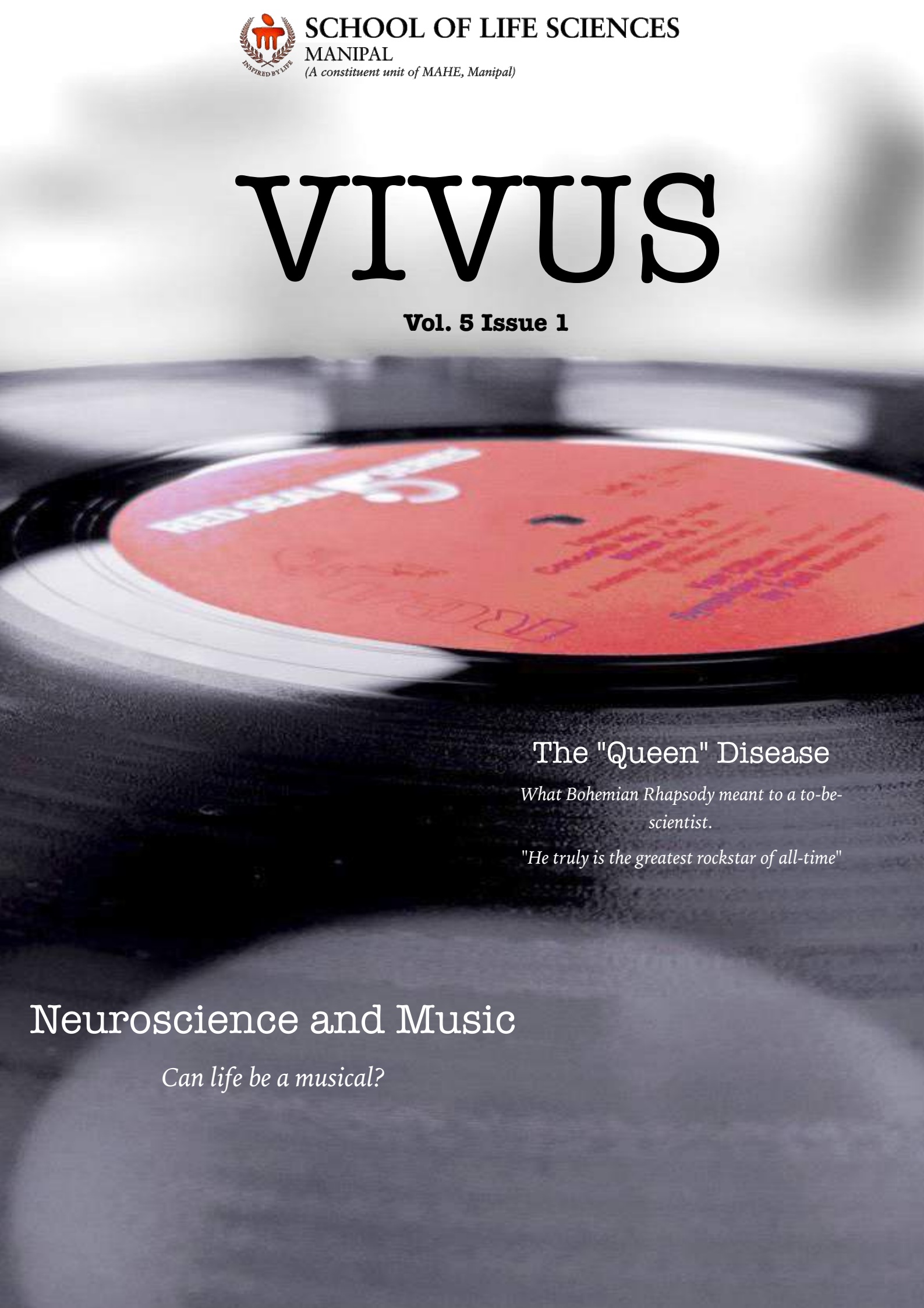
SCHOOL OF LIFE SCIENCES
MANIPAL
(A constituent unit of MAHE, Manipal)

VIVUS

Vol. 5 Issue 1



The "Queen" Disease

What Bohemian Rhapsody meant to a to-be-scientist.

"He truly is the greatest rockstar of all-time"

Neuroscience and Music

Can life be a musical?

Dear Readers,

Before everything, we wish you all a prosperous, healthy and a truly happy New Year. As the clock chimed in the New Year, it was indeed time for a new volume of Vivus.

It is routinely said that school/college magazines are one way to showcase the students' talents. Although we don't disagree, we realized why Vivus might be a little more significant than that. SOLS being a small but intimate institution, it is essential for the student body to stay connected. Vivus can boast to be a product of the involvement of every part of SOLS - the B.Sc. and M.Sc. batches, research scholars and even the faculty. It connects us all; where there usually is a trough between the UG and PG classes and an even deeper trench between them and the research scholars, Vivus is a bridge.

If you want to know what SOLS has been up to in the last few months, look up the Events section. While you reminisce over the memories, read some food for thought and learn something new in Science. Check out Interviews for words-worth-a-million from people who have already made their mark. Then move on to the Creative Corner to see the world a little differently.

What's new you ask? For all you people who love to explore, check out our travelogue, 'Wanderlust'. This issue features Kumara Parvatha, known to be one of the hardest peaks to scale in the Western Ghats. Tired of all the science? We understand. Check out the diary of a struggling comic trying to deal with college life, you might just relate!

Vivus would not exist if not for the collaborative effort of a multitude of people. We extend our deepest gratitude to **Dr. Satyamoorthy** for his support and **Dr. Vidhu Sankar Babu**, **Dr. T.G. Vasudevan** and **Dr. Saadi Abdul Vahab**, our faculty advisors for their kind advice and review. We also thank the Student Council and other fellow committee heads for their contributions. A great big shoutout to all who have taken the time and work to represent us at interviews and to every single person who has written something for this issue. Finally, but by no means the last, to all our friends who have offered their inputs and shared our excitement, thank you!

Proudly presenting Vivus 5.1,

Mayukha Bathini, Swetha Stanley and Nicole Mary Swer
Editorial Board 2018-'19
School of Life Sciences
MAHE, Manipal

Dear Editors,

Where do we draw the line of morality?

Being new this year to the campus at School of Life Sciences, I was quite scared and nervous about the atmosphere, wondering if I would fit in or not, whether I would make friends and if I would be able to adjust into this new scenario. There was a lot going on and it was all so puzzling for me. That's when I learnt about Vivus, the newsletter that frankly helped to ease the confusion in my mind. How, you may wonder? Well the 'Know Your Labs' section was the most fun to read. Not only did I learn more about the faculty and the research going on, it also saved me the embarrassment of not being able to put a face to the name. The articles submitted along with the podcasts and updates of the previous events in the college served as an aid for me to understand or follow along the lines of how the college worked with a much helpful foresight of the events to come.

This now brings me to discuss an article that I would like to bring some attention to, given the nature of our college and the fact that we are a research based institute. As of 26th November 2018, according to BBC News, a Chinese scientist by the name of He Jiankui claimed that he had successfully made the world's first genetically edited babies. Though his claim is unverified, it sparks a lot of controversy on many grounds. With the Second International Summit on Human Genome Editing ironically happening in Hong Kong, the question posed to many if not all researchers in our field is about **where we stand on the idea of genetically modifying ourselves**. Where does one draw the ethical and moral line in this field and in this issue and if allowed for the pros on helping eradicate genetic diseases, can this very well eliminate natural selection or result in catastrophic selfish gain through designer babies?

Even though his whereabouts as per recent updates are unknown, he claimed that he eliminated the gene CCR5 to make the twin girls (Lulu and Nana) resistant to HIV only and not with the intention of designer babies in mind.

I would like to ask you discuss this topic widely, stressing on where we as researchers should stand, when we have scientific solutions at hand, but at the cost of morals and ethics. It would be nice to know people's thoughts or spark conversation along these lines.

Looking forward to more from Vivus.

Sincerely,
Miss Princess

Dear Miss Princess,

The question raised is something we as life scientists are sure to have considered. Biological research, especially in Genetics is bound to have ethical implications. On one hand, it might reduce HIV infection in babies. On the other, are we playing with life?

In fact, there was an article published in Vivus 4.4 (pg. 5), titled '***The Implications of Genetic and Epigenetic Research***' which covers a similar issue. Find the issue here.

To the rest of our readers, **make sure you let us know what you think**!

Where do we draw the line in Genetic Engineering, and how? Till where can we go before we lose ourselves?

Tell us on this form.

Or **scan the QR** on the back cover to find Vivus 4.4 and the forms on the website!

What's ahead?

What's up SOLS ???

Fresher's Day

Fresher's day and anxiety go hand in hand. Every college freshman dreads and looks forward to this day. When the words, 'fresher's day' pops up, immediately thoughts like "run!", "hide!", "party!!", and "free food!!!", enter the students' minds. The last few brain cells that exist are thrown into chaos and confusion. The same was to be said of the fresher's day (2018) at SOLS. Students would soon come to know that the college had a creative tradition of role-playing for fresher's day. To make it fair, since the students are all about being true followers of equality, the freshmen were made to pick 'lots', each piece of paper, containing a character that they were supposed to come dressed up as on the 'fated day'. There were a few groans and hair pulling since it all came down to luck, and lady luck obviously thought little of college freshmen. Characters ranged from cartoon characters like Popeye to politicians, horror characters and superheroes and not to mention even the Queen of England. The main motivation, of course, for showing up to fresher's day, was so that the students could witness the others embarrassing themselves. (Humanity only gets better as the years go by)

The first and second years posing for a last picture after a thrilling day.

"It is only under a mask that one shows their true self". This statement rang true as many introverted students busted out moves and even the shy ones were seen screaming their lungs out to some song or the other. Boys came dressed up as women, girls came dressed up as gangsters, and there was even a *Drosophila* fly somewhere. Of course, this was the main event but not the only one. After the role playing, there was a karaoke session where everyone was allowed to stand in front of a screen and sing to Olympus beyond. There was also dancing (no event is complete without dancing), and then there was an energy-packed performance by the seniors, who were the "masterminds" behind fresher's day. Let's not forget the free food which was a driving force for the students. The day ended with the crowning of Mr. and Ms. Fresher. Hansa of Khichdi (Sanai) and Charlie Chaplin (Priyanka Goyal) respectively, received the honors.

The days leading up to fresher's day were nerve-wracking, but in the end, we do not remember days, we remember moments.

- Nicole Mary Swer
B.Sc. Biotechnology, first year

Stressed? Wait in line.

At some point in life, every person has felt stressed and exhausted. Every second person is confused about life and where it is taking them. Stress is like a weed growing where it is least needed and wanted. The only way to handle it is to figure out the problem and to cut it off at the roots.

The first year B.Sc. Biotechnology students of School of Life Sciences, MAHE, attended a lecture organized by the college. The guest lecturer was Dr. P. V. Bhandary, a psychiatrist at A.V. Baliga Memorial Hospital, Udupi.

Dr. P V Bhandary dealt with topics that caused the most stress including:

- Stress due to studies
- Inability to adjust to a new environment
- Peer pressure
- Drugs and drug addiction
- Time management and
- Infatuation

He mainly focused on how these problems arose and talked about how to deal with them if and when they do, and 'stressed' on the importance of communication and the importance of confiding in someone. He also urged the students to not cave in to peer pressure and the importance of saying "no".

He regaled the students with stories from his college days. He talked about problems that he had faced during college and how he had dealt with it. He also focused on the issue of time management and the importance of maintaining a schedule and managing one's time accordingly. He talked about how crucial it is to have personal time to just relax, watch a movie, play a sport or just hang out with friends.

All in all, the lecture ended on a good note with the session being a humorous and fun-filled interactive one and the students loving every single moment of it.

- Nicole Mary Swer
B.Sc. Biotechnology, First year

Teacher's Day

To commemorate the birthday of Dr. Sarvepalli Radhakrishnan, the second President of India, is celebrated as Teacher's Day, the students of School of Life Sciences had a special day planned on September 5, 2018. The Student Council in association with the committee heads and fellow students, had created hand-made greeting cards for every single professor in the college and to their joy, the act was met with a lot of appreciation and love from the teachers. After the classes got over,

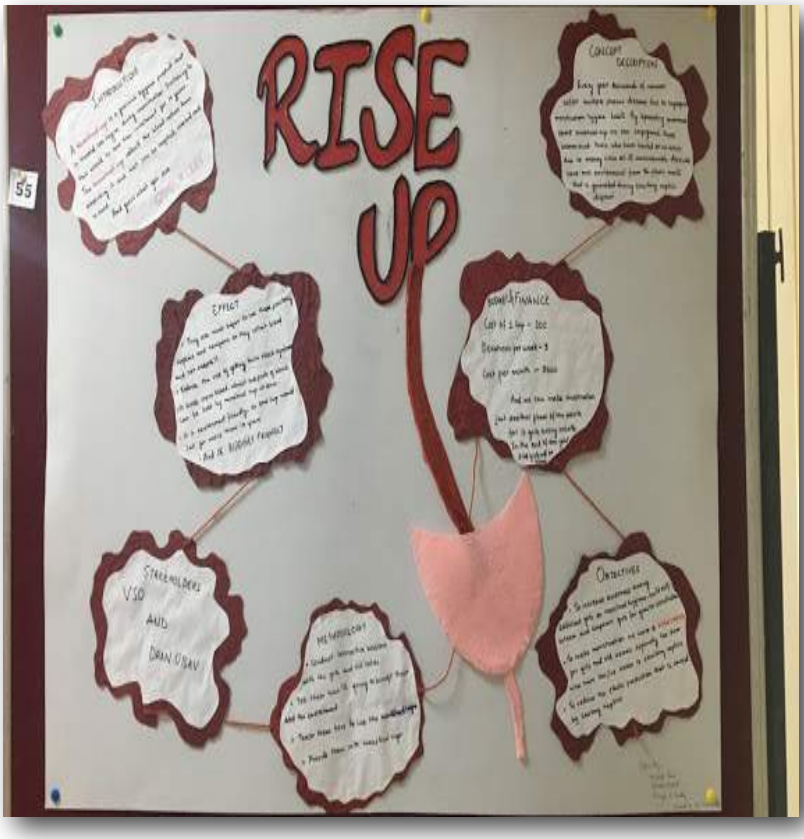
the Council and committees organized a cake cutting ceremony for all the teachers which was then followed by a brief but heartfelt speech from the teachers thanking the students.

On account of examinations of first year B.Sc. students, the cultural aspect of Teachers' day was held on the evening of September 10, 2018. All the teachers had assembled in the basement and the students, staff and research scholars watched the event from different levels of the building. The finance and cultural committee had organized food and beverages for the teachers and performers. The performances involved Retro, Garba, Semi-classical and Bharatanatyam dance by B.Sc. (III year) and M.Sc. (I year), an acapella musical performance by B.Sc. (I year), solo and duet musical and dance performances, and a unique fast/spill art performance by Sourav Patege (B.Sc. III year). The literary and drama clubs collaborated to showcase a skit on the lives of students from different generations. The décor and lighting was handled by The Art Collective of our college.

The students of School of Life Sciences would like to offer a token of appreciation and gratitude to Dr. K.K Mahato, Dr. Vidhu Sankar Babu, Dr. Padmalatha Rai and Dr. K. Satyamoorthy who helped organize this event. Special thanks to Mr. Narayan and Mr. Subhash for helping us with the set-up and management.

- Kanaya Bhattacharya
B.Sc. Biotechnology, third year

Much like the spores of *Penicillium* travelling through the air, the Winds of Change blew across Manipal on August 25-26, 2018, infecting students and staff with a spirit for social development. The second National Conference on Youth for Social Change was organised by VSO and MAHE, and comprised of two days devoted to discussions on youth-led social activism, opportunities for students in NGOs, and the creation and promotion of ideas for social change.



A poster for the conference

The National Conference on Youth for Social Change - 2018

The conference was inaugurated by the chief guest, Dr. H.S. Ballal, Pro-Chancellor, MAHE and the guest of honour, Dr. H. Vinod Bhat, Vice Chancellor, MAHE, followed by an opening panel discussion. Moderated by Venkat Krishnan, cofounder, Eklavya school, Ahmedabad, the panellists included Kannika Sinha, Director, Outreach, ComMutiny - The Youth Collective, Madhu Veeraraghavan from TAPMI and Vivek Sharma, Program Director, Gandhi Fellowships. The first day concluded with a cultural program, featuring a performance by the NGO - Stage for Change, founded and presided over by our very

Bhargavi Karna, Syeda Inaas, Shreya Tapasvi (III year, B.Sc. Biotechnology) standing with a poster during the conference.

own cultural head, third year B.Sc. student, Kanaya Bhattacharya!

The second day began with talks from: Vinayak Lohani, founder of Paravaar Kuldeep Dantewadi, CEO of Reap Benefit; Dr. Prahalathan Karunakaran, co-founder of Bhumi; Vivek Sharma, programme director of Gandhi Fellowship; Kanika Sinha, Director-Outreach of Community; Venkat Krishnan, founder of GiveIndia and Educational Initiatives; Prof. Madhu Veeraraghavan, TAPMI Director (on the non-graded subject introduced to Management students, which mandates social work) and 'Teach for India' IAS officer, Prashant Nair, (speaking about the role of youth in recent Kerala flood relief efforts). After lunch, the judging of a whopping 64 posters began. The posters, created by the attendees, presented either ideas for new projects for social change, or an overview of the impact of previously conducted projects.

Poster by Humaira Shah and team

This provided a great platform for students and NGOs to interact and organise future collaborations. Simultaneously, an interactive session on Daan Utsav, the festival of giving, was held to discuss and compare the plans of the different colleges.

The conference concluded with a valedictory function where the winning posters were awarded. Of the 6 posters created by SOLS, we are proud to announce that the poster presented by Humaira Shah (III year B.Sc.) and team (I year B.Sc.) was declared “best poster” in the poster competition. With participants from 15 states and 53 colleges in India, it is safe to say that the National Conference was a roaring success.

"The poster presented by Humaira Shah (third year B.Sc.) and team (first year B.Sc.) was declared “best poster” in the poster competition."

- Archica and Talitha
B.Sc. Biotechnology, third year

Daan Utsav'18

"experience the joy of giving"

Daan Utsav, a volunteer-driven initiative started in 2009, encourages people to do any act of giving of their choice, across the country. The idea is to get everyone to participate and experience the joy of giving.

Daan Utsav is a great platform that brings together people from all walks of life and encourages them to celebrate "Giving", time, money, material, skill or just love.

The Volunteer Services Organization (VSO) unit along with the Social Committee of School of Life Sciences organized a week long program to celebrate the joy of giving.

The week kick-started with **'Beat the heat'** which was held on October 3, 2018 . The volunteers served the laborers at the construction site, Tiger Circle and MMMC with chilled buttermilk, that helped them rehydrate. This act of kindness was met with a lot of smiles and tearful eyes. **'Alankrit'** the second event, was conducted on October 5, 2018. A group of volunteers with creative thoughts and enthusiasm painted the walls of the Academy school. The third event, **'Rangeen'** was held on October 6, 2018, to decorate the pediatric ward of Kasturba Hospital, Manipal with colorful charts and pictures. The efforts left the hospital walls a little less dreary. **'Teach for Each'** was the fourth initiative that was held on October 6, 2018 in collaboration with MAHE OSA student chapter. The initiative intended to share our knowledge with the school children. The final events of the week were the **'Baccha party'** and **'Rags to Bags'**, which were held on October 7, 2018. 'Baccha party' was a fun-filled day for the children of the staff of SOLS. The sessions were packed with games, art and even Zumba for the kids. 'Rags to Bags' was a VSO initiative that intended to reduce the use of plastic bags by reusing old tee-shirts as bags. The bags were given to the house-keeping staff in the university hostels. The week-long program left a lasting imprint of the 'joy of giving' on all the volunteers.

- Swetha Stanley, M.Sc. MBT, first year

Teach for Each

Beat the Heat

Alankrit

GANDHI JAYANTI

As part of the 150th birth anniversary of Mahatma Gandhi, a special talk was held at School of Life Sciences. On October 9, 2018, Dr. Arvind Kumar from the Department of Geopolitics and International Relations, Manipal gave a talk on "Gandhian Philosophy and Contemporary World Security Environment".

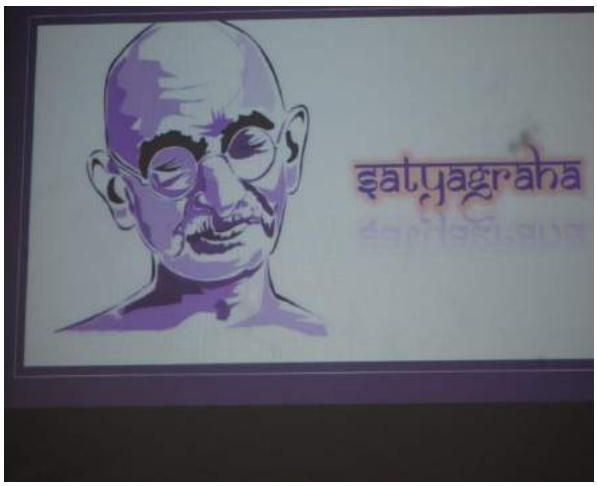
Dr. Arvind is a renowned expert whose areas of expertise include nuclear, strategic, defense and foreign policy issues, Asia - Pacific security issues, American society and civil rights movements and strategic technologies, more particularly surveillance and monitoring, technologies for intelligence gathering, ballistic missiles, deterrence theory and matters related to international security.

The talk highlighted the relevance of Mahatma Gandhi's philosophies in modern times. These philosophies, particularly that of Ahimsa or non-violence is important for the present day scenario, both within India and globally. At the same time these ideas, that are so necessary right now are being somewhat neglected and must be revisited and incorporated into our lives.

In order to gain an understanding of the relevance of Gandhian philosophies for the present day, it is important to learn the origin of these ideas and to have an understanding of the man that was Gandhi. The talk highlighted the early childhood of Gandhi and the influence his mother had on him while growing up as well as the influence of his peers later on. Gandhi lived in a state of conflict, both within and without. The societal rules that governed his life, the British rule and child marriage all impacted Gandhi in the way of building resilience and shaping the man he was to become.

Dr. Arvind then explained how Gandhi's own desire to study, learn and comprehend the world led him to study in the United Kingdom and then work as an attorney in South Africa.

Gandhi's law practice helped build his skills as an orator and as a leader. His beliefs in the Vedas and their principles helped shape his thoughts towards what would later be known as the Gandhian philosophy. The experiences he had abroad and the situation in India at the time evoked a desire to change the situation and Gandhi began taking steps to promote the cause of Indians first by writing and publishing articles and then by taking an active role as a leader.



The key point, Dr. Arvind Kumar explained, was that Gandhian philosophy originated entirely from a time of conflict and Gandhi found a way to resolve conflict, not by escalating the situation through more conflict but through non-violent resistance. Such a philosophy is ever so relevant in these times of terrorism, insurgency and nuclear threats. The key to reducing terrorism would be non-violent resistance rather than active military retaliation.

In order to promote global peace and make way for nuclear disarmament, Dr. Arvind believes that India as a peace-loving country should incorporate and promote the ideals of its founding father, Mahatma Gandhi.

The talk was followed by a rendition of Mahatma Gandhi's favorite bhajan, "*Vaishnov Jana To*" in Kannada.

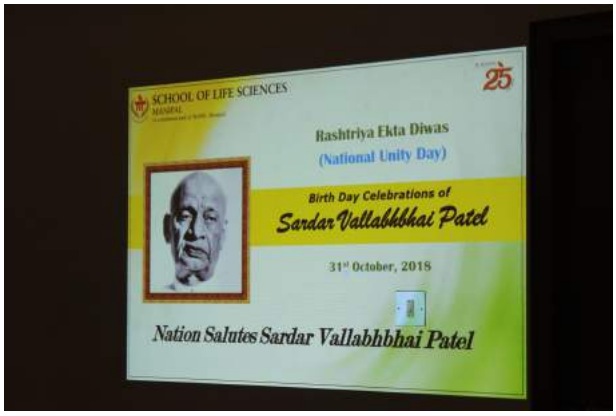
In the evening, a "Swachh Bharat" cleanliness drive was held where students of SOLS, collected garbage from the vicinity of the campus as part of an effort to keep India clean. The students were divided into three groups that went out to different locations around the School of Life Science buildings where they carried out the cleanup drive.

The key note address delivered by Dr. Arvind Kumar

- Swetha Stanley, M.Sc. MBT, first year

RASHTRIYA EKTA DIVAS

On October 31, 2018, School of Life Sciences, MAHE, celebrated Ekta Diwas, also known as National Unity Day in the memory of Sardar Vallabhai Patel's birth anniversary. A quiz, a Walk for Unity and a talk were held to commemorate the day.



The quiz was based on various facts related to India and the participants ranged from first year B.Sc. students to research scholars and even teachers. The questions ranged from simple general knowledge to being able to name various award-winning artists, business figures of the country and political personalities. Creative team names like "Team Quizards" and "Team TT" adorned the scoreboard. There was a decent amount of participation from the audience too, who answered questions that the participating teams could not and at times even answered them without being asked. After the first round only the top four scoring teams proceeded to the second round from which, the second year B.Sc students, Pranav and Abhimanyu emerged as the winners.

Dr. Prabhu delivering his talk

The quiz was followed by a Walk for Unity in lieu of raising awareness against corruption in India. About 70 students, faculty and research scholars from the college participated in the walk. Banners bearing slogans that emphasized Unity in Diversity were carried by the students along the route.

The pledge for Unity

The talk was given by Dr. KP Nandan Prabhu, Associate Professor, School of Management, MAHE, Manipal on the principles by which India stands united as a nation. It was attended by all the students, faculty members and research scholars and the Chief Guest was the esteemed Prof. MS Valiathan, National Research Professor, SOLS, MAHE, Dr. Prabhu spoke about Sardar Vallabhai Patel's vision of united India and how we need to remember an individual's contributions in terms of the life lessons they teach us. We need to draw teachings from their life's legacy rather than remember the timeline of events in their life, he said.

A walkathon organized by the School of Life Sciences, MAHE, Manipal

Students of SOLS participating in the walkathon with complete enthusiasm.

The walkathon creating an impact on the onlookers.

Dr. Prabhu spoke about the factors by which a country can be unified – language (like the European nation Germany), religion (like Pakistan) or a common majority caste. None of these, form the ground to unify India since India is the land of hundreds of spoken languages, many practiced different religions while even the majority, Hinduism, isn't even monolithic. This leads us to "Desha", "Rajya", and "Rashtra", three concepts to form a nation. "Desha" refers to one geographical entity, "Rajya" to a political integration while "Rashtra" was based on cultural integration. India, which cannot be united based on territorial, political or linguistic nationalism, is a "rashtra", built on the common ideas from the way of life taught by our ancestors, unified by integrating civilizational nationalism that it had been already engaged in. Our ancestors conceptualized "dharma", "artha", "kama" and "moksha", as the four pillars of the way life should be lived. The aim of the individual was to gain internal freedom. Our leaders then, therefore attempted to tune the aims of the individual with the national goals to create unity. One example of this idea is how improving the GDP is not the only main goal of the nation. Dr. Prabhu thus concluded by saying that we should aim to remember Sardar Vallabhai Patel by his ability to unify the provinces into one India. He also finally added that unity does not imply uniformity and thus we must celebrate our diversity, stressing on 'unity among diversity' will uphold our unity

After Dr. Prabhu's speech, a second year B.Sc. student, Aadhya Setya spoke a few words on unity, along some poetry to deliver her message of unity is strength loud and clear. Before those speeches a BiSEP student, Ms. Sri Lakshmi took to the dais and grabbed the attention of the audience with a patriotic song.

With all the events, the attendees left united as proud citizens of a nation like India, which never fails to find unity and integrity while doing all it can to preserve its diversity in all aspects of society.

- Mayukha Bathini,
B.Sc. Biotechnology, second year

HALLOWEEN

Face painting

Holla! Halloween!

'Halloween' is one of the most "unnerving" events of the year which has been celebrated since ancient times by the Celts as 'Samhain' a time when the Lord of the death returns to earth. Since the Celts depended totally on the volatile natural world they believed that the presence of these spirits made it easier for the priest to make future predictions, which were a source of comfort. To relive this event, SOLS celebrated 'Halloween night ' on October 26, 2018. As the student council unveiled its box of surprises such as the House of Horror, Photo booth, Fluorescent bubble booth, all the students participated with great zeal. The night witnessed the creative minds of students dressed in their best scary outfits while refreshments like the 'Truth serum' added a tinge of magic to the atmosphere. A gaming area was also set up in the basement which featured 'Limbo', 'Never have I ever' and 'Juice pong' for a bit of adventure and fun.

The Scary Cat or the Cute Cat?

Some of the Haunted House inhabitants

The night ended with the screening of the movies - "The Shining" and "The Wreck". The horror movies were the apt ending to an exciting eerie night

- Pallavi Kundu,
M.Sc. MBT, first year

VIGILANCE AWARENESS WEEK

Corruption could be one of the biggest tragedies of mankind for the simple reason that it is ongoing and extremely difficult to combat, forcing the poor into ever more hopeless conditions, while the select few in power get ever richer and more powerful. Bribes prevent chosen criminals from ever having to take responsibility for what they have done, politicians employ all of their cronies as soon as they get into office, police officers cooperate with drug dealers, and anyone who dares object is either blackmailed into silence or "mysteriously" disappears. As of 2017, some of the most corrupted countries in the world are Syria, South Sudan, Yemen and Afghanistan.

As part of the Vigilance Awareness Week mandated by the Government of India, School of Life Sciences, MAHE, Manipal, organized a Walkathon from the campus to Syndicate circle on October 31, 2018. Students from different classes along with the faculty members displayed their concern and joined the walk in full enthusiasm. On November 3, 2018, SOLS organized a debate, targeting the issue, 'Corruption: is the government doing enough?'.

The Debate team

A walkathon organized by the School of Life Sciences, MAHE, Manipal.

The session saw the various opinions and thoughts of different individuals surface on how a better nation can be built. The pros and cons of major government initiatives like Demonetization and e-platforms were debated and the teams came up with many points on what the citizens need to do to combat corruption. Students, research scholars and faculty members actively took part in the debate, making it a success. Considering all the opinions put forth, the proposition team was declared the winner. The session concluded on the note that we are the representation of the government and we must be the change we want to see.

- Swetha Stanley, M.Sc. MBT, first year

SPORTS WEEK

The Sports Week commenced on October 22, 2018. The week-long programs saw various sports activities such as Basketball, Throw ball, Volleyball and Cricket.

The first sports event was Basketball, played between M.Sc. second year, B.Sc. second and first year students at Sharada court beside Sharada girls' hostel. Each team consisted of three members (3 vs. 3). The teams played against each other with all the matches ending in nail-biting finishes. All the teams displayed equally good defense, with extraordinary jump-shots. Some players experienced injuries as well, but were undeterred by them and continued to play fiercely. First place was bagged by the B.Sc. first year students who competed against B.Sc. second year in the finals.

On October 23 and 24, Volleyball event was held at KMC Volleyball Court complex beside Sharada girls' hostel. From first year B.Sc. students to PhD scholars and staff, a total of five teams took part in intra-college Volleyball. Fixtures were organized for all teams at different levels. Every match played was better than the last. Although the students gave a tough fight, they were no match for the skills and co-ordination honed by the scholars and staff. The speed and acceleration that the players used to pass on the ball was worth the watch. The finals were played on October 24 between the PhD scholars and the staff, with the staff emerging as the champions.

Throw ball competition was held on October 24 at KMC Volleyball Court complex beside Sharada girls' hostel. Four teams competed, in what was an all girls' sports event. Staff, M.Sc. second year, B.Sc. third year and B.Sc. first year students competed against each other. Finals were played between the M.Sc. second year and the B.Sc. third year students. A thrilling battle resulted in M.Sc. second year students emerging as the winners.

The Throw ball match

The Basketball match

The last and final event held was a six-a-side Cricket organised on November 2 and 3 at Sharada basketball court beside Sharada girls' hostel. This was fairly a larger event which included music and refreshments for the players. There were a total of ten teams playing the sport and the teams were divided into two groups, each playing matches against every other team in their respective groups. All the students, right from graduation, post-graduation, PhD scholars and staff competed in this event.

The expert commentary by the scholars and staff, made the game all the more interesting. The spectators enjoyed their favourite music playing, as they cheered their classmates and staff during the game. The semi-finals was played between BiSEP scholars and B.Sc. first year students on one side and PhD scholars-1 and staff on the other side, which was won by BiSEP scholars and staff respectively, who played the finals against each other. The finals was an interesting match as both teams put their best foot forward, but the staff team took home the trophy.

The SOLS teachers' team after their victory in the volleyball match

We thank the Director, the faculty (especially Sandeep sir, for coordinating) and staff, and the council for all the support and guidance.

The Sports Committee would also like to thank the spectators who came to enjoy the game and cheer their friends who participated, without whom, the event would not be successful. This enthusiasm is appreciated and the Committee is grateful to the audience.

We are also looking forward to organizing the next Sports Week in the upcoming semester and would appreciate the same spirit from SOLS!

- The Sports Committee, SOLS, MAHE

Get Scientified!

THE "QUEEN" DISEASE

You might be wondering what I am referring to as the "Queen" disease. Well, it is no news to us and we are all familiar with it, HIV-AIDS. Acquired Immunodeficiency Syndrome is a syndrome caused by Human Immunodeficiency Virus (HIV), which alters the immune system, and makes people more vulnerable to infections. AIDS has been around for a long time now and we all know how dangerous and fatal it is. The virus is found throughout all the tissues of the body but is transmitted through the body fluids of an infected person. HIV is a retrovirus that infects the vital organs and cells of the immune system. The virus progresses in the absence of antiretroviral therapy (ART), which is a drug therapy that slows down the virus from developing. It can be transmitted during sexual intercourse, perinatally or through blood transfusion. Once the HIV has entered the body there is no guarantee as to what will be the outcome of it. It begins with general symptoms such as cold, fever, weakness, etc., but leads to fatal diseases if not identified at early stages. As of now there is no cure for AIDS.

That was a pretty long introduction about something we all know being biology majors. Anyway, the fact that AIDS does not have a cure is changing slowly and it has been found that there can be a cure for it after all.

Recently, I watched the trailer for the movie "Bohemian Rhapsody" depicting the life of the legendary musician, Freddie Mercury and his band, "Queen" (get the connection to the title yet?). I have always been a huge fan of his music and though I may not have been alive during his reign or his death, his music certainly stuck with me. He truly is the greatest rockstar of all time. His death was one of the saddest days in music history and though a lot could not have

been done during that era, I wonder what would have happened if he was alive now.

Think about the music he would bless us with now. His life journey would be an inspiration for anyone and for most of us he is a legend gone too soon. He died due to bronchial pneumonia, a complication of AIDS. He was found HIV positive in 1987 and it was a secret until the day he died. Even a celebrity like him may not have felt comfortable to share the news of his illness in light of its reputation in society. But why is AIDS being degraded even now and why are people being so ridiculously disgusted about the disease despite all the awareness?

But this isn't some tribute to Queen by a music critic. This is a strictly scientific post written by a science student trying to understand the adversities of certain things just like all of you. As I watched the trailer, I decided to read about AIDS and where it stands in the scientific world today. I was amazed to find that recently in South Africa, scientists and doctors have discovered a ten-year old boy, born with HIV, but without showing any signs of the disease despite not being treated for eight years

now. Also, he is the third isolated child in remission. The first was a French teenager who was also born with HIV and has had her infection under control since she was six. The second was a Mississippi girl whose infection was suppressed for 27 months until it reappeared again. Hence, maybe, a 'cure' could be possible for this life-threatening disease.

HIV patients generally have to keep taking ART drugs for life to slow down the virus from developing into AIDS. However, this child was clinically asymptomatic. The child was part of a clinical trial in which researchers were investigating the effect of treating HIV-positive infants in the first few weeks of their birth and then discontinuing later to check whether their HIV was being under control. According to experts, this has been the first case of a sustained virological control from a randomized trial of ART interruption following early treatments as infants.

With 37 million people infected with AIDS worldwide, this child's case strengthens the hope of curing HIV-infected children and spare them the encumbrance of lifelong therapy and the health consequences of the effected immune system. This also poses a huge impact on the group of people who cannot afford the lifelong therapy and drugs. Being aspiring scientists let us show a little interest towards this lethal disease (other than cancer) and see if we can finally discover a cure for AIDS and save the life of millions like we intend to do be the rockstars of the scientific world.

Do we need to diversify our research subjects? Are we too captured with any one issue alone?

Make sure you make yourself heard on our opinion board.

Or **scan the QR** on the back cover to find the form on the website!

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- Shravya Hegde, M.Sc. MBT, second year

NEUROSCIENCE AND MUSIC

Can our life be a musical? Can our daily speech and language dance hand in hand with a rhythm, a beat or have a harmonic essence to it? Can such a transformation occur, when music holds power to evoke us so strongly? How is it that music influences us and does it share any neurological pathway with language?

All the societies that have ever existed have incorporated music into their lives. It dates back to the time of the mammoths and the Neanderthals, as suggested by flutes made from mammoth ivory that have been discovered. The idea of how and why music came into being has left many great thinkers baffled. Even Charles Darwin was very taken and amused by the idea and implied that music has a role in courtship behavior, where it is a medium of expression, though some scientists and thinkers like Steven Pinker believe that music is a spandrel underneath the dome of language and is pleasurable without any purpose of its own in evolution. But even entertainment and pleasure has been instrumental in bringing people together and music may have served that purpose all along. It has been a source of common shared interest amongst groups and societies. Even whales and orcas have shown to have unique repertoire within their societies, which is in fact very relatable to the highly emotional lives of these organisms.

Music has the ability to fire up almost the whole of our brain and has been shown to overlap in areas integral for the processing of language. Humans have evolved to be very sensitive to different pitches and tones. Thanks to our tonotopically arranged cochleas, which are almost like the flowing keys of a piano. The cochlea relays signals to the primary auditory cortex and follows along in the tonotopic arrangement. This part of the brain basically is helping us figure out what the sounds are. Just as language uses grammar and words to form sentences, music is also built of complex structures that give in the harmony or tone of that piece of music.

Once a listener has derived a sense of the harmonics, they tend to 'expect' the music in the same way as one uses grammar in a language. It is something we grow up with and pick up from our surroundings. Both of these syntactical analyses, be it for language or for music have been shown to occur in the Broca's area (left inferior frontal gyrus). Thus, the Broca's area is essential and shares a similar function in accordance to the regularities and patterns in both music and language.

Music is highly effective in activating the limbic and para limbic regions of the brain which are essential for processing emotions. Music has been shown to act on the ventral tegumental region, upregulating dopamine in the Striatal region of the brain. Dopamine interacts with Nucleus Accumbens which is associated with the reward pathway and addiction. This phenomenon has been associated with the emotional climax in a musical piece which usually leaves us with the 'chills'. Various other regions such as the amygdala, the fear centre of the brain has been shown to be activated to a greater extent while listening to dissonant

sounds adding another dimension of emotion to music.

So when we lay in a cosmic world after about half a year of growing up and the first sound appears - the beating heart of your mother like a metronome going endlessly, the constant breathing and the sweet lullabies - we start to become receptive and emotionally connected to them and through them to music. So even before we learn to recognize words and form associations with language, we are analyzing pitch and rhythm. So somewhere, music must have assisted in language development. It may have evolved to assist language in social bonding and learning. Though music may not be a means of communication, it certainly fulfills our social needs of cooperation and social attachment.

- **Yash Goel, B.Sc. Biotechnology, second year**

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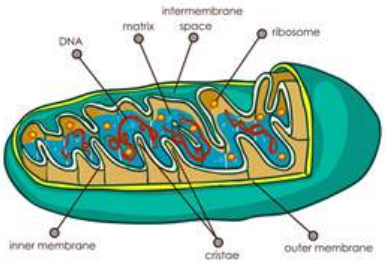
Paternal mtDNA?!

The mitochondrion is known to be the power house of the cell and is also known to follow maternal inheritance. The cells in our body use energy in the form of ATP which is produced by the mitochondria, thus giving it the name "Powerhouse of the cell". Mitochondria is a unique organelle in our body. Apart from having its DNA, it passes on this DNA from generation to generation only through the mothers' gamete, which indicates the absence of paternal component. We can trace our history back through the generations because of this.



Until very recently, in November, researchers from China, USA and Taiwan identified families where this pattern of maternal inheritance is not followed. This means that these families have a mix of mitochondrial DNA from maternal and paternal lines, which is very unusual. 17 people of three different families had mitochondrial DNA from both parental sides suggesting that mitochondrial inheritance is not what we believed it to be.

The mitochondrial DNA can be sequenced in many cases which include diseases. mtDNA is known to show heteroplasmy. The Cincinnati team lead by Taosheng Huang did the same for a few families and found two unrelated family lines with the same kind of pattern of inheritance. Scientists are still working on this case and are still not sure about the cause behind such a pattern of inheritance.

Can this be a new phase for the world of genetics?

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- **Shiksha Saraogi,**
B.Sc. Biotechnology, second year

Words of Wisdom

Mr. Pankaj Khanna

Mr. Pankaj Khanna has been working at the Imperial Life Sciences (P) Limited for the last 15 years. He visited School of Life Sciences - MAHE, to give a talk on Nanopore sequencing technology and its applications. Finishing his M.Sc. in 1999, he went on to work in Spinco Biotechnology before finally joining Imperial Life Sciences (P) Limited.

Could you tell us a little bit more about your job?

As a whole the company focuses on cell biology. Our job is to find out the latest technology present abroad and to make these facilities available to Indian research centres and scientists.

Can you enlighten us further as to how the industry works?

So the industry can be divided into two fields, one: those who research and translate and the second being the area in which I work in; the support group. The first field requires practical exposure so academic qualifications like a PhD is a must. If you want to take the shorter path with a better pay then it is best if you pursue training in bioinformatics, designing in cell biology and so on. Industries also look for good public speaking skills and presentation skills. In short there are two levels; the research level and the development level.

What are the challenges you think an industrial job faces as compared to a research job?

Well since we have to travel a lot and have to attend seminars and workshops all around the world, a major barrier I had to personally overcome is adjusting to the different accents. The advantage to traveling is the learning experience. The only major con is not getting enough personal time and not enough family time.

Also, in this field we have to continuously keep ourselves updated as the industry deals at a macroscopic level in various subjects.

Where do you think science is going looking at it from a macro-level aspect?

According to me, there is a big change happening. For example, in a US science publication you will notice that at least more than five scientists worked together to write that one publication. But in India we see only three to four scientists' names under a publication. We have to learn to collaborate with different scientists from different fields. This helps us add more value to the society.

Data science is becoming huge and genomes that once took days to sequence now takes only hours. Soon science will be able to deduce the cause of a disease and map out a genome sequence within hours. All we need to do is to learn how to collaborate more and have a more open and broader view of science.

It's been a huge leap from Sanger sequencing to Nanopore sequencing. Do you think we can go further than Nanopore sequencing? Can there be more technological advancements?

Very much so. There has been a technological leap. We have already started storing base pairs in 10kb storage and we are striving for shorter and faster ways to store thousands of genomes in smaller storage space. Computational power and the inability to isolate intact DNA are the only barriers we face right now.

Do you think there are any ethical dilemmas faced in sequencing technology?

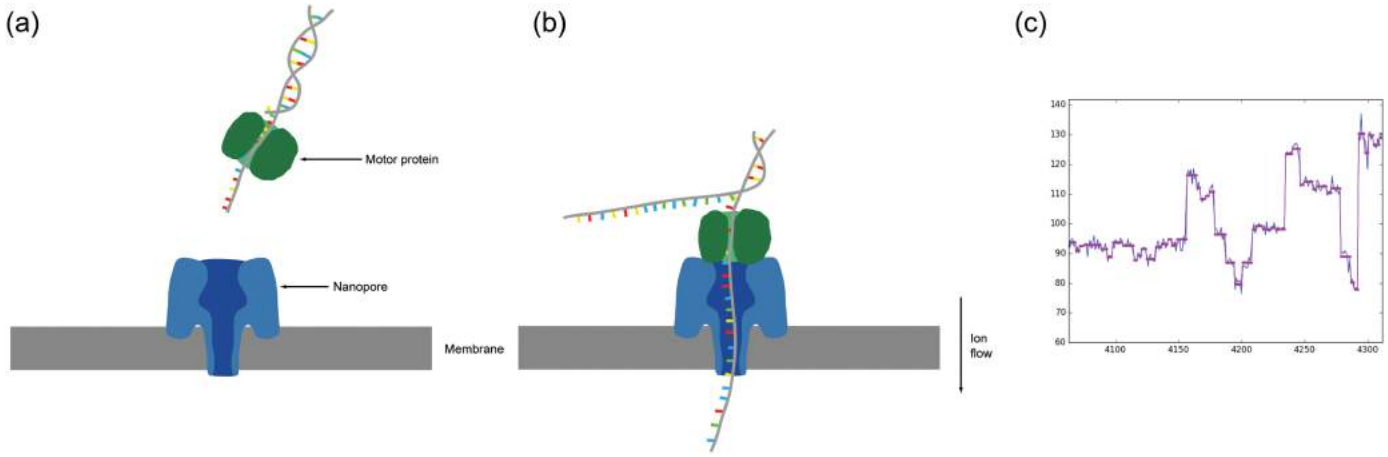
Definitely. There are always two sides to a coin. For example, one study in a 1000 genome project where people participated in, they were separated based on caste, geographical location and also on their religion. This may have been done to understand the difference in genomes based on these factors but I personally disapprove as I fear that soon people will be differentiated based on their genome too.

Before we wrap up, do you have any advice for the students and scholars of SOLS?

Study as much as you can and follow your heart. My grandfather would always tell me, “whatever you do, do it with passion. If you want to be a beggar, be the best beggar such that even the most selfish person will be convinced to give you money”. If you love what you do, nothing can stop you.

"If you want to be a beggar, be the best beggar such that even the most selfish person will be convinced to give you money"

Nanopore sequencing



(a) A biological nanopore is inserted into an electrically resistant synthetic membrane. A potential is applied across the membrane, resulting in ion flow. (b) The motor protein docks with the pore, and passes the DNA molecule through it. (c) Bases in the nanopore cause disruptions in the current which are characteristic of their sequence.

Richard M Leggett, Matthew D Clark; A world of opportunities with nanopore sequencing, Journal of Experimental Botany, Volume 68, Issue 20, 28 November 2017, Pages 5419–5429, https://doi.org/10.1093/jxb/erx289

- Nicole Mary Swer, Mayukha Bathini, Yash Goel

INDO-JAPAN SYMPOSIUM ON MOLECULAR MEDICINE

-Student Council and EdBoard

The Indo-Japan symposium was held at SOLS on September 19 and saw the exchange of knowledge between the life scientists for India and Japan. The Editorial Board, along with Student Council got an exclusive opportunity to interact with the speakers from Japan -

Dr. Sunil Kaul, Chief Senior Research Scientist, AIST, Japan is majorly interested in stress ageing and cancer, looking at the working mechanisms and potential interventions.

The EdBoard and the Student Council of SOLS with the delegates from Japan

Dr. Renu Wadhwa is a prime senior researcher in the Biomedical Research Institute (BMRI) at AIST and in particular, her group has been interested in understanding aging, cancer and stress biology. They study Ayurvedic knowledge and certain herbs for intervening with phenotypes.

Dr. Yoshihiro Ohmiya is the Director of BMRI, AIST, and works on bioluminescence, identifies some mechanisms that can have applications and commercializing them. He is also the President of the International Society for Bioluminescence and Chemiluminescence.

Dr. Yoshiaki Onishi is the Deputy Director of BMRI, AIST. He was originally a dentist and then got into basic sciences. He is currently focused on transcriptional regulation of genes and is working on *Ashwagandha* extract.

What made you transition from a clinical science like dentistry to basic science?

Dr. Onishi: In basic science, the goal and the experiment is clear and the results have clear numbers but in clinical science, it is up to the patient demand and what the patients want is up to their monetary status. So I got confused and moved to basic sciences.

You've mentioned that the motto of your work is bridging basic and application science. Can you tell us about some notable things you've done to close the gap?

Dr. Renu Wadhwa: Dr. Ohmiya himself is one of the best examples in AIST who has transformed his basic research to application. He works on bioluminescence. His basic research and patents have been licensed by the company Toyobo and now they are commercializing his discoveries. Those discoveries have been turned into technology which is being used in the laboratory everyday. We measure the gene activities by using those multiple colors.

How would you compare Japan and India in terms of research and culture?

Dr. Sunil Kaur: Japan is technologically very advanced. It is a developed country. India is coming up now in a big way but it will take some time. Culturally, it is quite different. The perfection, the patience and punctuality are what we need to learn from the Japanese to progress very rapidly. It is not only the economy but this cultural, passion and your nationalism has to come from within. Then only we can compete with the world. That's the difference.

Dr. Ohmiya: You know in ancient times, we learnt so much culture from India. You know, like Buddhism and some things like that. Now, we are teaching and in the future we may be seen learning again. It's like a cycle.

How has India grown since you've moved to Japan?

Dr. Renu Wadhwa: We've come back several times and we've seen the progress. It's right on the very fast stepping up. We've seen that in the big cities and small cities too, which is a very good trend. When we were having our education, we didn't have so many options you guys have. We didn't have all this. At that time, everybody would aim to go to medical college and if you are unlucky, you end up doing a B.Sc. But look at what you have. That's the progress. You have plenty to explore in education and then you have lot more streams to go into when you go to your own career. We could go either towards teach or research. Now you have media and more. We also didn't have the student council like what you have here today, we used to have those society functions of course, but nothing like what you have. So you are really lucky and its up to you to take it to the next step.

So a couple of years ago, if I'm not wrong Harvard published a paper on reversing telomeres and their shortening length and how reverse aging might not shorten the length of the telomeres. What do you think has advanced over the years and are we really that close to reverse aging? How is reversal of telomeres related to cancer?

Well, it has been a few years since this paper has been published. You probably know the significance of telomeres in aging and cancer. They shorten when the normal cells divide and they

don't when the cancer cells divide because cancer cells have an enzyme called telomerase - this was a huge field in the early 2000s and late 90s. Elizabeth Blackburn also got the Nobel Prize for that. So the whole scenario was if we can hit the telomerase and make inhibitors of telomerase, we will have cured cancer. Only if it was that simple. But unfortunately biology is not. The cells have evolved mechanisms independent of telomerase to be cancerous. Now the whole pharmaceutical industry is in trouble, because the telomere inhibitors won't work for those cancers that do not have telomerase.

And to make it even more complicated, one cancer has mixture of cells which are telomerase positive and telomerase negative. So will your pharmaceutical drugs, which are targeted to telomerase, work? The answer is no, you will have to have smarter drugs which will hit both pathways.

Now several laboratories have shown that if you have premature aging, for example, if you are exposed to lots of pollution and oxidative stress, it was shown that it will shorten your telomeres quicker. People have also studied that if you do yoga and if you meditate, your telomeres will remain younger. There is actual experimental data on those things but we don't know how authentic they are or how big the studies are. So it's challenging. But telomeres and telomerase has attracted the attention of lots of laboratories and researchers.

From all of your personal experiences, is there one piece of advice that you can give to our students?

Dr. Sunil Kaul: From my side I would say that for whatever you want to do in life, if you want something knock on the door and the door will open. But it won't just open, you have to knock and keep trying. That's my advice.

Dr. Renu Wadhwa: Whatever you do, either small or big, do it with a full heart. Do it with passion and perfection.

"For whatever you want to do in life, if you want something knock on the door and the door will open. But it won't just open, you have to knock and keep trying."

- Sunil Kaul

- **Compiled by: Sonam Mehak, Anoushka Borthakur, Yash Goel, Nicole Mary Swer, Mayukha Bathini**

ANNUAL CONFERENCE OF THE SBC(I) 2018

Left: Inaugural event of the 87th Annual Conference of SBC(I) held at SOLS auditorium
Right: Dr. V. Nagaraja delivering the SBC(I) presidential address

The 87th Annual Conference for the Society of Biological Chemists (India) was held at the School of Life Sciences, Manipal from November 25 to 26, 2018. The Editorial Board and its representatives were able to catch some of the speakers off stage for a short interview. We chatted with them about their own research work and the latest developments in the field. For those of you who missed the conference, we've got you covered!

All the talks were very informative about the scientist's latest work. Dr. K.Thangaraj is the Head Scientist at CCMB, Hyderabad. His research focused on mitochondrial mutations and the origins of the Andamese population, is a breakthrough on the origins of the modern human. His work highlights how high levels of endogamy in various Indian communities have an impact on mitochondrial mutations along with associating it with several disorders. Dr. R. Somasundaram, Research Scientist at the Wistar Institute, Philadelphia, shared with us his work on developing humanized mouse chimeras which allow for the targeting of human tumours, tackling the inefficiencies which arise when working with mouse models such as a shorter range of mutations in the case of mouse melanomas, as compared to human melanomas.

It should also be our goal as future researchers to identify and solve upcoming problems. To that length, we wanted to know about one big threat looming over us - multi-drug resistant bacteria. Dr. Dipankar Nandi, Department of Biochemistry, IISc, Bangalore, took his stand on the MDR situation in India and on devising better techniques for its detection. Dr. Nandi is trying to use Raman Spectroscopy to develop a non-invasive, fast technique to identify markers for multi-drug resistant strains and antibiotic resistant bacteria in mouse sepsis and clinical samples. This particular work is in collaboration with a colleague in organic and physical chemistry which allows him to keep learning new things.

Does research need to have certain priorities? If so, what gets neglected? Our respective choice of areas of research have a huge impact on society. Dr. M Balasubramanyam, Dean of Research Studies and Senior Scientist at the Madras Diabetes Research Foundation (MDRF), Chennai tells us why he thinks focus on non-communicable diseases should be one priority.

The beginning of the year 2000 saw non communicable diseases and lifestyle associated disorders such as cancer, diabetes, atherosclerosis,

neurodegenerative diseases and liver-related disorders as a big health burden.

"Nowadays, non communicable diseases like diabetes affect individuals around 30 years of age which is when the individual is most productive and is an asset to the country. However, these diseases indirectly affect not only the economy of the country, but also the quality of life and social well–being of the people. It is the need of the hour to identify the risk factors associated with non-communicable diseases in order to prevent such diseases."

Following on the same note of identifying upcoming problems and solving them, probably the most heard phrases in the research community in this day are, "application based science" and "bench-to-bedside". When asked which is more important - applied or basic science, Dr. Alberto Luini, Principal Investigator, IBP-CNR, Naples, Italy, says, "it doesn't depend on action or whether it's applied or basic, what matters is what is important. What is important is the future, what I'm doing and what impact this is going to have. Usually of course we think about medical impact but basic research has an impact far ahead of what you can see today. So it's difficult to say which is important. You need vision and you need the ability to predict the future. I don't think it makes sense to say that A is important or B isn't."

Dr. Dipnkar Nandi during his talk

Dr. Varadharajan Sundaramurthy, NCBS, Bangalore, had a similar opinion. According to him, the reason why studies from the bench do not get to the bedside is because of a gap between different fields. "I find a drug, say, for Tb, I can validate it in animal/murine models but the drug has to be tested for its safety for human consumption. We also have to determine dose, design the formulation and route of administration. This involves pharmacology: pharmacokinetics, pharmacodynamics (PKPD). We don't think of this as basic scientists. There is a whole bunch of professionals who should be able to take it from where we leave it but that doesn't mean that there is a rigid line before which I stop. When we have people of both expertise then they have to be bridged. What I'm trying to emphasize is that we need people who understand what basic science is and who can take the study forward to the application sphere. We need interaction with industries , as scientists we get too involved in what we are doing and lose the bigger picture. We do not have enough of the bridging which is why many theories do not get translated." With all this talk of translating research, we wondered if it could go the other way round. To this, Dr. Matthias Reumann, research staff member, IBM Research Collaboratory for Life Sciences, Melbourne, shared his insights. "I don't think that it's a one-way street. It's very important that it goes the other way around (as well). My wife, who is a clinician is an example. She went into a research lab and learnt all the basic research tools that you are learning here. So there you have a clinician who learns fundamental science. You need a clinical/medical/human understanding to actually influence what you are looking at in your experiments."

While we are tackling current issues, what better way to appreciate the present than by reminiscing the past? When asked about the milestones in terms of instrumentation, Dr. Sreejayan Nambiar, Field Application Scientist, Thermo Fisher Scientific, Bangalore, took us on a walk down the

memory lane. "I completed my master's in 1998. When I finished my master's, I had not seen a PCR machine. I knew what happens, but I had not seen it. It was very difficult to extract DNA from any sample. But now gradually everybody knows about it, the reason being all these companies coming in, with globalization and India becoming more open. When PCRs came in, sequencing started happening. I finished my Ph.D. in 2005, and till then I had only heard about real-time PCR. I had not worked on it. Now I am training people on real-time PCRs. There is more access to literature, until then you would have to go to a lab, you would xerox some papers and then find your data. Now you can do a sequencing in 2 or 3 hours. So the Human Genome Project which took about 10 years, can now be done in one month's time."

To conclude, we would like to leave you all with an anticipation for the future. In the words of Dr. Umesh Varshney, President, SBC(I), "if the level of technology was still Sanger sequencing, you will only be looking at the major peak and won't be able to look at the minor peaks. Previously we were not able to detect the diversity and variation such as alternative splicing or the heterogeneity that you see. With advanced technology, we are able to detect this heterogeneity. Now the question is, how are these heterogeneities important in the physiology of the cell, at what levels of the cell do these differences exist and what is their role in the regulation of genes?

In biology, nothing is meaningless and it is left to us to figure out these small changes in the genome, RNA and epigenetics."

" I hate the word interesting, everything is interesting. To understand what is important is very difficult and is what I think forces people to think deeply and mature."

- Alberto Luini

Listen to the podcasts of the following interviews at: https://sites.google.com/site/everythingatsls/editorial

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Interviews by:

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Dr. Alberto Luini – Shalika, Achyut
Dr. Helmut Brand - Shravya, Danielle
Dr. Mattiahs Reumann – Ramya, Christabelle

Article by:
Mayukha Bathini

The poster presentation

A snapshot from the mesmerising cultural event

WANDERLUST

The Kumara Parvatha peak.

Kumara parvatha

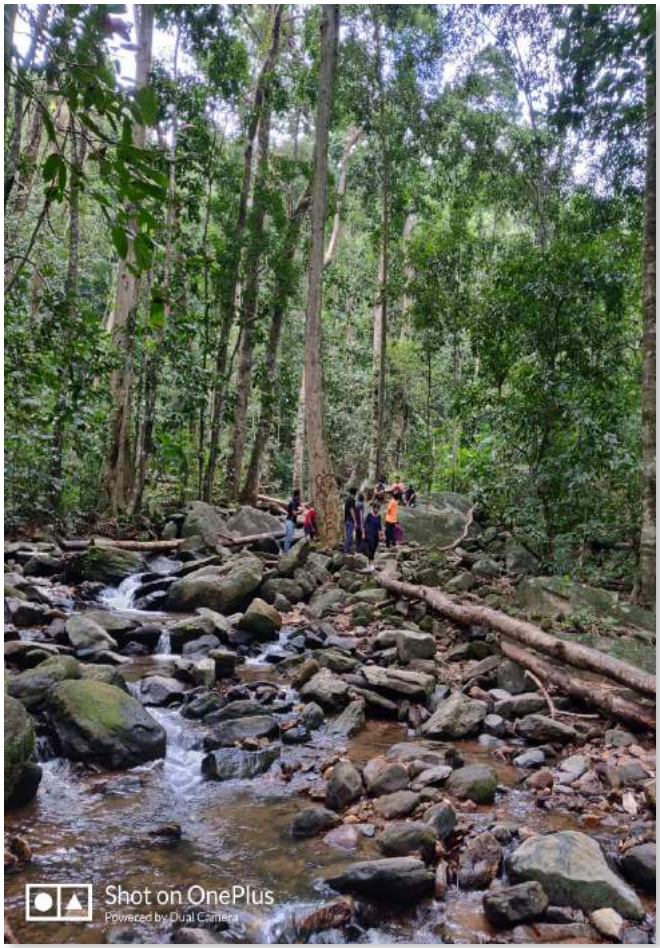
Wearing a T-shirt which said 'Why' my journey started at 5.00 am from Manipal to Mangalore. From Mangalore bus station, we had to take a bus to Subhramaniya; the starting point of the trek. After reaching Subhramaniya we had our lunch and then started for a 'supposedly' two day trek. In total there were 17 of us.

The starting hike seemed easy even though my fear of butterflies was killing me, as it seemed all the butterflies flew right next to me. With all excitement, we kept going. The first day was going to be an 'aaram se trek' as we just had to go 7 km up and then set the camp at Battamani. Within an hour I felt like I had no energy. The sun was piercingly hot and all that climbing made me sweat like a waterfall. But with some help and some delay I finally made it to the camp.

We saw the sunset from the mountain top and it was truly a sight worth beholding for a lifetime. After watching the sunset, I saw how to pitch a tent for the first time.Then we found some dry twigs and made maggi. We also had paneer and chapatti.After eating we all tried to stargaze but unfortunately, we couldn't because of the clouds and the light of the full moon.

We all sat and played games for a while and then called it an early night as we had 21 kms to trek the next day.

"We saw the sunset from the mountain top and it was truly a sight worth beholding."



23/9/18

In the morning at 7.00, we started our ascent further up to the Kumara Parvatha peak end point. The trek up was scenic and picturesque with grassy fields and mountains all around us. In between we stopped at a place called Kallamantappa, where we had our breakfast. From there we walked up to reach the peak. It felt like we were entering the clouds. It was the most beautiful site one could see. We could literally feel the clouds all around us. It felt like heaven. On reaching the top I got the answer to the question, why people go on such difficult treks. With all our energy drained out but minds completely rejuvenated, we started our trek back down thinking that the worst was over and trekking down would be easier. Little did I know that I was completely wrong and trekking down was even more difficult and required even greater strength. In pursuit of looking for a little less steeper way back we went on a wrong path. It was going to get dark soon and we all had only one thought in our mind and that was 'Survival'.

The jungle in which we had to trek at night was home to many wild animals, poisonous vipers and blood sucking leeches. We informed our trek organiser (let's call him Clay) who had thankfully stayed back at the camp about what had happened. He and two others came with food, water and torches. After about two hours of trekking, it was almost dark and we only had our phone torches with all our batteries dying. We were out of energy and needed food. Shouting 'Shanty, Shanty', which was our code for getting directions, we made our way down. Finally, after some time we heard Clays voice and that voice seemed like God's voice to us. We all immediately felt revived and filled with energy. Sitting in the middle of the jungle not caring about hygiene or washing hands before eating, we had the best pulav in our lives. After eating and drinking water. We started our journey back down with fresh enthusiasm.

This being my first trek and me not having enough stamina and mental preparation, thought I couldn't go further. But it was Clay who motivated me, literally holding my hand and pulling me. Making jokes and making me laugh. With all the toiling and Clay forcing me to walk I finally reached the camp at 2.30Am almost 1.30 hours later from the time when others reached. My toes were hurt badly and my legs had no strength. All I felt was, why? why did I come? I could have spent my Sunday sleeping in my cozy bed. I felt bad for Clay for having to literally pull me. I felt bad for others because they had to wait for me. That night, I silently went to sleep with all these thoughts in my mind.

24/9/18

Next morning I woke up with only one thought in my mind; I had to be at the front. I cannot be left behind. I wore well protecting long and thick socks to protect me from the leeches who had sucked almost all the blood from my legs last night. I felt like I was ready for the trek back down. I felt, this time I could do it. Little did I know that it was not going to be any easier. Anyway with rejuvenated energy in me I had breakfast and then we all sat and played mafia. Surrounding us was the beautiful mountainous landscape. After the game we took a group picture with the people whom I will never forget in my life. Once we started the trek back down, I realised that the rocks were slipping and I had no confidence to let go of all the fears and just step on to those rocks, trusting enough that I won't fall. So with this problem and the disadvantage of being short, I was once again left behind. And once again Clay came to my rescue. I don't know how I would have managed without him. He gave me a stick to hold, which would help me in walking down.

He was constantly there with me. After a while, I found my friend (let's call her Nigella), waiting for me when all others had already gone ahead. Then the three of us walked down slowly with Clay; again pulling me, and Nigella having an experience of trekking earlier, walking in the front and constantly motivating me. Finally by the end of the trek I somehow got renewed energy and I completed the last part of the trek on my own. Once we reached the end of the trekking trail, I think I was the happiest person alive on the planet for that moment. I was so happy that I somehow made it to the top of mountain and after the worthless feeling of giving up, I again somehow made it back safe and sound to the bottom. I am thankful to all the people who I met during this adventure. Without them, this trek wouldn't have been possible. My special thanks to Clay, Nigella and Yael (my classmate who had gone for the trek with me). True that this trek made me feel that I wasn't capable of adventures, but it made me realise that life is too short to sit in one place and do nothing thrilling. Once the trek was behind me, I discerned that anyone can be adventurous and take part in adventure activities with just little bit of stamina and lots of mental strength. It gave me a new meaning in life. It made me respect life even more.

This weekend, even though it was the most difficult and the toughest weekend, changed my life, it gave me a new perspective and I will never forget this experience. This experience, infact, increased my passion and love for travel and adventure.

-Srishti Agarwal
B.Sc. Biotechnology, second year

Creativity beyond this page!

A SMILE OF REMINISCENCE

Life is not a TRIP of Brilliance, rather it's a TALE of Perseverance

Yes, there is Win, there is Loss; but ultimately, amidst the chaos, it is all about having Endurance

Do not be afraid of Defeat, but beware of Stillness.

As with nullified time, the speed of life is only proportional to the Distance.

Do not sit with Convenience, instead give meaning to your Existence.

Build the Resistance along with Persistence and Resilience.

Yes, there are Smiles, there are Tears; but ultimately, amidst the uncertainty, it is all about each living Instance

Because,

Life is not a TRIP of Swift Clearance, rather it's a TALE of leaving this splendid world with a "Smile of Reminiscence".

- Ipsita Pujari
(Structured Ph.D. Research Scholar, Department of Plant Sciences)

A world through the lens...

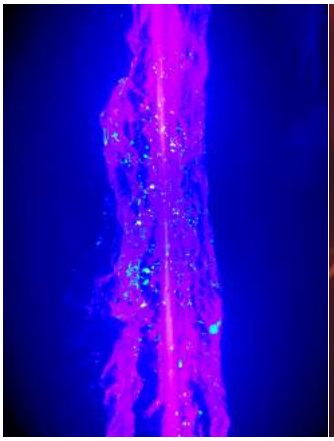
To go out with the setting sun on an empty beach is to truly embrace your solitude.

- Shiksha Saraogi (B.Sc. second year)

A beach is not only a sweep of sand, but shells of sea creatures, the sea glass, the seaweed, the incongruous objects washed up by the ocean.

- Shiksha Saraogi (B.Sc. second year)

Weekly Snapshots:



Top row (left to right): Sourav Patege, Swetha Stanley, Shannen Fortes

Bottom row (left to right): Shiksha Saraogi, Swetha Stanley, Nirmal Mazumder

Humour for the strong

The name's Alfred. Alfred Kettleman. Today will be a day of gloriousness for **I have obtained the diary of my professor** (his personal one). *insert evil laugh* . The best part about it is, its his journal from when he was in college.

Wrong you say? well yes, actually. (kids, do not do this at home). But I have good reason! Professor is insane. I cannot take this anymore.

Okay maybe I did blow up his lab and burn his research papers and also lose his cat (long story), but he has gone too far! He confiscated my gaming console! Maybe I am wrong here...its too late to go back now.

My hands are moving of their own accord.

turns pages

Day 1 : As I realised that the probability of me being up early in the morning for three years is as low as the brain cells I possess, I had to take the bus to college. Our driver seemed to have taken an oath to hit every pothole on the road. They felt like they were black holes, oscillating between dimensions as the bus traversed over them. By the end of the ride my back must have looked like one of the Feynman's diagrams! I was glad to have made it to my class in one piece.

Then began our orientation and there ended my tolerance to hunger. As a "dutiful student" I did grasp a considerable amount of everything that happened. But very soon the speakers started to look like delicious eatables.

Day 8 : I'm still trying to get a hang of hostel life. Its like working a monotonous job, first you're bad at it then you get used to being bad at it.

Eating the same food every day all day, I finally understand the motive behind prison breaks!

Having a roommate has its perks; when you've got a lot in common everything sails as smooth as a clumsy person on a banana peel but when disagreements arise you'll feel like the clumsy person on the banana peel. You'll eventually make up though, because after all you've got the rest of your college years with them which would feel like an eternity!

Day 30 : You'd think a teenagers mind is fickle, until you experience Manipal's weather! Ah the rains of Manipal! One day I hope to find whoever it is who upset the clouds hovering over Manipal 'cause THEY'RE ALWAYS POURING! I've been here for over a month and I've seen my Umbrella more than my roommate. And if I had a hundred rupees for every time I stepped in a puddle I'd be enjoying high tea with Bill Gates! On the bright side the inventor of umbrella rests peacefully in his grave knowing he's amounted to so much good!

Operation: StealthyComic

Funknown is a self-declared comedian whose identity is unknown. Additional information is yet to be found concerning Funknown

Day 76 : I am done whining about everything! I, a dedicated scientist haven't forgotten my main aim, that is, to convince people I'm a hilarious hunk! Only then would I be able to carry out my experiments..

I thought of performing a well articulated comedy bit to my friends at the hostel hoping for some laughs. The plan was working. As I told them my jokes I heard a couple of chuckles, but then, it soon went downhill as I tripped over the oil I had spilt earlier (my roommate blamed me for not cleaning it! Now somehow this was my fault!) and smacked my face onto the hard floor. All of a sudden my entire gang of friends started laughing, as I wailed in pain. This is when I realised 'Why crack a joke when you can crack your nose?'.

I used my shrewd observational skills and deduction tactics to figure out that people enjoyed light hearted physical comedies over explicitly written smart humour.

Day 90 : Based on what I had observed and learned I was ready to make my friends laugh their guts out in the same way I had done previously. I had done my homework – I had watched a hundred hours worth of America's Funniest Home Videos and just about every prank in "Just For Laughs Gag". Just the right amount to make my friends clench their stomachs as they rolled over the floor laughing.

College got over. It was a tedious day and we were walking back to our hostels as I came across the perfect opportunity. Slow moving traffic and an agitated crowd. Could it get better than this? I seized this and executed my pitch perfect plan. I pretended to dance along the footpath slowly to the other end as my friends watched in amusement and gently pushed an old lady and her pig-like Brussels griffon whom she was walking, into the traffic. At that moment I was expecting a loud guffaw from everyone around me.. Oddly enough, there was silence and my friends pretended to not know me and soon were nowhere to be seen.

I came back to the hostel with a hand-print on my face. Wonder why my friends seemed to enjoy that.

Interpretation: Just like how are experiments conducted by scientists one cannot expect an exact outcome irrespective of the protocol followed for the experiment.

Also don't push old ladies with dogs because they will not deter from unleashing their beast on to you. (Brussels griffon more like Brussels grip-on-to-your-damn–leg)

Day 132: Sorry journal, couldn't write anything in you for a couple of days because I had to prepare for my upcoming examinations. You'd think that a diligent student like me who pays attention in all the classes would barely struggle with exam-prep. Oh boy! Could you be more wrong?

All the professors and seniors kept telling us to manage our time according to our speed of learning and I gladly ignored it! Now I'm suddenly on the brink of failing my tests! Absurd, isn't it?

Day 142 : Hello dear Journal! My examinations are done! Wonder how I got through it... You know that amazing feeling when you studied for days together, pulling all nighters, then the first question on the paper appears Greek? It might sound like an exaggeration, but this is figuratively what I experience.

Anyway, I have lowered my expectations by a large margin. This is pro of being cynical and pessimistic, either I am proved right or I am pleasantly surprised by the outcome.

Day 150: Well the results came out and I passed. I'm just as surprised as you are. I informed my parents about my results and they heartily congratulated me. While I insisted that it was my hard work that got me to pass, my parents were firm believers that it was the ten coconuts they cracked in Tirupathi that got me through these exams. I don't blame their thinking. To each their own!

Day 155: I've managed to convince people I'm funny.. But I got myself more entangled than chromatin could ever get 'cause they want me to write a humourous article. I guess they're on to me. Dear journal, you've got all the information.

Day... (to be continued)

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Make sure you leave us your feedback!

A champion is defined not by their wins but by how they can recover when they fall.

- Serena Williams

A peek into the past (from 2015)