS as well.

The Quarterly BITSian

This segment replaces Person of the Month. It is an honor given by Sandpaper 2.0 for achievements made by BITSians in fields as diverse as social causes, politics, business, research, entertainment and academics. Past profiles include:

Vinod Agarwal (2003), Chairman & Founder of Logicvision, most successful tech IPO (2000)

Dilip D'Souza (2003), Author of two books and champion of social causes in India

Aditi Pany (2003), First woman President of BITS Pilani Student Union

If you know of someone who deserves to be nominated, please send a short note to anupendra@bitsaa.org letting us know why this person should be nominated.

BY NIDHI CHAUDHARY (NYC/NJ) AND PRASAD THAMMINENI ('86B4A7) ASHA BOSTON/ MIT

BITS AND ASHA: PARTNERING TO FOSTER SOCIO-ECONOMIC CHANGE

India's most global social organization was started by an IITian and finds supporters in major cities and universities around the world. Asha has captured the imagination of many and changed the lives of many Indians. BITS and BITSAINS have been involved with Asha for many years, even having worked on a joint project with Yale University. This article discusses what Asha is doing at BITS

While BITS students spent many years in Pilani, few are aware of a place called Jherli. Jherli is one of the most underdeveloped Gram Panchayats in the Jhunjhunu district of Rajasthan. It is comprised of three villages - Jherli, Raila and Garinda – with a total population of more than 5,000 people. The villagers make a living through farming, daily-wage labor, and by running small businesses. But, like many of the small villages in

BITS must take responsibility to help improve the educational opportunities available for children in surrounding villages,” says Dr. Motilal Dash, a Professor at BITS. Dr. Dash is the current lead on the Gyanganga project, an effort to help improve the quality of primary and secondary education in the district.

While most villagers recognize the importance of educating their children, the dearth of proper school buildings and the scarcity of

environment is also visible among the village. Villagers are not only aware about general health care, but also about the hazards of eating pan masala, drinking alcohol, malnutrition, and chewing tobacco, etc.

Although the Gyanganga project was conceived in 2001, it only became a reality when initial support was received from Asha for Education, a non-profit organization dedicated to catalyzing socio-economic change in India through education. Dr. Dash exclaims, “We are so pleased to partner with an organization, such as Asha for Education, to support our efforts to create quality learning experiences for all children in the district.” He continues, “With their assistance, we have been able to create and sustain a very successful project that will help improve the lives’ of these villagers, but also our community as a whole.” A cooperative spirit is being developed between rural and urban, between educated and illiterate, and between privileged and underprivileged – opposite spectrums of society are learning from each other and cultivating change.



Rajasthan and throughout India, unemployment, illiteracy, and poverty are rampant. There is an inherent lack of accessibility to basic facilities, such as clean water and consistent electricity, and a significant need for a stronger infrastructure.

BITS Pilani, however, is taking action to help the neighboring residents. “We recognize that as a major entity in this community,

teachers are not conducive to learning. But, through the work of the Gyanganga project, Dr. Dash and fellow BITSians are working to make changes in the community. There is now an increased awareness about the importance of a quality education for both boys and girls alike. The number of children attending school is higher and there is a lower dropout rate. The impact of health care education on cleanliness, general hygiene and the

Intrinsic in its mission, Asha strongly believes that education opens a doorway to creating socio-economic change for the long-term. Asha continues to support the Gyanganga project because of its commitment to developing income generation programs to help villagers find alternate means for wages and creating power and water resource management schemes. The project is not only providing education for over 400 children in the villages, but is also seeking to improve the way of life for the over

5,000 inhabitants of the Gram Panchayat.



Asha for Education has been an innovative supporter of projects throughout India, like the Gyanganga project in Pilani, for the past 13 years. Created by three students at U.C. Berkeley, with a passion for engendering socio-economic change in India, the organization has amassed a group of people, from all over the world, seeking to foster idealism and egalitarianism. It has become a magnet for students, young professionals, and those who simply want a chance to contribute to the betterment of the world.

Asha allows as much anonymity, or lack thereof, that anyone might desire. It allows a person with passion, vision, and a small idea to create a plan, gather supporters, and take action. Comprised only of hundreds of volunteers, Asha has been self-sustaining, efficient, and successful in raising over \$5 million in the past several years, and supporting over 400 projects all over India. It is a zero-overhead organization, which allows the organization to send 100% of donations directly to project partners. But Asha is not just a source of funds, it is a partner with those grass-roots organizations who are doing the daily work to make a change in their communities

and in their country. Asha creates a relationship, built on trust, friendship, and shared ideals, with project partners. Volunteers must physically visit a project site before funding will ensue, and thereafter, a steward will regularly communicate with local directors and leads to provide support, advice, most importantly, act as humble cheerleader of the incredible work they are doing everyday.

The efforts of Asha for Education can only continue to be sustained if those people with a desire to create change, in very small or even unimaginable ways, commit their passion, energy, and time. Life is constantly bringing us new challenges and obstacles, but if one has just a moment, take that moment to recognize what all of us can give back to a culture and heritage that has contributed to the foundation of our values and ideals. With no time at all, one can make a donation to Asha and be assured that every single penny will be sent

create a means to interact with people who share the same passion and who will challenge you further to dream bigger and brighter! Perhaps most meaningful, your contribution to Asha will allow you to reach out to those whom your efforts are directly affecting.

The spirit of Asha lives in its volunteers, its donors, and supporters. It is intangible, perhaps even difficult to express in words, but it arises from an inherent wish to ensure that every child receives a quality education and thus provided with the foundation to succeed. Even more so, however, the spirit of Asha lives in people like Dr. Motilal Dash and the BITS students and alumni who are taking action to help their community.

To become involved in the Asha for Education movement or to make a donation to further its efforts, please visit www.ashanet.org, or send an email to coordinator@ashanet.org.



to build a school, feed a child during school-hours, or add one more teacher to a threadbare staff. Asha chapters throughout the world provide yet another opportunity to become involved, with not only the mission of the organization, but also

To learn more about the work of Dr. Dash and his colleagues at BITS Pilani, please email him at dash@bits-pilani.ac.in. Together, we choose to make a difference in the world. †

BY PUSHKALA VENKATRAMAN

A CONVERSATION WITH PADMA SHRI AWARDEE, DR. BALASUBRAMANIAN ('57 MSc CHEMISTRY)

Meet Padma Shri Dr. Balasubramanian – A 65 year old energetic, zestful, ambitious and a highly successful individual who loves and lives life to its fullest. Anyone who has a conversation with him is sure to feel energized, totally positive and raring to go. I did! A molecular biologist by profession, Dr Balasubramanian specializes in finding cures for blindness of the eye. He is working hard on various programs that seek to eradicate common causes of blindness amongst the poor in India. Apart from this, he has immense interest for various forms of music including Carnatic classical, Hindustani classical and Western classical. He plays billiards, tennis and bridge with avid enthusiasm. His pet activity is to teach students and share their budding love for the subject. The number of accolades and awards that have been showered upon him from various corners of the world is no mean achievement and through all this his wife Shakti has been with him quietly encouraging him to achieve all that he set out to do.



Name: Dr. Balasubramanian

Education: BITS Pilani

Current Position: Director of Research, L. V. Prasad Eye Institute

Prior Positions: Director, Centre for Cellular & Molecular Biology (CCMB), Professor & Dean, University of Hyderabad, Lecturer, Assistant Professor, IIT, Kanpur

Research: Molecular and Cellular Approaches to Understand and Treat Diseases of the Eye. Published 145 research papers and 2 books.

Describe your times at Pilani...

I went to Pilani in June 1953, right after my SSLC from P. S. High School, Madras. I was then 13 years and 8 months. Madras

University would not allow students to enter college before 15 years of age. Fortunately for me, my uncle was Prof. V.

Lakshminarayanan, the then Principal of Birla Engg College, Pilani, and the one who fused the three colleges at Pilani to make BITS in 1963-64 told my father to send me to Pilani for college. So there I landed up one hot morning at Loharu, and then to Vidya Vihar. I joined I. Sc. (Intermediate in Science), and finished it in 1955. After my BSc I went back to Pilani and joined MSc in Chemistry, finished it in 1959- first class first rank!! The degree was of course from Rajasthan University, since BITS was yet to be.

I had some great teachers in Chemistry notably Mr. Raja Rao and Dr Sitaramiah. During the final year of MSc at Pilani, I was all by myself since there was no teacher in Physical Chem. That was good, since I got to be somewhat independent. This also meant that someone was needed to fill in. After graduation, I was taken as a tutor in Chem., which I taught for the year 1959-60. By this time I had already started applying to the US for a PhD degree and was taken in by Columbia University, New York.

Thus I left Pilani in August 1960, to land in The Big Apple. This was the NYC of 1960, with but 100 Indians, no Indian shops, nothing!! Those were some great times. I was in NYC until 1965, then went to U Minnesota for a post doctoral, and came back to India, landing a job in the chemistry dept at IIT Kanpur in February 1967.

For friends there were many, several fellow kids of course, and also the faculty and their families (e.g., TSKV Iyer and co). I took part in debating on behalf of Pilani, and went to the youth festivals in Delhi and Calcutta in 1957-59. I did a lot of swimming at Shiv Ganga (you could do it those days, it was banned later) and played billiards at the faculty club while I was a faculty in 1959-60.

I think my move into a career in chemistry, started thanks to the great teachers in Chemistry that I had in Pilani.

There is still nothing to top Pilani ka Peda. The late Madanji at Connaught Place must be ranked among the world's best confectioners. I get to go to Pilani once or twice a year, as their visiting professor and to give talks at their Apogee- and can't wait to get hold of the Pedas!

Describe a particularly fun moment that brings a smile to your face even to this day...

We had one Mr. Chatterji who taught physics. He had a ultra-heavy Bangla accent. "Bawter" for water, "Phlowz" for flows, "bith" for with, and "belositee" for velocity. Try and say for yourself, in his accent, his statement "water flows with a velocity of...".

What are the highlights of your life? In terms of proud and momentous occasions

Awards: "Padma Shri": National honor by the President of India, 2002

"Chevalier de l'Ordre National de Merite": National honor by the President of France, 2002

Bhatnagar Prize in Chemical Science, India 1981

Ranbaxy, Goyal, Bhasin and FICCI Awards, India

Third World Academy of Science Award in Basic Medical Sciences, 1995

Khwarizmi Award of Iran in Basic Medical Sciences, 1996

UNESCO Kalinga Prize for the Popularization of Science, 1997, Paris, France.

Indian National Science Academy's Indira Gandhi Prize for Science Popularization,

DST/NCSTC National Prize for Science Popularization 2002

I must say that academically IITK where I got my job was my testing ground, and polished me up. The students were often smarter, challenging- and the fellow faculty members were

excellent. It was here that I learnt how true the statement is: "excellence breeds excellence, mediocrity breeds itself". Teaching first year chemistry to the IITK kids has been unforgettable. They teach you how to teach. To this day, teaching is something I really enjoy. To have been voted the best teacher in 1969, and then to have been called by the class of 1972, and again by the class of 1977, at their Silver Jubilee reunion at IITK, and being given the best teacher certificate have been some of my proudest moments.

It was also at IITK that I started learning in real earnest Hindustani singing. We also had group singing- faculty families- who each brought some songs from their region and we'd meet every fortnight and sing together. And then the students would drop by home for a meal and we would discuss ragas. I'd start with film songs, tell them what raga they are based on, and take off from there. These were magical and beautiful moments. These are not exactly moments that you'd call 'proud' or 'momentous' - but of such pure joy! I miss them now. Two years ago, when I got a national award, the guy sitting next to me, also for the award, was Narayana Murthy of INFOSYS. I introduced myself to him, and he says: 'Sir, I know you well; I used to come to your home at IITK to listen to music. You have forgotten'.

Another momentous occasion was meeting my wife -to-be, Shakti. Her sister Dhruvi is married to Prof MM Chaudhri, who was across my house at IITK. As a bachelor, I used to hang around their place, playing with the kids, listening to music, gorging on their food. And Dhruvi's younger sister Shakti drops by from Baroda for a holiday. It was love

at second sight! She had come earlier in 1969, but we did not pay much attention (she says she didn't and I say I didn't) then. This time, it was momentous!

Working at the Centre for Cellular & Molecular Biology (CCMB) was another great experience. Here too, the graduate students were superb, chosen carefully from a large lot. Teaching them and learning from them was fun. By this time, as you would have gathered, my research interests moved completely from physical chemistry into biomedical sciences. It was at this time that Dr G. N. Rao came back from Rochester NY and started his L V Prasad Eye Institute at Hyderabad in 1986-87. He wanted to initiate basic research and since I, at the CCMB, was already looking at proteins of the eye lens, we joined hands. My lab at CCMB became de facto the LVP research lab, and his hospital gave me my medical collaborators and also patient's material. It was thus that in late May 1998 that I decided to quit a nice cushy government job of Director CCMB, and took voluntary retirement to join the LVP full time. Now, this too was a rather remarkable turn in my life, an unusual step. In retrospect, what I did was the best. I am enjoying it, and it is in a sense 'dharma', since LVP is a charitable hospital. I hope to be there until I turn 70, which will be in 2009.

What is the nature of your work in general? I read about it on the internet and saw that you work on finding cures for rare eye diseases. Can you please elaborate on this?

It might come as a surprise to many that 80% of the blindness in the world is needless- it can be cured in 30 minutes or less, or avoidable. Yes, of the 15 odd million in India, who cannot see at all, about 9 million or so are blinded by cataract. A 20 minute operation, removing the diseased lens and inserting a synthetic lens (called

intraocular implant) cures the condition and restores vision. A national effort involving all ophthalmologists across India is called for, as also across the world. This is what is now being done, under the leadership of Dr G. N. Rao, the Founder Director of our Institute, who has since quit directorship to engage himself fully into this.



Would you believe there are close to 3 million Indians who are blind, just because they do not wear glasses/ contact lenses? Criminal! Diagnose their 'power' and give them eyeglasses; in 10 minutes, they can see again. You may wonder why this happens. Most of these people in rural areas do not have access or are scared to want to go to eye doctors. They resign themselves to a fate of blindness. Then there are people who have broken their glasses and do not have replacement. Here we are attempting to do something by using community participation. Imagine educating local people to read eye charts, diagnose the 'power' of the eye, and give glasses to the needy. This vast effort called Village Vision is being attempted with some rural women's group in AP. I think such efforts are truly workable,

as our pilot experiments with 15000 people have shown. Rao is trying to generate about 500-1000 such Vision Guardians, and 50 primary and secondary stage eye hospitals, across the length and breadth of AP. Mr. Naidu, the then CM of AP had pitched in with Rs 26 crores. What a pity he lost the elections! But the project will go on, I hope, regardless of who runs the government.

The third major cause of blindness is infection of the eye. It blinds about 1.5 million Indians. By the time the patient comes to the hospital, it has advanced badly. If basic care is taken about personal hygiene it will be ample. Simple education about this works wonders.

So you see 80% of the blindness does not need research- certainly not rocket research. It needs a systems approach and sociology. This is precisely what the program called "Vision 2020- the Right to Sight" hopes to achieve by the year 2020, when we can hope to give many people 20/20 vision.

Where do I come in, in all this? What about the rest 20% of blindness that is not solved by the above approach? Can we reduce the burden on, say cataract? Can we delay its onset by a few years,

or delay its progression? This way, we give the surgeon lead time, and also benefit health economics. That means we need to understand the causes of cataract, and this is one area I have been working on close to 20 years, even while I was at CCMB. Indeed, this is how Rao and I got together.

I have been looking at the mechanisms of damage caused to the lens molecules by both light and by oxidative stress, and some people think I have done something useful in this area. One major cause of such accumulating damage is oxidation of the cell molecules and organelles. Oxidative stress is caused by light damage (just as sunlight burns the skin, it damages eye material too, ironic for a light capturing organ!), diabetes, and by systemic depletion of protecting molecules with age, bad eating habits or malnutrition. The craze in the US you see about antioxidants is largely correct, since oxidative damage hits you with arthritis and hypertension - and we showed that it is the common factor to cataract and molecular degeneration (where the business part of the retina is also affected).

Well, the Americans and rich Indians can afford to buy and eat antioxidant pills and delay pathology- but what about the rest? It is here that we looked at some of the traditional diet components, traditional medicine and health aids that common Indians use (what you might call grandma remedies). They drink tea, eat a bit of greens daily, and use traditional medicines and tonics on occasions (pregnancy, childbirth, puberty, when weak with illness...). We looked to see if these have natural antioxidants and will administering them delay cataract? Well, we looked at tea (black, green, + milk or no, does not matter), Ayurvedic stuff like ashwagandha, Chinese stuff like ginkgo biloba. We showed that they are all cataracto-static in animal trials.

If we promote greater daily doses of these materials then perhaps we can delay these age-related eye disorders. Some strength for this argument comes if you see why I, at age 65, am just starting to get cataract, while most people less well off than me get it at age 50 or less, and we all have the same genes, by and large. I eat well, at least better and probably use much more antioxidants in my diet.

When someone in the US showed, in 1994-5, that you can heal the wound to the outer surface of the eye (caused by chemical or fire burns) by using human amniotic membrane (HAM-the stuff thrown out after the baby is born), our clinicians at LVP got excited and began wound healing with HAM. But it is only part cure. The necessary corneal transplant that would restore vision has not been obtained yet. A new technique was needed. Then, in 1998 a guy in the US showed that in the limbus, surrounding the cornea, there exist stem cells. They are not embryonic stem cells that Bush hates; they are 'adult' stem cells which will grow into the tissue/organ, and perhaps also other tissues. We jumped at it, harvested these limbal stem cells from the patient (if possible) or next of kin, and grew them (cultured) on HAM, and lo and behold- we got a transparent stitchable corneal outer layer tissue! Today, we are No. 1 in the world, having treated 190 patients with this stem cell technology, the largest human trial of adult stem cell methods anywhere. We have had a 70% success rate, and the patients have restored vision- full or in major part. To me this is great satisfaction.

BUT, I will not take all credit for this. I direct the show. The hard work is done by the cell biologist Geeta and the clinician Sangwan in my 'team'. They do the hard work, and I go around singing their praise. My name is the paper because I fetch some of the money, give an occasional idea, and write parts of the papers.

LV PRASAD EYE INSTITUTE

Founded in 1986, L V Prasad Eye Institute is a non-profit organization that aims to combat eye disease through a comprehensive approach to eye care delivery. Over the past 14 years, the institute has served more than 1.4 million out-patients and performed over 140,000 surgical procedures successfully. LVPEI has established rural eye health centers that provide high-quality eye care at the lowest possible cost, or at no cost. This same model is used in LVPEI's primary center in Hyderabad, Andhra Pradesh, where nearly 50 percent of patients are treated free of cost.

What in your work satisfies you the most?

The fact that I am no longer just a bench scientist, but am attempting to organize something that can be of direct use. The 'high' one gets with a well written scientific paper that is accepted in a good journal has to be felt, not described. It is like when you hit the right note in music, when you win a Bridge hand after having been challenged by the opposition with a 'double', and so forth. It is an individual personal experience. When some application of the idea of this type happens to patients, and they can see again, the feeling is also an

intense 'high' but at the same time humbling.

How important has the BITSian experience been in your life?

There is no question that Pilani turned me from a kid to a man. It taught me to respect other lifestyles and traditions and cultures. It made me Pan-Indian and prepared me for the world. It rekindled my love for music. Hobbies such as tennis, billiards and Bridge came largely from family, since my father and also uncle played tennis etc. Pilani also gave the opportunity. My stay at IITK was another high. You learn so much from students! Nothing pleases me and Shakti more than having a house full of students, even to this day.

Am curious about your role in keeping the Indo-French relations which also led to the award Chevalier de l'Ordre National de Merite by the President of France.

Some of it grew from science, when in the late 1980s I was asked to participate and help initiate a joint Indo-French research program. But more of it grew out through participation in the activities of Alliance Francais Hyderabad (AFH). In the late 1990s, when the Director of AFH was having a miserable time, thanks to some of the other committee members, I stood by him and helped AFH do things at my own risk- such as help them move, help with expenditure, and most of all ensure that it does not get closed (there was a real danger), by directly talking to the Embassy and the Ambassador himself twice or more. Thank God AFH stays and has grown, though to some, I am still persona non grata!!

Your ideals and idols

I think you may now get a feel for the kind of ideals and beliefs that I have in life. Regarding idols, I do not think

I have any. Idolizing someone is an act of unreasoned acceptance, where even major faults/crimes/sins are rationalized and excused. This is not appropriate to me, and so no I have no idols.

But, I have learnt a lot from a few people, and admire them greatly, because they have molded my life. My father is one, who gave up much in his life, as a young widower, and until the last day was supportive of my brother and me. My uncle was another great influence. He taught me to appreciate language and literature- English and Tamil. I realize only now how much he must have taught me, in an informal and non-intrusive way. Then Professor Lakshminarayanan at Pilani. He

was in some manner my role model, and I still admire his ways. And then Dr. G. N. Rao, my colleague at the LV Prasad Eye Inst., who called me over to work with him. He is so focused, so disciplined and straight as an arrow in his goal. He has some of the qualities that I sadly lack.

Most of all, my wife of the last 33 years, Shakti. She has encouraged and directed my life in ways unknown. She has stood by, letting me know I can do it, to aim high, not to give in or give up. She is also a disciplinarian (I am a lazy guy, and she gives me a tongue-lashing, a bit too often in my reckoning!). She is disciplined, organized, caring, fair, willing to try anything, rational and yet accommodating, cultured, stylish and elegant, interested in fine arts-

painting, music, fabrics, you name it. She is a fantastic cook and runs a great home. She has brought up two wonderful kids. What more can I ask for?

What advice do you have for youngsters?

Be prepared for anything and don't be put off by an earlier bad performance. You really do not ever know how much you are capable of. Be honest; treat others as you want them to treat you. As the book "*I learnt all I have to know in kindergarten*" said it, Be clean, don't hit others, do your homework, clean up after you are done...!

Learn to laugh; do not take yourself seriously, then you won't be hurt. Above all, do not advise others- least of all youngsters! ;

Padma Shri



The Padma Shri is awarded to recognize distinguished service to the nation, in any field, including services rendered by government servants. The decoration may be awarded posthumously. It is the fourth highest award, after the Bharat Ratna, Padma Vibhushan and Padma Bhushan.

The Padma Shri was originally established, in January 1954, as the "Tisra Varg" or "Third Class" of a three-class "Padma Vibhushan" award. This medal was originally described as circular bronze medal, 1-3/8 inches in diameter, with an embossed lotus flower in the center with the legend "Padma Vibhusman" above and a floral wreath below. The reverse was to depict the state emblem with the legend "Desh Seva" or "National Service" above and a lotus wreath below. This medal was to be worn from the ribbon described below. This design was altered within a year, and there is no indication that any awards of the Padma Vibhushan, Tisra Varg, in this style ever took place (though some specimens and prototypes were probably produced?). On 8 January 1955, the badge was altered to that described below.

The original (1954) statutes of the decoration provided for bars to represent subsequent awards of the medal; no record of these awards has been located. This provision has been dropped since the 1955 modifications and, in practice, most initial appointments have been to Padma Shri, with subsequent promotions to Padma Bhushan and Padma Vibhushan representing continued national service of an increasingly high order, although direct appointments to higher levels of the award have been rarely noted.

From 13 July 1977 until 26 January 1980, awards of this decoration were suspended.

Neither the Padma Shri nor the Padma Vibhushan and Padma Bhushan are easily rendered into English, so the clumsy rendering of their names into this latter language must be taken as more approximate than usual!

PARTYIN' AROUND THE WORLD

COMING SOON



July 31, 2004 New York: 1st Ever International Wing/Galli/QT Cricket Tournament! Contact **Venu Palaparathi** at venu@bitsaa.org

PREVIOUS EVENTS

May 1, 2004 Los Angeles: BITSAA's Southern California chapter organized a spring networking event this May. Contact **Santosh Gopalan** at san_gop@hotmail.com

May 1, 2004 Pune: BITS Alumni and their families got together for dinner and drinks at the Pune chapter's Spring networking event. Contact **Grp. Capt. Kaushal** on +91 20 2 611 4432

May 1, 2004 Ahmedabad: Ms Pooja Shroff and Mr. Pratul Shroff (ex-BITSian, e-infochips) hosted the second alumni meet the Delhi Public School. Contact **Pravin Bordia** at pbordia1947@yahoo.com

March 7, 2004 Silicon Valley: The annual BITSAA Silicon valley mixer and dinner was held this spring in Palo Alto. The event included musical performances by BITSians, a skit and a BITS documentary. A DJ and dance floor along with the wine and Indian cuisine kept all and sundry entertained. Contact **Chandra Bhople** on pilanireunion@hotmail.com or **Prashant Vishwanathan** at prashant@bitsaa.org

February 23, 2004 Mumbai: The second BITS Alumni Meet was held in Mumbai on February 21. Chief guests for the event were Rajesh Hukku (BITS '79), Chairman and MD of i-flex Solutions, and Ramesh Ramanathan, a key architect social development movements Janaagraha and Sanghamithra! Contact **Sagar Dughrekar** at dughrekar@yahoo.com

February 8, 2004 Hyderabad: Sierra Atlantic and IntelliGroup, IT companies founded by BITS alumni, sponsored this year's Winter Bash while DreamCricket.com sponsored the cricket trophy. Our alumni took this opportunity to dust off their cricket bats, tennis balls and enjoyed a BITSians day out. Contact **Ashok Agarwal** at ashoka@sqlstarintl.com

February 8, 2004 Hyderabad Winter Bash: Sierra Atlantic and IntelliGroup, IT companies founded by BITS alumni, sponsored this year's Winter Bash while DreamCricket.com sponsored the cricket trophy. Our alumni took this opportunity to dust off their cricket bats, tennis balls and enjoyed a BITSians day out. Contact **Ashok Agarwal** at ashoka@sqlstarintl.com

February 1, 2004 New Delhi Picnic Early in the New Year the New Delhi chapter of BITSAA organized a celebratory picnic. The event included Tambola, Cricket, musical chairs, on-the-spot painting for children and, needless to say, food and drinks! Contact **Pradeep Sethi** at corporateinsight@vsnl.com

January 2, 2004 Pune dinner with Vivek Paul Vivek Paul, Vice Chairman of Wipro and CEO of Wipro Technologies joined a group of alumni for dinner during his visit to Pune. Contact **Grp. Capt. Kaushal** on +91 20 2 611 4432 !

GOODBYE DEAR ANUP FROM ALL YOUR FRIENDS

ANUP SINGH SAHNI, '87 Eco EEE, 10 POINTER & BATCH TOPPER PASSES AWAY

ANUP'S FAMILY CAN BE CONTACTED AT: JASLEEN_KAUR@HOTMAIL.COM

A note from Anup's sister, Jasleen.

Anup (March 10, 1970 - Feb 10, 2004) lived a short and beautiful life. Being the son of an army officer, he spent his childhood days in many places—including Delhi, Dehradun, Imphal, Ranchi, Bangalore, Jhansi, and Chandigarh. He completed a dual degree (MSc, Economics and BTech., Electronics) from BIS Pilani in 1992. He joined Citicorp (aka COSL/Polaris/Iflex) after graduation and spent 10 years with the company. This included long projects in the Bahamas, Poland, and London. When he left Citicorp, he was a global manager for a London-based Citibank project and was interacting with teams spread across different continents and vendor firms. He was well-respected for his hard-work, competence, and open attitude.

Anup had a long-cherished dream of pursuing higher studies but couldn't do so earlier due to financial responsibilities. Eventually in 2002-2003, Anup worked hard on applying to graduate school and joined the University of North Carolina for an MS/PhD in Computer Sciences. The fact that he had been away from academics for 10 years was unnerving to him; but his dedication, attitude, and hard-work helped him achieve outstanding grades and stellar research performance just within his first semester.

During the early hours of Feb 10—a month into his second semester—Anup passed away. He died peacefully of as-of-yet unknown, but natural causes. Anup got married in 1997 and is survived by his wife, parents, and sister. He was blessed with a son in 1998 who lived for only 8 hours.

Perhaps the most important aspect of Anup's life was his spirituality. In the last 12 years of his life, Anup spent substantial time reading widely and dwelling on spiritual writings including those related to Sikhism, Gita, Rajneesh, Buddhism, James Allen, and Sufi-ism. His thinking and wisdom adapted over the years to culminate in roughly the following philosophy: EVERYTHING is a blessing; EVERY hard situation deserves to be met with gratitude and a smile. This was the reason that despite facing several heart-rendering hardships on the personal and family front, Anup ALWAYS remained blissful. He would serve everyone to the best of his ability and would respond to even anyone's ill-behavior by wishing and praying for their well-being. Naturally, he earned many friends and easily charmed anyone he met even once with his smile, warmth, and jovial nature. He also took great care of his health through a disciplined diet and exercise (he considered the body to be a gift of the Almighty).

Anup lived a short life—but a beautiful one. In my opinion, the greatest tribute one can pay to Anup is by attempting to adopt some of the above-mentioned values in our lives. May God bless him.



If there was one person I knew who was so full of love, so genuinely warm and kind hearted, that was you. Never an ill feeling towards anyone, never an unkind word. So full of the zest for life. Stoically facing life's battles, big and small, you carried on undaunted, with only a smile as your weapon and an armory full of jokes. You

were truly an inspiration. My friend, you had that rare gift that every life you touched you made happy. It must be God's will that you be finally laid to rest on St Valentine's Day. It is with the greatest agony that I bid you farewell. My heart does not want to let go and my tears haven't stopped flowing yet. You always signed off with a little humor. All I can say is dear friend, you can now look down on us from up there, and I shall as always look up to you. Adieu my friend. Till we meet again -- **Veena Savant (COSL)**

When I saw this email, I thought it was another of Anup's joke. Well, I will repeat what he told me when my Dad expired. "We are all too ignorant to know the complete plan of God almighty". And we have to maintain our faith. Anup was my senior at BITS. He was quite popular over there and then at Citicorp. Religious and very funny. Had great healthy habits. Had a number of admirers who were impressed by the fact that he could maintain a hard working life style along with his religious beliefs. -- **Tajinder Gulati (BITS and COSL)**

I was very happy that he had decided boldly to pursue a PhD and was confident that he would do very well. I consider

myself fortunate to have known Anup and will cherish the memory of my very enjoyable interactions with him. -- **Deepak Das (BITS)**

We always joked with Anup that he did not have a beard - glad to see he had finally managed to grow one. He was the topper of our batch - and did extremely well in academics always. Not just that, he was always willing to help our classmates with their academic questions - many of us owe our degrees to Anup. His dedication to academics, a life dedicated to God, and the pursuit of health was an inspiration to us all. You are indeed missed by all your friends-- **Anupendra Sharma (BITS)**

I remember him as a very warm, energetic and fun loving guy from Pilani days. He was always ready to help anyone in need and made everyone laugh and brought a lot of joy to people around him. - **Sravan Vadlakonda (BITS)**

He will always be remembered for his boundless energy and enthusiasm. He seemed to be running on a different clock than the rest of us and was always ahead of the pack by at least 10 steps. His memory will always stay with me. -- **Vikram Santurkar (BITS)**

He had always been a very kind, jovial and enthusiastic person and always invoked great enthusiasm in others as well. -- **Vinayak Machan (BITS)**

Anup had come to visit us a few days before he left London, and we had a great chat, he played a lot with my son, and my son took to him so much that he insisted that Anup read him a story to sleep. I can remember very vividly how Anup and I were standing outside my son's bedroom while Anup read a story very lovingly. -- **Yogesh Sholapurkar (COSL)**

He was simple and easy to please - willing to try any 'strange' south indian dishes we made - safe in the knowledge that we were staunch vegetarians - and even sit and eat on the breakfast table in the kitchen. Long debates would ensue on the meaning of life and the spirituality. We were no match for his knowledge and well-informed views. He strongly believed and lived his principles at all times and was proud of the family upbringing which had given them to him. He was healthy in mind and body. I don't know many other people who have gone to a bar and consistently had orange juice for a few hours or anyone who was more disciplined about his hours. His interest in further education and imminent trip to the US provided another topic of conversation and constant interaction. He was very kind and helpful--with open hospitality for all friends alike. It was not always easy to persuade him not to bring us idlis from his neighboring restaurant when he came visiting us! -- **Rashmi Rao (COSL)**

He has helped me so much by discussing any problems I might have been facing, ever ready to listen and provide a sympathetic ear and of course advice. -- **Jyotsna Rao (COSL)**

I will always remember Anup fondly as we often discussed the meaning of life, morality and James Allen. He was good, kind and interesting. I still miss our chats and his awful jokes even now. -- **Jenny Sebastian (COSL)**

Professionally and personally, he was quite impressive. His "say so" meant a lot to me and I made a lot of correct decisions based on his advice. I met him just once (I live in New York City) and instantly liked him - it would be hard not too! My managers, who talked to Anup many times a day, were all extremely fond of him and virtually every one stayed in touch with him after he left IFLEX. -- **Karen Segal (COSL)**

Anup was one of those very few people, who could make a lasting impression very quickly. I have always admired his sense of humor, health awareness and respected his profound religious beliefs. He helped me cope up with my mother's loss. I am very

fortunate to have had a friend like Anup. We all will miss him. -- **Prachi Pradhan (COSL)**

I remember him as a very patient and soft-spoken guy. I remember he was always encouraging to his team members and very focused on his work. I found him a very nice individual who I still remember for encouraging me to go to the local gurudwara every Sunday in Malad in Bombay. I always remain indebted to him for that. Even now, when someone in my family tells me I should go to the Gurudwara often, I find myself telling them I used to do that every Sunday when Anup was my boss in COSL. May God bless his soul. I remember him as an exceptionally nice man. -- **Amandeep Kalsi (COSL)**

He was such a lovely, lovely person. Although we both came from different religious backgrounds, I would often turn to him for spiritual advice & guidance & it was always well received by me. -- **Margaret Ginty (COSL)**

For the first time I came across a senior person who felt at ease interacting with a junior guy. I had to step in in his place for a week as coordinator. I didn't have the experience to back me up and at first I relented, I was a bit scared. But it was Anup who instilled confidence in me.

Then one day I felt sick I had very bad cramps and stomach ache. The diarrhoea just didn't stop so I made a call to Anup to tell him that I will not be attending the conference call. He told me to take care and will note down the action points and let me know about it. He also promised to pay me a visit in the noon if time permits. His office was at Riverdale house which was about 15mins walk from my apartment, he was searching for my house number and finally managed to find my house. He gave me a small bottle of homeopathy medicines and I took a couple of those and after a while it became alright. I didn't have any one on my side at that point of time, my family was not there and it was only God who send Anup there. This is one gesture that I will never forget for the rest of my life.

And last night when I told my mother the message after going home, she felt very bad. Because during that day when I was sick in London, he was literally like my mother he got me a medicine, brought a knorr soup cooked it and gave to me. And I told my mom about him after I got better she praised him and told me to convey her thanks for taking care of her son. I don't know why such a good person had to go so suddenly. I'm sure he is at peace, its his memories which will live with his family members and friends. -- **Anand Kalimuthu (COSL)**

He was one of a kind.. so jovial.. so optimistic.. so caring and so very helpful , even to a person who hardly knew him. Even though we could not spend much time together he was a friend I knew who was always only a phone call away. His parting was so peaceful.. just like him.. almost as if god needed him immediately on another big project.. I don't know what to make of his demise.. it just re-instates what he always said.. that we can never fully comprehend what makes things happen.. so just be good.. do good and good will always come unto you.. just like it has.. probably for him. -- **Monika Kapoor (COSL)**

We will always remember him as a cheerful, happy, intelligent and smart person who could always bring smile to your face within minutes of meeting you. -- **Vaibhav Shukla (COSL)**

I will always cherish memories of our friendship, especially a 14 km run that we did from SEEPZ to Lokhandwala in Mumbai. -- **Jobin (COSL)**

I was a member of Anup's group/ team and always found him to be cheerful, helpful, unassuming, and very hardworking. He was easy going, and friendly and everyone had always a good word to say about him. - **Shernaz Kapadia (COSL)**

Anup touched my life and left an indelible impression on it. I have many fond memories of him of our association during our COSL days and after, which I shall treasure throughout my life. He was a great person, a true friend and an inspiration. -- **Veena Savant (COSL)**

My personal experience from having interacted with Anup, was one of renewed faith that there are still good, honest, and kind people in this world. he had a smile that spread quickly across his face and a tender demeanor that immediately put me at ease. The faculty were very impressed with him. -- **Janet Jones (UNC)**

It was a privilege and a joy to have gotten to know Anup, even if only for too short a while, as an advisee, student, and friend. He was truly an inspirational person: as you probably know, I was full of admiration for his enthusiasm, his friendliness, and his cheerful spirit; and have been *so* happy this semester to see how well he has been doing, and fitting in, at UNC. -- **Sanjoy Baruah (UNC)**

BY SURAJ SRINIVASAN & ALL THE BATCH REPRESENTATIVES

SELECTED CLASS NOTES (BY ENTERING YEAR)

For a full listing go to the website

1971

R.K.Kaul 71EO3005 BE(Hons) EEE, Passed out 1976. Was Tennis champion for 3 years at Pilani. Runs a company called DSCL that has been named the best Energy Services Company two years in a row by the Petroleum Conservation and Research association(PCRA). He has given the proposal to BITS Pilani, which could save up to Rs. 1 crore a year RK worked for many years at Shriram Rayons and was heading the Power Plant, Electrical Dept. and Instruments Dept. in addition to charge of International Quality systems . In 2000 he joined another unit of Shriram Group called DSCL Energy Services and is now providing Consultancy services to Industries , Commercial establishments like hotels, hospitals, buildings etc. he can be contacted at rkkaul@dscl.com

1978

Sunil Arora (75-80 Chemical) was promoted to the position of Head of HR for Lifetree Convergence Ltd. in April 2004. Lifetree Convergence is a Software Product and Solutions company in the

areas of Billing and Messaging Its messaging suite runs the largest messaging platform 8888 of India.com and also that of Reliance Infocomm. Lifetree's customers are located in is headquartered in New Delhi and Development center at Bangalore, India besides offices at Hong Kong, Johannesburg and Dubai. He can be contacted at sunil@lifetreeindia.com

1978

Dr Nilay Yagnik. In April 2004 , I have successfully defended my Ph.D. dissertation and I have qualified for the award of the Ph.D. degree in Management Studies from the University of Mumbai through the Narsee Monjee Institute of Management Studies. My Ph.D. work is in the area of Information Technology for Rural India. In February 2004 , I presented a paper "Digital Libraries to Bridge the Digital Divide" at the International Conference on Digital Libraries , inaugurated by the President of India Dr. Kalam at the Vigyan Bhawan , New Delhi. My paper has been published , after a worldwide refereed process Dr.Nilay Yajnik BITS Pilani Class of 83 (78-83) Currently: Associate Professor (Information

Systems), NMIMS Mumbai India
nilayy@nmims.edu

1983

K. Sai Sankar 83A6PS346 was named Director of Operational Analysis of The Dallas Morning News in July 2003. Prior to that he had served in executive positions at American Airlines from January 1995 in Finance and Customer Service, where he was last the Managing Director and Controller of Field Services responsible for the finance function of over 120 airports across the U.S, Canada, Mexico, and Caribbean. Sai served as President of the DFW Chapter of INFORMS, a society for operations research professionals. He published three books and numerous technical papers. As an adjunct faculty member of the School of Management at the University of Texas at Dallas, he taught undergraduate and MBA evening classes in production management and operations research from 1995. In 2002, he was listed in the Who's Who in America for his contributions as an educator and airline executive. Sai graduated from St. Joseph's Junior College, India in 1983 with an Intermediate certificate in Science. He attended the Birla Institute of Technology and Science at Pilani, India where he received a Masters degree in Management in 1987 and a Masters degree in

Engineering in 1988. In 1992, he received a Masters degree in Industrial Engineering from the University of Louisville, Kentucky. Two years later, he was awarded a Doctorate from

the same university for his work in the development and application of operations research techniques to solve business problems. Sai and his wife, Raji Kolli, have two children: Vivek and Divya. He can be reached at ykolli@comcast.net

1986

Chandna Sethi completed her MSc Tech Science & Technology from BITS. After BITS, she spent 2 yrs at ICIM India, 2 yrs at SPJIMR in Mumbai for an MBA, and then 3 years at Titan Industries. In 1997, she moved to Hong Kong and since 1999 I she have been living in the south of France. She does occasional freelance business consulting but mainly she is a full-time mother. Email her at chandna_sethi@hotmail.com

1989

Raghavendra Chinhalli (89A3PS116) Much to my chagrin I was known at BITS (1989-93) as Eli. Currently, I am a Technical Analyst with an insurance brokerage firm in mid-town Manhattan. I have been in the US since 1996 working chiefly in the data warehousing and business intelligence realm. I have been happily married to Charumathi,

an Managing Assistant Director (Internal Audit) at Kean University, since June 2000.

Anirban Deb. After working many years programming internet applications, I quit and decided to follow my dream of learning computer graphics. I wanted to learn this since I saw the Titanic. I am still a photographer-but now my computer is my camera. I have completed my MS from George Washington University in DC. My only other hobbies these days are Salsa dancing and all things Hispanic. Recently moved to India and currently with Oracle in Bangalore

Anand Thyagarajan (89C5PS779) After Pilani, off to NJ to study economics. Dropped out and worked for a finance company in NYC. Then back to Mumbai for a couple of years before doing an MBA in London. Currently work for a bank in London. Email anand_tan@yahoo.com and my ph number, including country code, is 0044-7771-685-487

S. Padmanabhan I am currently working as an Assistant Professor of Mathematics at Texas Tech University (<http://www.math.ttu.edu/~padhu>). I greatly enjoy teaching and doing research. I work in the area numerical analysis and computational biomechanics. My research is funded by the

National Science Foundation. I got married in January 1998. My wife, Revathy is also employed at Texas Tech University as a server administrator. We have a two-year old daughter, Pradyuta who constantly keeps us on our toes.

Spent years in the UK due to Anand's **Vidhya Raman** vidhya@mahindrabt.com, **89B2A1542**. I joined ICIM, Pune after BITS and married Anand in '95. Spent around job while I was contracting with BT and NTL. Have two lovely boys, Srivatsan & Saketan who are now 5 and 4 respectively. Back in Pune now - Anand is with IDEA cellular and me contracting part-time with MBT. While I'm not busy with the family, I

Vikrant Kobla vkobla@hotmail.com Graduated with a PhD in CS in Mar 2000. From that time onwards, been a director for a start-up company in the Washington, DC area developing next generation digital video analysis systems. Doing well for now, and are growing. Married with 1 son, Vishal, and another baby in the assembly line ready to roll out in June.

Laxminarayan "Lux" Chakrapani (89B2A1...) After 4 years on campus, and PS-2 assignments in American Express and Neyveli Lignite Corp, worked for Thermax and a small company called Megavisa until 1998 in Marketing and Business Development. 1998-2000 was spent getting an MBA

AlliedSignal) in various locations, in Business Development and I.T. Current role involves project management and financial planning & controls for the I.T function. Married to Jayanthi and have a 10 month old son, Vivek. Live in northern New Jersey. Contact email: narenchakrapani@yahoo.com

1995

Manik Pullagurta (95A5) recently completed his PhD from VCU and joined UGA for Post Doc Research. He has received the Lowenthal award in 2003 for excellence in the research of genetically based neurological diseases, the J.D. Smith Award in 2004 for being the Outstanding Graduate Student of Medicinal Chemistry



love gardening. Newly acquired hobby: B.A. in astrology (ongoing).

from the Univ. of Maryland (College Park). Been working for Honeywell since 1999 (then

and the Deans award in 2004 for excellence in graduate study, research and service ! .