

BY ASHISH GARG ('97 INSTRU)

THE QUARTERLY BITSIAN PROF. AUTAR KISHEN KAW

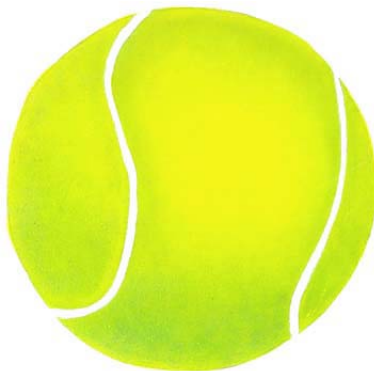
Carnegie Foundation for the Advancement of Teaching and the Council for Advancement and Support of Education names one distinguished professor from each of the 50 states. They recently bestowed this honor on our own alumnus, Dr Autar Kishen Kaw ('76 Mech), Professor at the University of South Florida.

Please tell us a little something about your time at BITS Pilani

I joined BITS in 1976. Having never gone out of my state (J&K), it was quite a change for me. However, about twenty of my batch mates from high school and pre-college were there which certainly made the transition a lot smoother. I loved the Pilani experience as I learnt to be independent and also achieved my initial goal of becoming an Engineer.

I ran away to Delhi the first two Saturdays I was in Pilani, where my mother was visiting her brother, however, both times she sent me back and I am glad to this day that she did else who knows how things would have turned out. Even showing her the big thick calculus book by Thomas did not change her mind!

I eventually went on to graduate with a BE (Hons.) in Mechanical Engineering in '81.



We'd love to hear about what you enjoyed doing at Pilani.

Any special, particularly memorable moments?

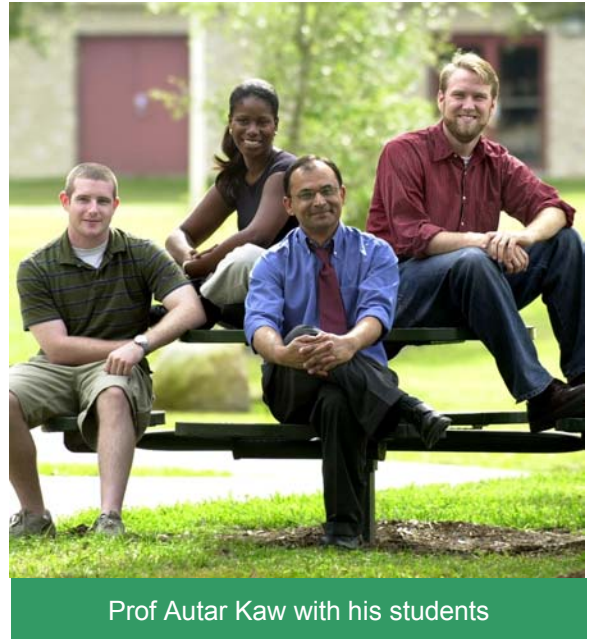
I loved to play BITS-style cricket with a tennis ball and our study chair. It was fun to participate in the tournaments. I also participated in cultural activities like Bhawans nights and in my fourth year was the Cul Sec of Ashok Bhawan.

The courses I liked were the math courses. In fact, the staple course I like to teach at University of South Florida is Numerical Methods for Engineers. If someone were to ask me to pick a course I liked, it would be Optimization Technology as I enjoyed its applications.

What are the three best memories of your time at Pilani?

Most of my memories of Pilani are linked to OASIS. I was always impressed by the organizational skills of BITSians. I enjoyed the concerts of Hemant Kumar, Shiv Kumar and Ravi Shankar.

I also remember the farewell dinner for the seniors of Mechanical Engineering. It was touching to see people's eyes moisten as they left but a sparkle



Prof Autar Kaw with his students

at having taking their first step – to make the transition to the US or join India's corporate world. It was one of the few occasions when faculty and students mingled freely without any kind of formality or reference to rank.

Another memory that is close to my heart is the bicycling trip (I forget the place, it has a power station) about 50 miles away. About ten of us went on this trip and our bonds of friendship grew stronger than ever. To be able to rough it out outside the comfort of our hostel rooms was the learning experience of a lifetime, not to say that, on occasion, living in hostels rooms wasn't roughing it out!

Tell us a little about the transition you made from India to the US? What surprised you? What did you like the most and what did you like the least?



With the family at their home in Florida

Please tell us a bit about your research. What attracted your intellectual interest?

Over the last twenty-three years, I have conducted research in the fracture mechanics of composite materials,

bridge design, and educational research. I have always been interested in applied mathematics. The research in fracture mechanics of composite materials was interesting, as at that time not much was known about how composite materials behave. It also involved two of my favorite subjects – advanced mathematics and scientific programming.

Advice he was given when he came to the US

“I was cautioned that just because a girl smiles at you doesn’t imply that she’s in love with you.”



The research in bridge design happened just by chance when a colleague of mine and I were asked by the Florida Department of Transportation to look at failure during the assembly of the fulcrum of bascule bridges in

Florida. In contrast to my earlier research that was basic, this one had immediate application. Also, it involved analytical, numerical and experimental components, and hence made it a complete study.

More recently, I have developed a holistic website for a course in Numerical Methods. This resource has been quite successful where the website has more than 5000 unique visitors per month.

Have you written or planned any books?

I have written one book on “Mechanics of Composite Materials”. It was published in 1997 and the second edition is due to be published in 2005. I have co-authored a book on Fundamentals of Engineering Examination, and also an E-book on Introduction to Matrix Algebra.

The CASE award is predicated on "extraordinary dedication to undergraduate teaching" and we understand that you have been exemplary in the integration of technology and real world problems into the teaching process. Please tell us more about this.

This award has mainly recognized the effort in developing the web-based resources for an undergraduate course in Numerical Methods. For several years, I have incorporated technology as a complementary tool in the classroom, and when the National Science Foundation (NSF) agreed to fund this effort in 2002, we were able to expedite the execution. I have found that students get highly motivated when they see real-life applications in their courses.

Therefore, we use real-life examples to show the need to learn numerical methods. We also encompass several majors of engineering so that students get exposed to majors other than their own. With new technologies being interdisciplinary, this is a unique

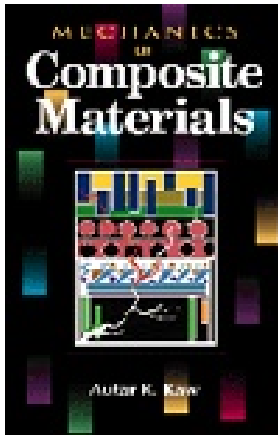
I’ve loved neon lights since childhood. To see so many neon lights at night just made my day. Everything [in the US] had a functional system which was refreshing. You did not get shoved from one department to another when you tried to get things done. Getting used to the food here took quite some time.

My mother asked me for just for two promises – do not eat beef and do not marry an American. I ate beef, by mistake, right when I boarded the PanAm Airline in Delhi. I did not know non-veg meant beef, and I’m sure we hadn’t left Indian airspace yet. As for the second promise, it took four years to break that.

I did not dislike much about US. I did experience a little homesickness being cash strapped and the racist remarks in the Dixie land of South Carolina. Also, I did not like being dependent on others for car-rides.

What surprised me was that people smiled at you all the time. I was cautioned that just because a girl smiles at you doesn’t imply that she is in love with you.

opportunity to introduce them to a wide variety of applications.



Have you ever worked with students from BITS, Pilani? What are your impressions of them in terms of research skills or intellectual abilities? How do you think we are distinguishing ourselves? What do we need to be doing better?

I have worked directly with only one student from Pilani, and he was bright, as expected. We worked on characterizing composite materials for a project that was funded by the Air Force Office of Scientific Research. Although a far cry from his training, he now manages the Enterprise Solutions for Wipro for the East Coast of USA.

The research and intellectual ability of BITS students is extraordinary. The holistic education we receive [at Pilani] and the core courses that all students take pays off in the long run. It allows us to acclimatize to new technologies rapidly without having to formally re-educate ourselves.

The only thing I can think of doing better is that the laboratory experience needs to be modern and emphasized more. Hands on projects are

necessary to develop good engineering skills.

What do you think are the biggest challenges facing BITS today?

Being accessible to the children of the lower middle class. BITS, in my opinion, has become very inaccessible to meritorious students who cannot afford the high fees and living costs. I would not have been able to go to BITS if it was not for the low cost education in 1976.

What can BITSians do better/start doing to compete with the world's best?

Hire the best professors who are given the opportunity to conduct research at the national level. Make an effort to admit a diverse student body.

What role do you see the alumni playing in making BITS a world-class institution?

BITS alumni have already shown that they come from a world-class institution. I would like to see more of the academic alumni going back for a sabbatical and sharing their educational and research experience with their peers and students.

On making BITS, Pilani, globally competitive

“Hire the best professors who are given the opportunity to conduct research at the national level. Make an effort to admit a diverse student body.”

Have you been back to Pilani since? How was the visit personally and professionally?

No, I have not been back to Pilani but would love to do so one day.

Every one of my friends who has visited Pilani has found their visit to be an emotional and nostalgic experience.

What do you read to stay in touch with technology, business and other fields that interest you?

I read several magazines such as the Time, Reader's Digest, Popular Science, and the Smithsonian. I am a Fellow of the American Society of Mechanical Engineers and a member of the American Society of Engineering Education. I read several technical journals regularly in the field of composites, engineering mechanics, and computers in education.

What are your hobbies, interests etc.?

In my younger days, I played quite a bit of racquetball and cricket. However, with one's knees not cooperating now sometimes, I like outdoor biking. I love reading nonfiction (it keeps me away from the fiction; that is the only digital divide I have with my wife) and going to the movies. I also like to socialize with my friends. I occasionally write articles for newspapers.

What career/personal advice would you give the student community?

Do what you love, not what comes easy to you. I could be very good at counting money at the bank but that would be boring. Many a times, people will say that you are good in science and math, so go become an engineer. That is a wrong piece of advice anyone can give you. I have instilled this in my own students and also my two daughters. One of them is planning to be a journalist while the other wants to design large stages, a far cry from engineering. I am glad that they get their genes as well as their looks from their mother.

