

# The Nest

A Student Council Presentation 2018-2019



**PHARMOVATIONS  
DESIGNING THE FUTURE**



MET Institute of Pharmacy (Degree)



THE MET LEAGUE OF COLLEGES  
**MET**  
AS SHARP AS YOU CAN GET

**Bhujbal Knowledge City**

## Our Faith

न चौर हार्यम् नच राज हार्यम् ।  
न भातृभाज्यम् नच भारकारी ।।  
व्यये कृते वर्धते एव नित्यम् ।  
विद्याधनं सर्वधन प्रधानम् ।।

Knowledge can neither be stolen by a thief,  
nor snatched by a king.  
It is indivisible unlike ancestral property,  
it never burdens the bearer,  
it multiplies manifold when offered to others.  
Knowledge is the supreme form of wealth.

## Our Vision

To shape professionals, to conquer the present and the future challenges to the socio economic fabric of our society, by institutionalising search, development, research and dissemination of relevant knowledge through structured learning systems.

## Our Mission

To evolve, develop and deliver dynamic learning systems to equip professionals with conscience and commitment to excellence and courage to face business challenges.

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# MET League of Colleges



Just a stone's throw away from the Arabian Sea is an institution that is creating waves. Because, it is quite simply, a cut above the rest. The MET League of Colleges is a conglomerate of premiere educational institutions, driven by a single-minded focus on imparting quality education, to make students sharp. Training is imparted round-the-clock, seven days a week. Projects and assignments are given utmost importance and students learn on the job. Application-oriented knowledge, garnered in the lecture halls, is applied to industry assignments. The faculty spares no effort to make the students razor sharp, so that they make their mark in the corporate world. No effort has been spared, to create an environment that encourages students, to push the limits of their minds. All this, to help young professionals face the challenges of life. And make their mark in the corporate world.

## **Bhujbal Knowledge City, Mumbai**

- Institute of Management
- Institute of Mass Media
- Asian Management Development Centre
- Centre for Insurance Training, Research & Development
- Institute of Pharmacy
- Institute of Medical Sciences
- Institute of Information Technology
- Institute of Software Development & Research
- Institute of Computer Science
- Institute of International Studies
- Institute of Alternative Careers

- Rishikul Vidyalaya
- Knowledge Explorer - Publishing Division

## **Bhujbal Knowledge City, Adgaon, Nashik**

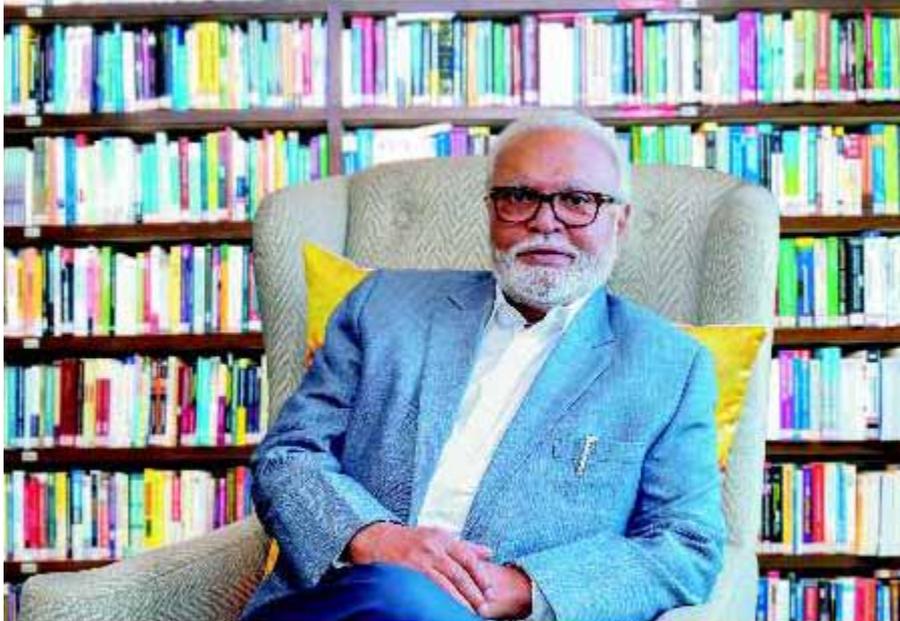
- Institute of Management
- Institute of Pharmacy
- Institute of Engineering
- Institute of Technology (Polytechnic)
- Institute of Information Technology
- Institute of D. Pharmacy

## **Bhujbal Knowledge City, Gowardhan, Nashik**

- Institute of Architecture and Interior Designing

At MET, over four thousand students and faculty are involved in delivering unique learning systems, through ultra modern infrastructure and academic rigour. MET Institutes are ISO certified, with affiliations to the University of Mumbai, Directorate of Technical Education, All India Council of Technical Education, MSBTE, Pharmacy Council of India, C-DAC - Ministry of Communications and Information Technology, The Chartered Insurance Institute (CII), London, Michigan State University, East Lansing, and Tianjin University, China, Hawaii University in participation with the University of Mumbai. MET also has strategic institutional collaborations with the Association of Chartered Certified Accountants (ACCA), UK, NCC Education, UK, Sprott Shaw College, British Columbia, Canada, Mountbatten Institute, UK, the Global School of Management for alliances with various Universities in Australia, Canada and ICE Creative Excellence Pvt. Ltd. (Founded by Balaji Telefilms Ltd.)

# From the Chairman's Desk



***“The Future belongs to those who prepare for it today”***  
- Malcolm X

I am delighted to share with you the swell of emotions and heartfelt warmth as we complete three decades of exciting journey of MET. In November 1989, when we embarked on this mission of shaping the young professionals, we had set a modest goal of training, facilitating and leading the youth on the path of ascendance in professional careers. Now as we watch the galaxy of twenty thousand plus METizens lighting up the business arena world over, we take a bow in honor of the student-teacher-parent trinity. Their trust is our wealth, their achievements are our glory and their enlightenment is our Nirvana!

We are conscious of our responsibility and accountability to deliver competency based multidisciplinary learning programmes to equip the youth to meet the present and future challenges. As technology attempts to deliver disruptive growth, the young professionals need to be well versed in dynamic learning processes to sustain professional success. This involves sharpening the pedagogy while maintaining academic rigor and relevance to dominate the market forces. At both Mumbai and Nashik complexes, we are blessed with a passionate student-teacher-parent combine striving for enlightened learning ethos.

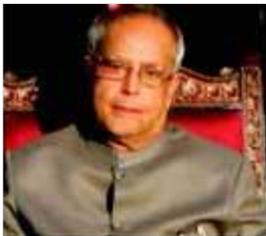
As we share the journey in the future, we rededicate ourselves to uphold the trust reposed in us by our stakeholders believing in thespian Peter Drucker, “The best way to predict your future is to create it”.

**Chhagan Bhujbal**  
Hon. Founder Chairman  
Mumbai Educational Trust



# Advantage MET

- MET Institute of Management recognised as 'The 25 Best Institutions for Higher Education 2017' by TKR\*
- PGDM (e-Biz.) wins the Indian B School Specialisation Award '13 by Discovery Education Media
- Ranked 4th Best in Advertising & PR categories and 9th Best Post Graduate Media School all India by the Edutainment Awards 2017
- Ranked 4th Best Marketing Communication & Advertising Management School (All India) and 4th Regional Best Media School (West) by The Edutainment Show 2015
- MET is a Ph.D. Research Centre of University of Mumbai & Savitribai Phule Pune University in Management, Engineering and Pharmacy
- MET is an approved Training Partner of the National Skill Development Corporation
- MET has the best e-enabled state of the art infrastructural facilities
- Focus on delivery of lifelong learning skills to build critical professional competencies
- Futuristic e-driven pedagogy and modules deliver e-commerce, IT and digital skills
- Global internship opportunities across USA, UK, China and Dubai
- Strong alumni base
- Freeship awards for meritorious students
- Excellent placement opportunities in India & overseas
- Superior intellectual capital armed with knowledge and experience
- Well-networked with the best of corporate in India and abroad
- Global faculty and international knowledge sharing modules
- Global faculty and international knowledge sharing modules
- Sensitising the students towards social cause through MET Seva CSR programmes
- In participation with the Mumbai University, MET has association with the Tianjin University, China and the Hawaii University
- MET is an Authorised Training Partner for CCRA, joint certification by AIWMI & NISM
- International alliance with the Michigan State University
- Unique partnership with the Chartered Insurance Institute, London
- MET and ACCA (UK) have collaborated to launch eMBA Finance - ACCA (UK)
- MET has an academic understanding with Sprott Shaw College, British Columbia, Canada and the Mountbatten Institute, UK
- MET has an MoU with Global School of Management for academic alliances with leading universities and institutes from UK, USA, Canada, Singapore and with Questconnect, Australia
- MET has an Institutional linkage with Edith Cowan University, Australia
- MET BKC, Nashik is the Nodal Centre under RETC for State of Maharashtra, a project of IIT Chennai
- Research at MET BKC, Nashik is funded by DST, Govt. of India in quality parameters in MSME's for productivity improvement
- MET BKC, Nashik is the Recognised Centre under NMEICT, a project of MHRD, Govt. of India
- MRV is recognised as 'Future 50 Schools Shaping Success' by Univariety and Fortune Publication



Shri Pranab Mukherjee,  
Former President of India



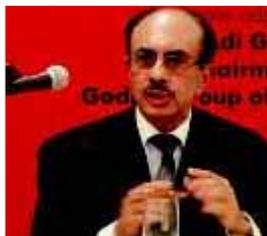
Mukesh Ambani,  
Chairman & MD, Reliance



J. Hari Narayan,  
Former Chairman, IRDA



Smt. Pratibha Devisingh Patil,  
Former President of India



Adi Godrej,  
Chairman, Godrej



Rahul Bajaj,  
Chairman, Bajaj Auto



## MET Chairman Wins Edupreneur Award

Founder Chairman Mr. Chhagan Bhujbal won the coveted Edupreneur Award and was featured amongst 11 iconic education-entrepreneurs from Maharashtra by The Times Group.

# MET Institute of Pharmacy

The MET Institute of Pharmacy (MET IOP) was established in the year 1993 with the two-year Diploma programme in Pharmacy (D.Pharm.) recognised by the Directorate of Technical Education. The four-year Bachelor's programme in Pharmacy (B.Pharm.) affiliated to the University of Mumbai was started in the year 1994. The MET IOP is approved by the Pharmacy Council of India, New Delhi AICTE, New Delhi, and accredited by NBA.

The Institute pursues the philosophy of perpetual acquisition of knowledge. Apart from academic curriculum, our policy has been to provide value based education and to expose the hidden potential of the students. Our students have free access to the computer facilities and are provided with LCD projector in the class room for their seminar presentation. Our aim is not to make the students mere job-seekers but to make them the architects of their future.

The Institute provides a quasi-corporate ambience for the students. MET has state-of-the-art classrooms, a well-stocked dedicated pharmacy library and fully loaded pharma laboratories. A hi-tech convention centre for seminars and workshops. Recreation areas to unwind. No efforts have been spared to create an environment that encourages students to push the limits of their minds.

Continual exposure to the recent developments in the world of pharmacy through industry interaction programmes keep students at the cutting pharma edge. Unique pedagogy makes them so sharp that they have been consistently making a mark at the University of Mumbai.

Over the years, several distinction holders and University toppers have graduated from our institute. Our students not only excel in academics but they have been champions at various cultural and sports competitions. The average result each year is above 90%. Our alumni are making us proud all over the globe by being leaders in their choice of vocation.

## Vision and Mission

- Vision: MET Institute of Pharmacy has a vision to be recognized as one of the leading institute of pharmacy education in the nation and envisages to produce world class pharmacists who are equipped to cater to the present and future needs of the profession and society at large.
- Mission: MET Institute of Pharmacy pledges to impart quality education in the field of pharmacy and is committed to ensure all round development of the students, enabling them to make valuable contribution in the various facets of the field of pharmacy and contribute to improving the quality of life.

## Program educational objectives

The pharmacy program for the under graduate students aims to achieve the following educational objectives:

- Students emerging from the pharmacy programme will excel in their profession.
- The graduates emerging from the pharmacy programme will perform with ethics in the pharma sector.
- The graduates undergoing the pharmacy programme, will pursue higher education.



# The Director's Speaks



**Dr. U. B. Hadkar**  
Director, MET IOP

The technology today is going by leaps and bounds. This is the information and digital age and you need to keep pace with the technology. With a click of a button you can talk to a person in any corner of the world. Consequently, the sensitivity towards each other has been decreasing day by day. Against this background it was heartening to see the well-attended Alumni Meet of MET Institute of Pharmacy on 5th January 2019. The Alumni Meet was a grand success. All the teachers were extremely happy to know that, most of the graduates from MET are working at high positions in pharmaceutical industries. Our efforts at MET is to see an all-round growth of a student.

During this academic year, seminars were held and guest lectures were arranged that helped the students to understand the various subjects included in the syllabus.

This year the students had participated in the Rx festival and earned prizes in various events such as the Fashion Show, Nukkad Natak, etc.

MET College has successfully completed 30 years this year. The MET Utsav was held in the month of January 2019. The MET Utsav which was celebrated was the best in the past 30 years. The students and the staff participated enthusiastically in the MET Utsav. Thanks to Mrs Vishakha Bhujbal, Mr. Pankaj Bhujbal, Mr. Sameer Bhujbal and Mrs Shefali Bhujbal for guiding the students throughout the year. Special thanks to Dr. Abhijeet and Dr. Abhishek for a wonderful inauguration show. We highly appreciate the enormous efforts put in by our honored "Shri Chagan Bhujbal" who was well supported by Mrs. Meenatai Bhujbal.

For building the ship of MET and steering it successfully for the past 30 years, the message we get is "Devote your heart and soul to the objective and the success is yours".

I thank the magazine committee members Ms. Vaishnavi Kapileshwari, Ms. Isha Sawant, Ms. Nidhi Kate and Ms. Deann Dias for shaping this magazine "The Nest" and also thank Mr. J.G. Irani, MARCOM head, and Mr. Ashish Shrivastava, MARCOM Deputy General Manager, for their help and guidance to the magazine committee.

# Message From the Principal



**Dr. Abha Doshi**  
Principal,  
MET IOP (Degree)

The New Year started with a renewed vigor and enthusiasm with our Alumni Meet 2019 wherein more than 150 alumni participated. Preparations through the month of January culminated the MET UTSAV 2019 celebrations wherein all the students, staff and Trustees wholeheartedly participated in various sports, workshops and cultural events. Our students have won the first prize in Robotics exhibitions. We have seen them work tirelessly to achieve their goals and they did succeed.

This was followed by the RX festival wherein our students won prizes in many categories. "Congratulations" to all the winners and participants! Participation is the first step for winning. These activities help the students in their overall development.

Dear students, arise, awake and discover your true potential. This is possible only if you shrug off your inertia, come out of your comfort zone and do not be afraid of the hard work. Grab the opportunities that are sometimes knocking at the door, with both hands, persevere, complete the task to the best of your abilities, and push the boundaries that you have set for yourself. You might be surprised at what's beyond the door.

# Our Gurus

The most quintessential part in MET institute is the relationship between the teachers and the students. Teachers at this reputed organization guide the students and allow them to explore their talents and achieve excellence in their field of specialization



**First Row:** (L-R) Dr. Rashmi Srivastava, Dr. Vaishali Dixit, Dr. Abha Doshi, Dr. U. B. Hadkar, Dr. Sonali Naik, Dr. Vijaya Patil, Mrs. Poonam Advani

**Second Row:** (L-R): Mrs. Sindhu Menon, Dr. Madhura Vaidya, Mrs. Aushima Dasari, Mrs. Priyanka Joshi Jain, Ms. Vrushali Keer, Mrs. Sheeja Koliyote, Mrs. Bhagyashri Joshi

# The Non-Teaching Staff

MET Institute of pharmacy has created a bond with the students via the teaching and non-teaching staff. The students feel secure due to the safe and loving atmosphere that is generated.



**First Row:** (L to R): Mr. Sudhir Ayare, Mrs. Manisha Barve, Mrs. Manasi Vaidya, Dr. Abha Doshi, Dr. U. B. Hadkar, Mrs. Priya Sawant, Mrs. Aarti Gore, Mrs. Asavari Hadkar, Mr. Gurunath Pednekar

**Second Row:** (L to R): Mr. Sunil Mohite, Mr. Ghanshyam Kambli, Mr. Pradeep Jadhav, Mr. Sanjay Katkar, Mr. Pradeep Jadhav, Mr. Yuvraj Thakre, Mr. Pramod Karbhari, Mr. Sanjay Palav, Mr. Mahendra Suve, Mr. Ajay Mali

# Cultural In-charges Communicate

'Ambition is the path to success. Persistence is the vehicle you arrive in.' ~ Bill Bradely

This year MET is celebrating 30 years of excellence and the year promised to be an eventful one. The cultural activities started rolling out and the fun started. Whether it was the fast race for the treasure or the adrenaline rush at water slides, we all had a jolly good time throughout the year. Our cultural events were a mixed bag including social activities like blood donation camp, street play on drug abuse awareness, educating the school children on the importance of nutrition, entertaining senior citizens in an old age home, plantation drive and celebrations like the dindi for Aashadi Ekadashi, Garba during Navratri, Khari kamai and Marathi Bhasha Day.



Our vision was to develop a sports team for the college. A big thank you to Mr. Jayant Satgahare and his team in helping us in this endeavour.

We gave a warm welcome to the new students of first year and second year with a Fresher's party. Lumiere glittered with the zesty dances and songs by all the students. The students presented a splendid fashion show too. The cultural and sports tempo continued with active participation in MET Utsav and intercollegiate Rx festival. Our students won the first place at the Robotics competition by presenting models on the futuristic developments in the pharma world. They also won in several sports events. This year the students won several events at Rx too. The students presented an energetic folk dance. The feather in the cap was bagging the first prize for the Rx fashion show. The graduates were awarded for their efforts at the Convocation and the achievers were rewarded at the formal function. Saying goodbye is always difficult. A memorable farewell was organised for the final year students.

Behind any activity is always a lot of hard work and support. We would like to thank our trustees, director, principal, teaching and nonteaching staff of MET for their support and encouragement.

Last but not the least we would like to thank the force carrying our cultural carriage forward, our asset and our pride: our council and all the students. Without their relentless hard work and enthusiasm this duty would have become a task. Our heartfelt thanks to them for making this journey an enjoyable and memorable one.

'Aim for the moon, but in your way there don't forget to dance with the stars and shine as bright as the sun.' ~ Tilicia Haridat

As we bid adieu, we can say that not only did we dance with the stars but we even reached the moon!!!!

**Dr. Vijaya Patil & Dr. Vaishali Dixit**

## Council Calls

"Individually, we are one drop. Together, we are an ocean." – Ryunosuke Satoro

Teamwork has often been described as one plus one equals three. On teams, people can work together and accomplish much more than they could by themselves. It's not about "too many cooks spoil the broth" but rather a combination of ideas, skills, innovations, helpfulness and leadership.

By keeping this in mind, the 2018-2019 council accomplished a fantastic year with great enthusiasm and hard work. It was not only a path of happy memories but also a trail of learning and experiencing challenges.

We are extremely thankful to our Cultural in-charge teachers, Dr. Vaishali Dixit and Dr. Vijaya Patil as well as Dr. Abha Doshi and Dr. U.B.Hadkar for their great support and needful guidance towards all the events.

Lastly we conclude with a quote, "Talent wins games, but teamwork and intelligence win championships." --Michael Jordan.

Au revoir !

**The Student Council**

# The Student Council

## General Secretaries:

Mr. Vaidik Vora  
Ms. Hiral Tanna

## Cultural Secretaries:

Mr. Siddesh Kelkar  
Mr. Jayesh Kumavat

## Editors:

Ms. Vaishnavi Kapileshwari  
Ms. Isha Sawant  
Ms. Nidhi Kate  
Ms. Deann Dias

## Sports Secretaries:

Mr. Abhishek Mishra  
Mr. Tushar Pitale

## Treasurers:

Mr. Sushmit Shetty  
Ms. Jenisha Shah

## Class Representatives:

### First Year B.Pharm:

Ms. Rajvi Shah  
Ms. Akanksha Acharya  
Ms. Kruti Pathak

### Second Year B.Pharm:

Mr. Shubham Munde  
Mr. Sandesh Gupta  
Ms. Mrunali Rane

### Third Year B.Pharm:

Ms. Ravina Kajare  
Mr. Shreyas Singh  
Ms. Saili Jagdale

### Final Year B.Pharm:

Ms. Siddhi Chalke  
Mr. Amitabh Nachar  
Ms. Komal Sawate

## Health Secretaries:

Ms. Mahima Raul  
Ms. Shrushti Bhamble



**First row:** (L-R) Ms. Saili Jagdale, Mr. Jayesh Kumavat, Ms. Mrunali Rane, Dr. Vaishali Dixit, Dr. Abha Doshi, Dr. U.B. Hadkar, Dr. Vijaya Patil, Ms. Kruti Pathak, Mr. Pradeep Jadhav, Mr. Yuvraj Thakre

**Second row:** (L-R) Mr. Shubham Munde, Ms. Shrushti Bhamble, Ms. Mahima Raul, Mr. Sandesh Gupta, Mr. Siddesh Kelkar, Ms. Hiral Tanna, Mr. Vaidik Vora, Mr. Shreyas Singh, Ms. Jenisha Shah, Mr. Sushmit Shetty, Ms. Raveena Kajare

**Third row:** (L-R) Mr. Tushar Pitale, Ms. Akanksha Acharya, Ms. Rajvi Shah, Ms. Nidhi Kate, Ms. Vaishnavi Kapileshwari, Ms. Isha Sawant, Ms. Deann Dias, Mr. Abhishek Mishra, Ms. Siddhi Chalke, Mr. Amitabh Nachar

# IPA Address

We live in an era which starves continually to excel in all fields. IPA-MSB-SF has provided a platform for pharmacy students all across Maharashtra to prove their mettle in every field by conducting Rx-Sports, Rx-Techfest and Rx-Culturals. This year started successfully with Hepathon where students from different pharmacy colleges participated in the 'Walk for Liver', raising awareness for the same. Pharmacy students got to acquaint themselves with the current pharma world by the divergent educational seminars conducted this year. Sport events were a treat to watch and students were able to display their skills outside the walls of the laboratories. This year with 44 cultural events organized, the enthusiasm of Rx participants was on a peak. It was a fruitful experience for MET where they proudly grabbed the trophy in Fashion show and acquired triumph in many different events! Last but not the least, Rx Eras 2K19 definitely raised the bar higher.

## Core Council Members

Mr. Ayush Bhandari- Joint Sports Committee & Joint Executive Officer

Mr. Sahjesh Soni- Joint Public Health Officer

Mr. Ganraj Vajale- Joint Pharmacy Education Officer

## Cell Members

Ms. Dishita Mehta- Public Relation Officer

Mr. Adil Surya- Cultural Committee

Ms. Yukta Dichwalkar- Student Exchange Officer

Ms. Aaliya Khan- Finance Committee

Ms. Zil Shah- Editorial Committee

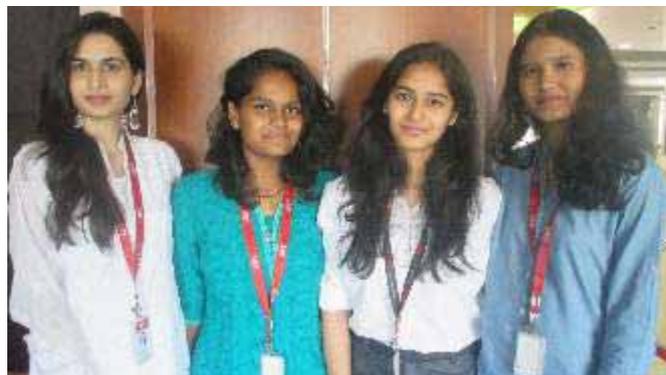


**First Row:** (L-R) Mr. Adil Surya, Dr. Vaishali Dixit, Dr. Abha Doshi, Dr.U.B.Hadkar,  
Dr. Vijaya Patil, Mr. Ayush Bhandari

**Second Row:** (L-R) Ms. Yukta Dichwalkar, Mr. Sahjesh Soni, Mr. Ganraj Vajale, Ms. Aaliya Khan,  
Ms. Zil Shah, Ms. Dishita Mehta

# Editors View

As we take a look back and celebrate yet another brilliant year that was well spent at the MET Institute of Pharmacy. Inspired by the classic MET tagline “Innovating sharper minds”, the editorial committee of the year 2018 -2019 is proud to publish “The Nest” as our annual magazine. The excellence of this Institution has never failed in generating independent and innovative minds. And hence the theme of this year's Nest magazine, “Pharmovations” clearly elucidates “Pharmaceutical Innovations”.



We attempt to shed a light on the many milestones that the Pharmaceutical Industries have accomplished over the recent years, giving birth to impossible creations and modifications. And although the Pharmacy community is still climbing it's Everest of possibilities, many original ideas have been transformed into innovations. These have significantly boosted the quality and safety of human health.

But even as we take quick steps towards a modern world, nothing contradicts the old yet true saying of, “Where there is a will, there is a way”. Keeping this well known proverb in heed, there is no stopping the production of new technologies and services that exceed even the existing requirements of the society.

And on this note we wish to extend a heartfelt gratitude, towards everyone who has contributed in providing the blocks of knowledge and opinions to help us build this magazine.

**Ms. Vaishnavi Kapileshwari, Ms. Isha Sawant, Ms. Nidhi Kate, Ms. Deann Dias**

# Campus News - IOPIan's Event Coverage

MET IOP has already established itself as one of the best pharmacy colleges in India as well as abroad. It perfectly exemplifies the words of MAHATMA GANDHI that education should not only enhance the academic knowledge but also cater to the all-round development of an individual. IOP family celebrates various events and conducts different seminars to mould and nurture us in every aspect of life! So, here's a glimpse....

## MET Episodes

### AASHADHI EKADASHI

The 11<sup>th</sup> Lunar day of the Hindu calendar month Aashad is celebrated as Aashadhi Ekadashi. The holy day is of special significance to Vaishnavas, followers of the Hindu protector god, Lord Vitthal. This year, Aashadhi Ekadashi was celebrated on Monday, 23<sup>rd</sup> July 2018. Our cultural activities commenced on this pious day with a lot of zeal. A Dindi (procession) was carried out with exuberance by the students, teachers as well as the non-teaching staff. All the students showed enthusiastic participation by playing lezim, singing devotional songs and bhajans. The Prasad was relished by all the students. Thus, we started the year with the blessings of Lord Vitthal.

(Held on: 23/7/18)



### HOSPITAL VISIT

Dr. L.H. Hiranandani Hospital conducted a seminar on 'Lifestyle changes important in our lives' which was attended by the students of MET. Dr. Aparna Iyer, the consultant pulmonologist, commenced the seminar by throwing light on 'Problems related to Smoking' and aimed at spreading awareness to the budding young minds. She discussed the common adverse effects of smoking which included diseases like chronic bronchitis, myocardial infarction, systemic atherosclerosis, emphysema, larynx cancer and more. Tobacco is a certified poison, and hence it shouldn't be inhaled. She projected that smoking harms nearly every organ of the body and damages the various body systems. There are methods by which it can be diagnosed early, like the spirometry, measuring the capacity of lungs, the flow rate of the lungs and more. However, smoking can persist for about 15 years in the lungs, even after the person has quit the process. Several diagnostic tests are used to determine the lung capacity, i.e. lipid profile, homocysteine levels, complete blood count, LDCT chest, Arterial blood gas levels, etc. She spread a strong message that smoking is deadly and hence prevention is better than cure. She was succeeded by Dr. Irfan Khan, the consultant interventional cardiologist, who discussed the diverse effects of nicotine on the cardiovascular system. Nicotine is a major contributor to smoking addiction. It promotes the formation of platelets and is majorly responsible for deposition and blood clots in the arteries and veins. The seminar later proceeded with Dr. Vandana, who demonstrated several yoga practices which can improve our health and increase our metabolism. Benefits of Kapalbhathi Pranayama were discussed and many of the yoga practices were portrayed with the help of a student volunteer. To make the message bolder, two of the patients who quit smoking shared their experiences on the same and gave their views on how smoking nearly made them devoid of other positive challenges in life and how much they were missing on things that really mattered. The seminar was then concluded with refreshments.

(Held on Date: 28/7/18)



# Campus News - IOPIan's Event Coverage

## SEMINAR ON INVESTMENT BANKING

A seminar on investment banking was held by Garima Kumar financial consultant Lotus Knowel wealth on 6<sup>th</sup> of August for the students of third year and final year.

The seminar focused on introducing the young minds to the opportunities granted by investment banking. For a student to have the knowledge to cleverly use their money and time is of essence. The students were briefed on different types of monetary investments such as mutual funds, fixed deposits, bonds, stocks, equities, real estate, gold/silver, etc. Primary as well as secondary markets were explained in detail to the students. They were made aware that smart investment is more important than the quantum of income.

They gave an insight of shares and bonds. The students were explained the role of an investment banker who provide help to their clients in raising money in capital markets by issuing in debts and selling of equity shares of companies. We gained a substance of information about the transparency in the interactions carried out between an investor and the financial broker through common sharing medium of e- banking. It was an interactive session where the students were informed about the risks as well as guidelines that are required to be assessed while making an investment.

When making an investment of any kind the investor must be cognizant about all the factors that are involved in the process. Every individual's investment need is well understood by a financial advisor.

(Held on Date: 6/8/18)

## BLOOD DONATION CAMP

Keeping up with the continuous endeavor MET IOP hosted a blood donation camp on 23<sup>rd</sup> August 2018 in association with NGO SHRIMAD RAJCHANDRA LOVE AND CARE and RAHEJA BLOOD BANK. A number of individuals participated in this noble and life-saving act. About 60 bottles of blood was collected. The success of this camp was possible due to unparalleled support of students, teaching and nonteaching staff members.



## ROAD SAFETY PROGRAMME

Road incidents and fatalities are tragically common occurrences in some of the countries. To help reduce road accidents and raise awareness, Mr. Sanjaykumar Gupta conducted a road safety programme for the students of MET. He informed us about the various traffic rules that must be adhered to, and helpline numbers that must be utilized in case of accidents. The incidence of road accidents happening in India is increasing every year, and most of the victims are teenagers. The former is due to lack of caution and irresponsible conduct of the people in this age group. Use of cell phones while driving a car is prohibited in many countries as it increases the chances of accidents.

For one's safety, following the traffic rules is mandatory. The session was concluded with an oath to obey the traffic rules.

(Held on Date: 23/8/18)



## DRUG ADDICTION

On 13<sup>th</sup> December, a seminar on drug addiction was held for the students of third and final year. The speaker Dr. Shanaz Tejani Butt has done her Ph.D in pharmaceutical chemistry. She addressed the basic signs and consequences of drug addiction and its drug abuse. She gave in depth knowledge about the effects of substance abuse, alcohol and smoking. She held an interactive session and entertained student participation.

(Held on: 13/12/18)

# Campus News - IOPIan's Event Coverage

## OLD AGE HOME VISIT

It is often said that old age brings an abundance of wisdom and knowledge. Experience is the best teacher and the more experience as an individual gains, the more insight he or she sheds on the complicated world. On the other hand, a person's youth is full of new environment, persistent stubbornness and intense curiosity.

This curiosity brought us to 'St. Anthony's Home for the Aged', an old age home at Bandra. The visit was held on 4th of September, 2018. Welcomed by their warm smiles, the motive to entertain them got a huge push forward. The students performed songs. Mini games were played, with a good amount of participation from them. Their enthusiasm matched ours. Lastly, everybody sang 'Oh Wonderful Love', praising the God. The event became a great success due to their positivity and encouragement.

(Held on Date: 4/9/18)



## TEACHER'S DAY

According to the words of Khalil Gibran "The teacher who is indeed wise does not bid you to enter the house of his wisdom but rather leads you to the threshold of your mind."

Teachers and mentors form the core of existence. They play a big role in building the character of students. They enrich the quality of education and tirelessly work towards making it even better. Hence they are a perennial source of inspiration and motivation. They endow us with knowledge, believe in us and make us pursue our dreams. Teachers' Day is the special day when teachers are appreciated and honored for their remarkable contributions. The students of MET IOP expressed their gratitude by cutting the cake for teachers and by making cards filled with messages for them.

(Held on Date: 6/9/2018)

## GARBA NIGHT

Navratri- A festival of colour, action, music and togetherness was celebrated in our college on 12th October. Students dressed in traditional look, matched the beats of the music with high energy. Later the students, in their own groups danced to the traditional beats. Everyone enthusiastically participated in the Garba celebration. The celebration turned out to be an absolute delight, everybody having their bit of fun.

(Held on Date: 12/10/2018)



## PLANTATION DRIVE

While tree scarcity and deforestation are always the consistent issues of discussions and debates in this cluster of concrete jungle called Mumbai city, MET institute of Pharmacy held a plantation drive. Hence on the 19th of October numerous Saplings were planted by the hands of the fellow staff members and students, in this interesting approach towards a greener city. This took place within the premises of the MET campus, and the students captured these memories in photos. The main goal of this drive was to kindle a feeling of responsibility towards our environment, our home. And this noble activity did just that by helping all to focus on the irreplaceability of trees, as our life givers. Overall the drive hugely succeeded in exhibiting what the tiny planted saplings symbolized- All bigger changes begin with smaller steps.

(Held on Date: 19/10/18)



# Campus News - IOPIan's Event Coverage

## PHARMACOGNOSY FIELD VISIT

The students of first year visited a flower exhibition by 'National Society of Friends of the Trees' hosted at Ruparel College in Matunga on 9th February 2019. The purpose of this exhibition was to introduce the students and the plant enthusiasts, to exquisite floral arrangements, vertical gardens, orchids, terrariums, vegetables and their hybrids. The plants were grown and maintained by various departments such as the Central Railway, Western Railway, Maharashtra Nature Park, etc. The highlight of the exhibition was the Bonsai section and a walk through the medicinal herb garden. We often fail to realize the amount of time and effort that goes into raising a fully grown tree, barely the size of a bush; but the beautiful way in which these Bonsai trees were showcased, astounded us all. Mrs. Vrushali Keer motivated the class to visit the medicinal garden and the whole walk proved to be insightful. Altogether it was an informative and memorable experience.

(Held on: 09/02/19)



## NATIONAL SEMINAR ON COMPLICATED LIFESTYLE AND LIFE STYLE COMPLICATIONS

In recent decades, lifestyle as an important factor of health, is of great interest for researchers. According to WHO, 60% of related factors to individual health and quality of life are correlated to the lifestyle. Exquisite sessions on scientific knowledge were delivered by eloquent and highly dignified speakers. The seminar was held on 14<sup>th</sup> and 15<sup>th</sup> of December. It was followed by poster presentation competition.

The sessions commenced with Dr. Pradip Gadge a diabetologist and endocrinologist, who is established at Diabetes center in Borivali. He introduced students to the life style changes that have caused increase in the number of diabetic patients. He briefed them about the simple modifications we can bring about in our daily routines to live a healthy life.

Dr. Deepa Valame was another great speaker who addressed the increasing noise related problems faced not only by the geriatric class of people but also the younger generations. She is an assistant professor at Audiology and Speech Therapy TNMC and BYL Nair Hospital in Mumbai. She emphasized on the subject of increase in hearing decibels that have lead to degenerative effect on the hearing of the youngsters due to use of earphones.

'Laughter is the best medicine', it was a delight to listen to Dr Tushar Shah the way he enraptured his audience with his humorous and satirical poetry and quizzes. He is a General Physician by profession practicing at Criticare Multispeciality Hospital and Research Center in Juhu. He enlightened the students with medical knowledge in an innovative and enjoyable manner.

On 15<sup>th</sup> of December the day began with soothing, peaceful and melodious music therapy delivered by renowned speaker Mr. Roshan Mansukhani. He is a music therapist and counselor who taught the miraculous calming power of sound and music.

Ms. Anna Khan shed light on the increasing instances of panic attack, anxiety and how to diagnose people suffering from it. She informed varied problems that anxious and panic driven people suffer from and how to tackle it. She also spoke of depression and various methods to counter it.

Dr. Mukesh Gupta yet another brilliant speaker conducted an interactive session. He is a well known gynecologist and obstetrician; he is also a psychological counselor. He countered the most important issue that every second person battles, anger. He explained in depths the reasons for anger and the way people handle it. He guided the students through the process of managing and defeating anger from out life.

(Held on: 14-15/12/18)

# Campus News - IOPIan's Event Coverage

Two Days National Seminar on  
 “Complicated Lifestyle ↔ Lifestyle Complications” organized by  
 MET Institute of Pharmacy (Degree)

14-15 December 2018

## Poster Winners

Third Year		
First Prize Poster 3	Fad Diets: Which one for me?	Ms.Gaikwad Chetna Kisan Ms.Singh Rashmi Dinesh Ms.Pokle Maithili Sunil Mr.Salgaonkar Shreyas Prasad Mr.Shetty Sushmit Niranjan
Second Prize Poster 11	Stress management	Mr.Revdekar Amey Hemant Ms.Kalandare Simran Shashikant Ms.Singh Aabha Vijayendra Mr.Vora Vaidik Vinod
Third Prize Poster 5	Mobile deaddiction	Mr. Jankar Yogesh Mr. Mane Pankaj Mr.Khot Rushabh Rohit Mr.Pendharkar Kaustubh Uday Ms.Desai Mayuri Dattatray
Third Prize Poster 7	Home diagnostic and monitoring devices for diabetes	Mr.Soni Sahjesh Shailesh Mr.Sargar Mahesh Sangappa Mr.Mishra Abhishek Nagendra Ms. Karbhari Anagha A. Ms.Kale Bhagyashree Abhay
Final Year		
First Prize Poster 16	Earphone culture and health	Mr.Dhariwal Nayan S. Ms. Gaikwad Divyata D. Mr. Jain Jay A. Ms.Rathod Grishma B. Mr. Seth Shivam S. Mr. Sumbe Shubham U.
Second Prize Poster 21	Bulimia nervosa, Anorexia	Ms. Doshi Shruti M. Ms. Gaikwad Shweta R. Mr. Luniya Pranay J. Ms. Sawant Shruti S. Ms. Surti Shifa A.
Third Prize Poster 20	Insomnia- a growing disorder	Ms. Kadam Aarti Ms. Keny Ekta S. Ms Kharade Snehal Ms. Pipare Dhanashree Ms. Pukale Nikita S. Mr. Shaikh Fardeen

# Campus News - IOPIan's Event Coverage

## ALUMNI MEET

We part ways at the farewell only with a promise to come back to revive old memories. This year MET IOP held alumni meet on 5<sup>th</sup> of January 2019. Even though we don't need an event to keep in touch, we take this opportunity to spend time with our beloved Alumni. Students graduated from our college have attained success in every field and they come back to share the wealth of their experiences with us budding pharmacists. This year we had the opportunity to meet some very old Alumni who told us tricks of the trade and how they build their career. Some of them gave us an insight of what we should be prepared for, what the current market situation is, what is expected from us and how we can make the best of our resources at MET.

The event was organized with a purpose to strengthen the bond amongst Metizans who stick together through the thick and thin of life and grow together helping each other out.

(Held on: 5/1/19)

## REPUBLIC DAY

India is not a country, nor a nation. It is a subcontinent of nationalities. Just as on the 26<sup>th</sup> of January 2019, all united in the campus of MET Institute to celebrate India's 70<sup>th</sup> Republic day. The students as well as the teaching and non-teaching staff wore the tri colors of the flag, while preparing an exquisite Rangoli of the same hues. The programme commenced with hoisting of National flag by the chief guest commander Major Pravin Deshpande, Ex Indian Navy Commander and Pankaj Bhujbal, Trustee – MET followed by the National anthem. A bouquet of the cultural performances including mesmerizing songs, musical skit and thought provoking speeches were presented by students and staff as a remembrance of the sacrifices of Indian Armed Forces. At the end everybody left with a sense of duty towards the nation.

(Held on Date: 26/01/19)

## FRESHER'S PARTY

The welcoming of the newcomers this year could not have been more remarkable. On the 7<sup>th</sup> of September 2019, the MET Pharmacy department celebrated with ebullience - Fresher's party. And to add a dash of uniqueness, the theme -"Angels and Demons" was arranged. The compliments and admiration of the first years made the hard work and efforts of the cultural team, involving both the student council and decoration team, the teaching and non-teaching cultural in-charges worth. The hall filled with dramatic props, charming decorations and music, looked the most alluring.

Our beloved principal, Dr. Abha Doshi and graced everyone with their wise words. The crowd roared in excitement as the hearty singing performances began, and the cheers persisted throughout the endless array of zestful dance pieces put ahead by all classes of degree as well as Diploma. The biggest highlight of the event was the selection of Mr. and Miss Fresher's which was done through A Talent hunt round, in which the First years surprised everyone with their singing, dancing and other skills in the time given. However Ved Shetty and Ankita Kanhere bagged the title and received the crown. All the students and the staff both unleashed their fun side on the upbeat unending DJ songs. Thus a heartfelt and beautiful welcome was given to the newbies.



# Days to Cherish

In the middle of juggling tasks, beating deadlines and limitless lectures, MET organized a unique approach to break the current monotony. A series of fun and diversely themed days were decided, giving the students of the Pharmacy department a perfect chance to give a free rein to the creative sides of their brain. Childhood memories and imaginations were brought to life on Character day, and students were dressed as many a personalities as superheroes and villains from D.C and Marvel. To represent Indian culture in the best way possible, a traditional day was set on which the girls and boys looked elegant in their sarees and Kurtis correspondingly. Even though you are growing up, never stop having fun... staying true to this saying a miss-match day was celebrated on which jeans were replaced by Lungis. The college corridor was jam-packed with students clicking pictures while flaunting on their vintage styles and old-school attires. This effort of imbibing an atmosphere of enthusiasm and gusto was a huge hit.



# Days to Cherish



# Rx ERAS

The students of MET IOP actively participated in various events of the RX ERA 2018-2019. The students won a lot number of prizes and made the college proud. This platform gave students the opportunity to showcase their talents, on such a big platform.



## RX CULTURAL

### NUKKAD NATAK

- 1 Mitali Kamat
- 2 Riya Patil
- 3 Akanksha Acharya
- 4 Siddesh Kelkar
- 5 Nidhi Kate
- 6 Shubham Munde
- 7 Nishant Mhatre
- 8 Gayatri Bhandarkar
- 9 Mrunali Rane
- 10 Sandesh Gupta
- 11 Akanksha Naik
- 12 Divya Rajaram
- 13 Tushar Pitale
- 14 Rajvi Shah
- 15 Muddassir Pathan

### TILE PAINTING

- 1 Isha Sawant
- 2 Piyush Mahajan

### MATCH THE CORD

- 1 Ritesh Oza
- 2 Prashant Bhatt

### MONO ACTING

- 1 Ankita Kanhere

### WHAT'S IN YOUR VOICE

- 1 Kruti Pathak

### CONSPIRACY THEORY

- 1 Maithili Pokle

### MOBILE COVER DECOR

- 1 Simran Pingale
- 2 Samreen Khan

### PHOTOGRAPHY

- 1 Yogesh Jankar

### PHARMACY GOT TALENT

- 1 Ved Shetty

### FASHION SHOW

- 1 Ekta Ranade
- 2 Jenisha Shah
- 3 Zil Shah
- 4 Riya Shah
- 5 Vibhuti Gavankar
- 6 Akanksha Naik
- 7 Nishant Mhatre
- 8 Siddesh Kelkar
- 9 Adil Surya
- 10 Ganraj Vajale
- 11 Rahul Chaurasia
- 12 Nikhil Chaubey
- 13 Nikhil Gupta
- 14 Shreyas Singh
- 15 Vaidik Vora
- 16 Jil Shah
- 17 Dishita Mehta
- 18 Rashmi Singh
- 19 Saili Jagdale

### RX SPORTS (TT)

- 1 Sumit Gahtori

# Luminaries - Meticulous Achievers

## ACADEMICS

### FIRST YEAR

1. Shrushti Bhamble
2. Madhura Mulkutkar
3. Anushka Sharma

### SECOND YEAR

1. Preetikumari Chaudhary
2. Saloni Chavan
3. Maithili Pokle

### THIRD YEAR

1. Rajashree Pawar
2. Kajal Gupta
3. Jeenal Jain

### FINAL YEAR

1. Tanvi Kamat
2. Rhema Khairnar
3. Saylee Korgaonkar

### CO- CURRICULAR ROBOTICS

1. Kaustubh Pendharkar
2. Maithili Pokle
3. Purvi Pokharna
4. Sahjesh Soni
5. Pratik Jain
6. Isha Sawant
7. Vibhuti Gavankar
8. Nidhi Kate
9. Piyush Mahajan
10. Nishant Mhatre
11. Siddesh Kelkar
12. Prashant Bhatt
13. Pramod Pawar

## GPAT 2019 Qualified Students

Name	Percentile	All India Rank
Kajal Gupta	99.66	138
Siddhi Naik	99.57	175
Rajashree Pawar	99.03	393
Girija Pawge	98.81	481
Shrushti Doshi	98.24	714
Aishwarya Navgire	96.03	1612
Ekta Keny	95.71	1742
Siddhi Kanade	92.61	3003

# Lumiere

As for every student of Pharmacy, there comes a time each year when the long lectures and assignment deadlines are replaced with festive preparations and exciting events. Lumiere is treated as nothing less than an opportunity gifted by the MET Institute, to showcase the many talents the students have.

The festival was celebrated on 8th of September- the day following a themed Fresher's party, where the new comers were welcomed with open arms. This environment encouraged the first years to participate eagerly, for the Lumiere events next day.

A series of cultural events followed in this festive time, involving the Movie event wherein the hidden acting talents of our fellow Metians came out to play. Applause and cheers were unending as they enacted many a scenes from famous bollywood movies. Not forgetting the Antakshari event which brought more fun by four interesting rounds. A hearty participation by Metians of Degree as well as Diploma, created an atmosphere of integrity.

The informal culture night began with the lamp lightening ceremony and was inaugurated by Dr. U.B.Hadkar (Director), Dr. Abha Doshi (Principal) and Dr.S.D.Bhosle (Principal of Diploma Pharmacy). Another highlight of Lumiere was a cartoon inspired fashion show which with its beautiful display of Princesses and characters was simply breathtaking. The night was graced by dance performances from each class but the performance by the last year (Degree) class stole the stage. The event concluded with DJ and a promise of yet another enthusiastic year.

## LUMIERE EVENTS

### SINGING

Guddi Waghare (S.Y.B.PHARM)	1st
Pooja Kairamkonda (F.Y.B.PHARM)	2nd
Nidhi Kate (S.Y.B.PHARM)	3rd

### MOVIE EVENT

#### 1st: Final Year

Amitabh Nachar  
Adhyay Pandit  
Abhishek Pakhare  
Mahima Mehta  
Shubham Sumbe  
Shivam Seth  
Makarand Pathre  
Sejal Nikam  
Ekta Keny

#### 2nd: Third Year

Mayuri Desai  
Dishita Mehta  
Sushmit Shetty  
Nikhil Chaubey  
Vaidik Vora  
Sahjesh Soni  
Shreyas Singh  
Hitesh Vishwakarma  
Chetna Gaikwad

### ANTAKSHARI

#### 2nd: Second Year

Niddhi Kate  
Guddi Waghare  
Piyush Mahajan  
Deann Dias  
Yukta Dichwalkar

#### 3rd: Third Year

Vaishnavi Kapileshwari  
Sushmit Shetty  
Purvi Pokharna  
Chetna Gaikwad  
Komal Mohite

# Lumiere



<b>Teacher's Achievement</b>		
<b>Patent</b>	<b>Date</b>	<b>Authors</b>
Oral Patches for Aphthous Ulcer Patent No. 1103/MUM/2012	18-Feb-19	Dr. Abha Doshi Mrs. Sheeja G. Koliyote Mrs. Bhagyashri A. Joshi MET INSTITUTE OF PHARMACY (DEGREE)

<b>Publications by Faculty</b>	<b>Date</b>	<b>Name of Faculty</b>
Interfacial Tension between Water and Organic Liquid lighter than water using Capillary Rise Method. U.B.Hadkar, Asavari Hadkar, Asian Pharma Press Vol 9 Issue 1 2019	2019	Dr. U. B. Hadkar
Comparative Study of Kinetics of Saponification of Ethyl Acetate by pH Method and Titration Method. U.B.Hadkar, Asavari Hadkar, Asian Journal of Pharmaceutical Analysis, Vol 8 Issue 1 2018.	2018	Dr. U. B. Hadkar

<b>Presentation by Faculty</b>	<b>Date</b>	<b>Name of Faculty</b>
Poster presentaion at 70th IPC 2018 Titled 'One step green synthesis, characterization and in-vitro antioxidant activity of stem extract mediated gold nanoparticles from <i>Tinospora cordifolia</i> '	21-23 December 2018	Mrs.Sheeja.G.Koliyote

### Faculty as Resource Personnel

<b>As Speakers</b>	<b>Date</b>	<b>Name of Faculty</b>
Overview of the syllabus and semester question paper discussion	26-Oct-18	Ms. Vrushali Keer
<b>As Judges</b>	<b>Date</b>	<b>Name of Faculty</b>
Rx2018-19 Oral Presentations for Pharmacology	1 February 2019	Dr. Vaishali Dixit
2 days seminar in Tasgaonkar college of Pharmacy-poster presentation	22nd September 2018	Dr Sonali Naik

# Staff Activities

Celebrating Brilliance...

FDP/ Workshop/ Conferences/ Seminar Attended	Date	Name of Faculty
RUSA mentored ten day faculty development program in 'Clinical Data Management' at Institute of Chemical Technology, Department of Pharmaceutical Science and Technology	17-27 December 2018	Dr. Vaishali Dixit
Four days workshop on cellular and Molecular Biology from Gene cloning to Protein Expression and Localization	19-22 December 2018	Dr. Vijaya Patil
Industry Sponsored and ISTE Recognized one week FDP on "New Paradigm in Pharmaceutical Education and Research" organized by H. K. College of Pharmacy, Mumbai	26 November-1 December 2018	Dr. Rashmi Srivastava, Dr. Poonam Advani, Dr. Madhura Vaidya, Ms. Vrushali Keer
One day seminar cum workshop on "EUDRAGIT- A verstaile polymer for Oral Drug Delivery."	26-October 2018	Dr. Abha Doshi, Ms. Priyanka Joshi
Two days seminar cum workshop organised by VES college of Pharmacy on 'Nanopharmaceuticals : Maneuvering the Path from Processing to Characterization'	5-6 October 2018	Ms. Bhagyashri Joshi, Ms. Sheeja.G.Koliyote
Two days Seminar on "Challenges & Strategies in herbal Formulation.orgnized by H. K. College of Pharmacy, Mumbai	5-6 October 2018	Dr. Rashmi Srivastava, Ms. Vrushali Keer Ms. Priyanka Joshi
One day symposium on Menopause: A path to Bone and Muscle health Organized by Kasturba Health Society's Medical Research Centre at Mithibai College, Vile Parle	25-September 2018	Ms. Vrushali Keer, Ms. Priyanka Joshi
Three days workshop on Integrating Applied Bioinformatics in Undergraduate Life Science education	27-29th September 2018	Dr. Vijaya Patil
One day seminar on An insight to modern pharmaceutical analysis: From basic to applications organized by Dr. L. H. Hiranandani college of pharmacy, Ulhasnagar	22nd September 2018	Ms. Sindhu Menon
QIP course "NMR Spectroscopy for Pharma and Biotech Research" organized by organized by IIT Mumbai	13-17 May 2018	Dr. Madhura Vaidya, Ms. Vrushali Keer
Three day lecture series on 'Evidence based Medicine' at MET Institute of Pharmacy, Bandra	8-10 January 2018	Dr. Vaishali Dixit
One week FDP on 'Excipients:An Uncharted Roadmap towards Healthcare Technology' organized by SPPSPTM, SVKM's NMIMS, Mumbai	5-10 January 2018	Ms. Bhagyashri Joshi, Ms. Aushima Dasari
MET I CON: Two days International conference on innovations in Pharmaceutical technologies	16-Feb-18	Dr. U. B.Hadkar, Dr.Abha Doshi

# Co-curricular Activities

## AVISHKAR

This year on 15<sup>th</sup> of December, MET IOP represented our college at the AVISHKAR Competition with yet another great project. The projects were guided by Dr. Abha Doshi, Dr. Vaishali Dixit, Dr. Rashmi Srivastava, Mrs. Sheeja Koliyote. The students who presented these projects were Ms. Purvi Pokharna, Ms. Maithili Pokle, Mr. Nikhil Chaubey, Mr. Rushabh Khot and Mr. Sushmit Khatavkar, Ms. Nida Afzal, Ms. Vinita Luniya, Ms Rajshree Pawar, Ms. Sunaina Saha, Ms. Girija Pawge, Ms. Mrunal Sinkar.



## ROBOTICS

This year's MET UTSAV gave students an opportunity to showcase their innovativeness and smartness the competition- ROBOTICS. We are proud to announce that the students of MET IOP bagged the first prize. This gave a chance to show the blend between pharmacy and robotics to provide a better future. These projects gave idea about the upcoming dynamic future in medicinal and technical field.



## POSTER PRESENTATION

The VES college of Pharmacy Chembur had organized a poster presentation. Our students Sahjesh Soni, Hiral Tanna and Purvi Pokharna from T.Y.B.Pharm participated with the poster on nanoparticles for an ocular drug delivery pertaining to the theme of the event, under the guidance of our principal Dr. Abha Doshi. It was a great learning experience for the students.



The Tech Event Vortex conducted by ICT is a huge intercollege platform for Pharmacy students. Our students Sushmit Khatavkar, Purvi Pokharna, Rushabh Khot, Hiral Tanna, Sahjesh Soni and Ganraj Vajale of T.Y.B.Pharm represented our institute in the oral paper presentations with two different review papers under the guidance of our teachers, Dr. Vijaya Patil and Mrs. Bhagyashri Joshi. This platform has given them as well as MET a stand at intercollege level



## NEEDLELESS INJECTION

INJECTION.... The first emotion which this word evokes is fear. The title needleless injection suggest that the traditional definition of the injection has now received a modified perspective. After reading which I hope it will stimulate your serotonin and not amygdala. So as the name suggests, we are now actually introduced to injections without needles which are also known as jet injectors, jet gun injector, air gun, or pneumatic injector. They use a high-pressure narrow jet of the injection liquid instead of a hypodermic needle to penetrate the epidermis. They can also be used to drive medicaments into the muscle. The needle free injection technology is not only known to be beneficial for the pharmaceutical industry but also in developing world. It is found to be highly useful in mass immunization programmes, bypassing the chances of needle stick injuries and avoiding other complications including those arising due to multiple use of single needle.

Jet injectors are found to be quite safe and effective for use and are known to reduce the drawbacks and injuries caused by use of needle. Their invention is as idiosyncratic/ aberrant as them. They were first published accidentally in the year 1937 by a diesel engine fuel injector. 1951 was a year of large scale immunization, The Commission on Immunization of the Armed Forces Epidemiological Board requested the Army Medical Service Graduate School to develop injection equipment specifically intended for rapid semiautomatic operation in large-scale immunization programs. This device was known as the multi-use nozzle jet injector (MUNJI). In 1961, the Department of the Army made multi-use nozzle jet injectors the standard for administering immunizations. In 2014, the U.S. Food and Drug Administration (FDA) approved the use of the PharmaJet Stratis 0.5ml, Needle-free Jet Injector for delivery of one particular flu vaccine and in 2017, David Fernandez Rivas developed a new type of laser-based jet injection.

Needle free injections use a jet of liquid instead of a syringe. To power this jet of liquid, compressed air or gas, either from a pressure hose from a large cylinder, or from a built-in gas cartridge, small cylinder, or spring is used. They can be single-dose or multi-dose jet injectors. So, for injectors to work, the power source has to be actuated by subsequently triggering a piston or plunger, which causes an instantaneous increase in pressure onto the liquid medicament. The pressure range is from 2,000 to 5,000 psi which is needed for the jet stream to penetrate skin. The liquid medicament is ejected through the nozzle at a velocity ranging from 100 to 200 meters per second. The jet stream penetrates the skin by eroding and fracturing of the skin and tissue. The liquid medicament after penetration disperses into surrounding tissue, cells and muscle. The absorption of the liquid medicament slows down the pressure of the jet stream and now the flow of jet stream changes from unidirectional to multidirectional. During this process a splash back phenomenon might be possible which was simply paraphrased by Voelker (1999) as, "Jet injection builds pressure in the skin that is greater than the pressure in the injector, causing a small backflow." After the administration of an injection the skin tends to can redden, bruise, or develop a wheal. It eventually goes away as the fluid is absorbed into the deeper tissue layers. The skin site is cleaned with alcohol in usual manner.

The Injection is prepared by using pressure lever and is held, then the dose is adjusted with the dose of nozzle. The filled nozzle is put into injection device. The jet injector gun or pen tightly against skin and aiming it towards the site.

Thus, the use of jet injectors have proved to be easy and safe for mankind. One of the major drawback associated with two piece system of injection was associated with pain which can be now ruled out. This technology is capable of delivering a wide spectrum of medicinal formulations into the body with the same bioequivalence and with more antigen dispersibility. These devices are very easy to use and don't require any expert supervision or handling. They are easy to store and dispose. These devices are suitable for delivery of drugs to some of the most sensitive parts of the body like cornea. They are efficient to administer intra-muscular, subcutaneous and intra-dermal injections. They have also overcome the risk of carrying contamination to subsequent subjects by use of single syringe for multiple times to multiple patients which indirectly increases the risk of spread of diseases. However, they have not completely overcome the use of needles. The users have to face few difficulties such as, higher startup costs and maintenance, requirement of infrastructure for exhaustible gas systems. Even though the disadvantages outnumber the advantages, one cannot be oblivious to the array of advantages offered by this system.

# Pharmovations

## Driven by need, powered by ideas

The use of jet injectors have shown a considerable rise through the years. Study forecasts that overall worldwide sales of needle-free injection devices will reach \$1.98 billion in 2020. The growth can be accredited to increasing life expectancy, biologics, and growing prevalence of chronic technological advancements. The global jet injector device market can be segmented based on product type, methods of injection, end-user, medication type and region. Key market players include Antares Pharma, Inc. (U.S.), Endo International plc (U.S.), Pharma Jet (U.S), Bioject Medical Technologies Inc. (U.S), Medical International Technology, Inc. (U.S), INJEX Pharma AG (Germany), National Medical Products Inc. (U.S.), Valeritas, Inc. (U.S.), European Pharma Group (Netherlands), PenJet Corporation (U.S), Crossject SA (France). This shows the dominance of North America on the market. Though in India the sales are not much, jet injectors are mainly used by diabetic patients as it serves the purpose of ease of daily administration at home without the need of assistance. According to the research conducted, in India Johnson and Johnson is the emerging company in market of jet injectors. Thus, the increasing use of NFIT will increase patient co-operation and compliance and therefore the efficiency of medical care. So, I hope the rising market of needless injections, eradicates trypanophobia and proves to be a boon for humanity.

**Sayali Ayare**  
**T. Y. B. Pharm**

## E-PHARMACY

In this digital life and technology saturated world, using the latest technology has proved to be very fruitful for the pharmaceutical industry. Is it possible to relate technology with pharmacy? The concept of eHealth crescendoing is the answer. eHealth has helped in enhancing the health of citizens by improving the efficiency and productivity in healthcare. Delivery of medications, economic and social value of health service providers, and peer-to-peer or institution-to-institution data communication between patients and/or healthcare professionals have also greatly improved.

Prompted by eHealth, pharmaceutical labs are devising new solutions to rise to the challenges of digital technology. Initially the digital transformation involved creation of simple tools such as websites for specific conditions and informative mobile apps intended for patients. It has helped industries to retain some markets and expand into others. Developed by labs and start-ups, these new apps are changing the landscape and the approach of pharmaceutical industry to eHealth.

The current trend is about working on open innovation that is, creating an inclusive structure so that they don't focus exclusively on the classic players in health, but on what the start-ups can bring to the table. Sanofi, a French multinational company and the world's 5<sup>th</sup> largest by prescription sales is getting involved in eHealth innovation centers. They are working with incubators of young digital companies. The company Roche is collaborating with the community laboratory La Paillasse on participatory epidemiology research projects. Labs are increasingly investing concurrently in areas of co-creation by organizing E-Health Hackathons. This involves pairing of innovators with healthcare experts to build solutions to front-line healthcare problems through the use of technology.

### Big pharma, Big data:

Many laboratories are forming partnerships with 'GAFA' – Google, Apple, Facebook, Amazon as a step towards collecting enormous amounts of data. Usage of cell phones for the operation of day to day work has been surging, and thus by the use of eHealth, local pharmacies are able to keep up. The use of digital refills, text reminders and email has helped to keep the patients loyal to the pharmacy.

### For Pharmacists:

The new profile of the clinical pharmacist is taking shape. They are more connected and better integrated within a professional network supported by digital technology.

An opinion shared by Jean-Luc Fournival, President of French National Union of Pharmacies (UNPF) states, "The pharmacist is one of the key elements in the medication value chain, its starts with the manufacturer, goes via the pharmacist and ends up with the patient. With data, the pharmacist's role will undoubtedly gain value."

**Divya Rajaram**  
**S.Y.B. Pharm**

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## SCALP COOLING: A RELIEF FROM CHEMOTHERAPY HAIR LOSS

Cancer is a venom for the human race. Chemotherapy is the most common treatment for cancer. But every rose comes with its thorns; chemotherapy comes with a hoard of side effects. One of the prominent adverse effects is the hair loss. It is the cause of lowering of self-esteem for many cancer patients, especially females. What if we get a remedy for this burdensome problem? Wouldn't the world be a better place for the cancer patients? This very empathy for the suffering patients led to the invention of scalp cooling technique to reduce the hair loss.

The basic principle of this method is narrowing of blood vessels beneath the skin of the scalp thereby reducing the amount of chemotherapy medicines reaching the hair follicles. The cold also decreases the activity of the hair follicles, which slows down the mitosis and makes the follicles less vulnerable to cancer drugs. Scalp cooling is done by cold caps and scalp cooling systems. The former consists of ice packs. They are kept in a special freezer before they are worn. They thaw out during the session hence have to be replaced after every 30 minutes. Some renowned brands for cold caps are Chemo cold caps and Elasto gel. In the latter, the cap is attached to a small refrigeration machine that circulates coolants, so the cap has to be fitted only once and doesn't need to be changed during the chemotherapy session. Some examples for scalp cooling systems are Paxman systems and Dignicap systems.

A procedure of scalp cooling device trials is an essential step in the usage of this technology. Step 1 is the questionnaire rounds of the volunteered patients. Not all types of cancer patients can utilize the procedure of scalp cooling. Tumor characteristics and severity of hair loss is taken into account. Only the eligible ones are selected.

Some precautions should be taken by patients taking this procedure like no colouring of hair, no blow drying, shampoo only third day with cool water and gentle combing of hair. There are some patient reviews. One patient reported that in her first use of the procedure, it was quite uncomfortable but eventually it was no problem and her hair fall reduced a lot. Another patient said that she experienced a very bad headache due to the cold emanating from the cap. Overall the reviews gave a statistics of 50 - 65% of success rates of scalp cooling systems.

Scalp cooling systems have proved to be a boon to many cancer patients and a major support system in maintaining their social image and confidence

Purvi Pokharna  
T.Y.B.Pharm

## HYBRID CLOSED-LOOP INSULIN DRUG DELIVERY SYSTEM

Imagine for a moment that you are diagnosed with Type 1 Diabetes Mellitus (T1DM) and the insulin you take could jeopardise your health if you get the dose just a little bit wrong. Imagine that the dose you took in the morning which worked, doesn't work now and imagine that you have to worry about this every single moment of your life from the day you were diagnosed. You have to live with fear your entire life. Thanks to the advances in medical science it's no longer a death sentence like it used to be in the earlier days but it's still a life sentence which restricts the victims from having a normal life. People with Type 1 Diabetes Mellitus have to constantly check their glucose level 10 to 12 times a day and then inject a calculated dose of insulin manually. This constantly cuts in their daily chores and prevents them from having a normal carefree life.

In the history of diabetes technology, every tool that's ever developed for diabetes has improved health and medical control of the diabetes. This however comes at the expense of increased burden on patients. It constantly asks people with diabetes to do more, think more, test more, and wear more. The new technology called Hybrid closed loop insulin delivery system helps improve the lifestyle of T1DM patients as well as increase control over it.

In 2016, FDA approved its first hybrid closed loop delivery system. These are also called as artificial pancreas as they replicate the function of pancreas. These are wearable systems which constantly monitor the glucose level using Continuous Glucose Monitor (CGM) and send a signal to the insulin pump which injects insulin subcutaneously in the body accordingly. There is a direct communication between CGM system and the pump. As it happens automatically

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'closed' term is used and because of the continuous cycle of feedback information the term 'loop' is used in the title of this system. This system uses a personalised model-predictive control algorithm to calculate the insulin dose. There are two types in which this device is attached to the body.

The first type has four components-CMG sensor, CGM receiver, CAD and insulin pump. The CGM sensor and the infusion site are inserted under the skin of the patient and the insulin pump is attached to the infusion site via a "tube". The CGM receiver displays the updated readings as graphs minute-by-minute. The CAD (Control Algorithm device) e.g. - smartphones, tablets or personal computers receive these readings from CGM receiver and calculates the dose using an algorithm. The CAD communicates with insulin pump implanted in the body worn via Bluetooth and that automatically administers the correct insulin dose. The CAD tells the patient how much insulin is being injected and if the system is working or not.

The second type has two components- disposable insulin pump (POD) and personal diabetes manager (PDM). The PDM is a hand-held, battery-powered remote controller for the POD (insulin pump). It has seven functional buttons, a back-lit liquid-crystal coloured display, and a blood glucose (BG) meter. The PDM provides audio alarms, alerts, and reminders related to insulin delivery, reservoir level, POD functioning, and battery life. The POD is a microprocessor-controlled device worn directly on the body. It delivers insulin based on the user's custom-programmed basal rates and bolus doses for up to 3 days according to patient's individual insulin needs. The POD is activated and controlled exclusively through use of the PDM. The POD and PDM interact wirelessly using secure, bidirectional radio frequency. Wireless interaction is only required to set a bolus delivery, change system settings, perform BG measurements, or change the POD. In operation mode and during basal delivery, no wireless connection is needed, so the PDM does not need to be near the POD. The POD sounds an alarm if any attention is needed.

The problem with this type of technology is that the glucose level in tissue fluid which is monitored by CGM doesn't change as quickly as blood glucose level and it takes some time for insulin injected in the subcutaneous fat to take effect. Thus the insulin effect always lags somewhat compared to the insulin that is made by normal functioning pancreas where changes in blood glucose level are sensed instantly and insulin is directly released into blood. If wrong (excess) dose of insulin gets injected it may result in hypoglycaemia which is very dangerous.

The safety and performance of hybrid closed loop systems were tested on adults as well as children. It was found that children with type 1 diabetes mellitus have increased sensitivity as compared to adolescents and adults and are at a higher risk of severe hypoglycaemia overnight. On 21 June 2018, FDA approved hybrid closed loop system for use in paediatric patients. There are few brands in market which sell hybrid closed loop insulin drug delivery system such as OmniPod, MiniMed 670G etc.

A newer approach to avoid hypoglycaemia caused due to this system is to control glucose level by releasing insulin as well as glucagon as the pancreas release insulin to lower glucose levels and release glucagon to raise glucose levels. This system has the potential to eliminate the need for carbohydrate counting before meals, which is required in hybrid closed loop drug delivery system.

This technology is new to the medical industry and more tests are being done to improve it. As of now this kind of system is available in the USA and to some extent in Canada and will take time to reach the underdeveloped and developing countries. One thing is for sure that this technology will create a paradigm shift in the way we think of Type 1 Diabetes Mellitus.

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### 3-D PRINTING

3D Printing or additive manufacturing, as many of us think, was not invented 5 years ago. In fact, it is already a production technology as it has been around for 3 decades. It first began in 1980s. It is a digital process that creates three dimensional objects, layer upon layer, using variety of polymers, metals and ceramics. Three dimensional printing technology (3DPT) relies on computer aided designs to achieve utmost flexibility, time saving, and exceptional manufacturing capability of pharmaceutical medicines. 3DP is gaining increasing attention in pharmaceutical formulation development as an effective strategy to overcome some challenges of conventional pharmaceutical unit operations. For instance, the conventional manufacturing unit operation involving milling, mixing, granulation and compression can result in disparate qualities of the final products with respect to drug loading , drug release, drug stability and pharmaceutical dosage form stability.

The efforts in developing 3DP in pharmaceutical product development resulted in a landmark FDA approval (August, 2015) of SPRITAM (Levetiracetam) tablets by Aprecia Pharmaceutical, USA. It is the only 3D printed drug which has FDA approval. They are used to treat epilepsy. SPRITAM is a porous tablet that rapidly dissolves with a single sip of liquid, which makes it easier for patients to swallow large doses and adhere to their prescribed regimen. On the manufacturing side, 3-D printing enables precise control of dose uniformity and density, allowing Aprecia to consistently fit a maximum-strength 1,000 mg dose inside of a single, easy-to-ingest pill. The process involves 3d prototyping of layer by layer fabrication to drug excipients to formulate into desired dosage form. It begins with making a virtual design using 3D modeling applications on computers. This soft copy of the design is sent to the 3D printer. The printer then with additional information of formulation formula and dosage form, 'prints' the dosage form.

Some advantages of 3D printing in pharmaceutical industry as well as health care:

- 1) Compared to conventional pharmaceutical product manufacturing process, 3DP offers a lot of attractive qualities, such as,
  - (a) high production rates due to its fast operating systems,
  - (b) ability to achieve high drug-loading with much desired precision and accuracy especially for potent drugs that are applied in small doses,
  - (c) reduction of material wastage which can save in the cost of production and
  - (d) amenability to broad types of pharmaceutical active ingredients including poorly water-soluble, peptides and proteins, as well as drug with narrow therapeutic windows.
- 2) Drugs can be tailor made/personalized according to one's need. Factors like Size, Shape, Dose, appearance and the rate of delivery can be customized according to requirement. For example, the tablet can be 'printed' in the shape of a cartoon, making it easy to administer to kids. Meanwhile, the tablet can be 'printed' having suitable sizes and doses which will make drug administration easier in aged patients as well as in infants.
- 3) 3D printed tissue models are used for pharmacological studies and new surgical techniques, leading to lesser surgical times and increasing surgery success rates.
- 4) Industry scale manufacture of hearing aids, dentures, personalized prosthetics, Jawbones, etc.

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## MEDICAL CONTACT LENSES

Contact lenses are thin lenses that are worn directly on the cornea of the eye. These are considered medical devices and can be worn to correct vision or for cosmetic or therapeutic reasons. When compared with spectacles, contact lenses provide better peripheral vision and do not collect moisture from rain, snow, condensation etc. or perspiration. This can make them preferable for sports and other outdoor activities.

Contact lenses are classified in different ways: By their primary function, material, wear schedule (how long a lens can be worn) and replacement schedule (how long before a lens needs to be discarded). They are used to correct the conditions such as Myopia (near sightedness), Hyperopia (farsightedness), Astigmatism (distorted vision), Presbyopia (need for bifocals) same as that spectacles correct. Therapeutic lenses are used to for pain relief or to aid healing whereas cosmetic lenses are used to change the appearance of the eyes.

Contact lenses can also be of daily wear (DW) (for one day), extended wear (EW) (for up to 6 consecutive nights) and continuous wear (CW) (for even longer wear periods of up to 30 consecutive nights).

Soft lenses are made of hydrophilic plastics, a special type of water-absorbing plastic that stays soft and moist as long as it is absorbing lots of water.

Rigid gas permeable lenses (RGP lenses) are also made of plastic which transmits oxygen without absorbing water. Instead, they have microscopic holes in them that allow the oxygen to filter through. Most of them are now made of three main materials: acrylate, silicone and fluorine.

Hybrid contact lenses exist that combine the materials of a RGP lens and a soft contact lens. These lenses have the acrylate, silicone and fluorine combination in the middle of the lens for sharpened central vision and soft contact lens water absorbing hydrogel around the edges for increased comfort.

Contact lenses are typically inserted into the eye by placing them on the index or middle finger with the concave side upward and then using that finger to place the lens on the eye. Rigid lenses should be placed directly on the cornea. Soft lenses may be placed on the sclera (white of the eye) and then slid into place. Another finger of the same hand or a finger of the other hand is used to keep the eye wide open. Alternatively, the user may close their eyes and then look towards their nose, sliding the lens into place over the cornea. Problems may arise if the lens folds, turns inside-out, slides off the finger or adheres more tightly to the finger than the eye surface.

Removing contact lenses incorrectly could result in damage to the lens and injury to the eye so certain precautions must be taken. Extreme care must be exercised when using mechanical tools or fingernails to insert or remove contact lenses. There are small tools specifically for removing lenses usually made of flexible plastic which resemble small tweezers or plungers that suction onto the front of the lens. These tools are used only with rigid lenses. Soft contact lens may be removed by pinching the edge between the thumb and index finger. It is also possible to push or pull a soft lens far enough to the side or bottom of the eyeball to get it to fold then fall out without pinching and damaging it.

Advantages:

- They aren't affected by weather conditions and won't fog up in cold weather like glasses
- They don't get in the way when playing sports and exercising
- They conform to the curvature of your eye, providing a wider field of view and causing less vision distortions and obstructions than spectacles

Disadvantages:

- Some people have trouble applying a contact lens to their eye
- They reduce the amount of oxygen reaching your eye and can cause or increase the severity of dry eye syndrome
- They require proper lens care and lens case cleaning each day, to avoid potentially serious eye infections

Some of the side effects of the contact lenses include blockage of oxygen supply to the eyes, dry eyes, irritation when combined with medication, especially birth control pills, diminished corneal reflex, corneal abrasion, red eye or conjunctivitis, ptosis and corneal ulcer.

Acuvue, Dailies, Air Optix, Biofinity, SofLens are few brands of contact lenses available in the market.

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### DIGITAL PHARMACY IN INDIA

In today's era, everything is going digital. Digitalization has been the highlight of 21<sup>st</sup> century. From buying clothes to buying groceries, online markets have become complete in a sense. There has hardly been any product which is not being sold online at this moment itself! And among those products are our very own pharmaceuticals. Yes, Online pharmacies have been a part of our online market for almost a decade now and they have come pretty far! Some of them are Netmeds, Practo & Medplusmart.

But how do they work? For prescription drugs, upload a valid and eligible prescriptions, with doctor's name and registration clearly visible along with the doctor's address with telephone number, Rx symbol, patient's name, name of the prescribed medicines with its strength and dosage and finally, the date of issue. If any of these are missing, the customer care executives will call the customer and ask them to send a complete and valid prescription. For OTC drugs, one can simply add the products to their cart and order them. Now, payment can be done by credit/debit cards, wallets, net banking or by cash on delivery methods and drugs will be delivered to them at their doorstep. This is how easy buying medicines has become!

And why are online pharmacies taking the place of traditional pharmacies? If one finds it physically difficult to make it to the pharmacy, live in a remote rural area, or have a busy schedule, online and mail-order pharmacies enable them to avoid travel and can save their time. Many online pharmacies also remind the customers when they can order a refill to help them maintain their regimen. Some online pharmacies provide useful information about medications and diseases as well as links to medical resources such as universities, government agencies, and health associations. Many people feel more comfortable purchasing their medication online, or simply want to speak to someone about prescriptions and their health online or over the phone rather than in person. However, to prevent the use of personal information for unauthorized purposes, make sure the pharmacy has an appropriate privacy policy. Online pharmacies also provide the consumers with cheaper medicines and health-care products. Many online pharmacies have a standard discount accompanied with festive and special discounts at specific conditions.

Convenient as it may be, it has its very own risks and disadvantages. To begin with, there are pharmacies which are not licensed. So care has to be taken and research must be done while choosing an online pharmacy. The site may provide the consumer with false or incorrect data about the drug. Such sites may share or misuse your personal details, which may range from one's credit card details or their health problems. Some medications sold online:

1. Are fake
2. Have not been manufactured properly
3. Are too strong and may cause unwanted side effects
4. Are too weak and may not treat your health condition as expected
5. Have ingredients that may be dangerous to your health
6. Have expired or are out of date
7. Are not approved by the FDA and therefore have not been checked for safety and effectiveness
8. Are not safe to take with other medications or health products that you are using
9. Are not labeled, stored, or shipped correctly

Keeping in mind these problems, one must choose only the certified online pharmacies and must do their research well. The major ethical issue online pharmacies in India are facing is reducing the business of traditional pharmacies to a very high extent, leading to problems like loss and eventual unemployment. Traditional pharmacies in India cannot provide it's consumers with such high discounts and despite of the several advantages it provides to customers, a major chunk of their customers are attracted to online pharmacies.

So in a growing country like India, where the concept of online pharmacy has a tremendous potential for growth and is a boon for rural areas, the online pharmaceutical market is still in it's young days & even though there still are some major issues to be covered and brought to balance, the advantages it has makes the standards of living in India a notch better.

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## CRISPR: GENOMIC EDITING-CURING DISEASES AT GENOMIC LEVEL

Genetic diseases in the humans are associated with congenital disorders and phenotypic traits. A single mutation in a gene can cause physical, mental or both problems. Some diseases can be lethal and there is still no cure for them. Over the past few years genomic editing technologies is providing a fast and an effective tool to precisely manipulate the genome at specific locations. Clustered Regularly Interspaced Short Palindromic Repeats (CRISPR/Cas9) is being used for the last few years and has shown advantages in terms of clinical applicability to treat genetic diseases such as Hemophilia, Beta-Thalassemia, Cystic fibrosis, etc.

CRISPR has been a game changer in biomedical research because of the ease and accuracy with which it can be used to edit the genetic code. It is a guide molecule made up of RNA that allows a specific site on the DNA to be targeted. It is normally used along with bacterial enzyme called Cas9 which acts as a molecular scissors, chopping the DNA at exact point required.

### HOW DOES CRISPR WORKS?

Scientists start with RNA. That's a molecule that can read the genetic information in DNA. The RNA finds the spot in the nucleus of a cell where some editing activity should take place. This guide RNA shepherd Cas9 to the precise spot on the DNA where a cut is called for. Cas9 then locks onto the double stranded DNA and unzip it. This allows the guide RNA to pair up with some region of the DNA it has targeted. Cas9 snips the DNA at this spot. This creates a break in both strands of the DNA molecule, hence sensing the problem, the cell repairs the break.

Fixing the break might disable the gene. Alternatively, this repair might fix a mistake or even insert a new gene. Cells usually repair a break in their DNA by gluing the loose ends back together. That's a sloppy process. It often results in a mistake that disables some gene. That may not sound useful but sometimes it is.

### DISEASES THAT 'CRISPR' TECHNOLOGY COULD CURE

CRISPR Technology could let us edit any mutation at will and cure the disease it causes. In practice, we are just at the beginning of the development of CRISPR as a therapy and there are still many unknowns.

#### 1. CANCER

One of the first and most advanced CRISPR clinical trials, which are currently running in China are testing the potential of the gene editing tool in patients with advanced cancer of esophagus. Treatment is carried out at Hangzhou cancer hospital. It starts with the extraction of T cells from the patient. Using CRISPR, the cells are modified to remove the gene that encodes for a receptor called PD-1 that tumors are able to bind to and instruct immune system not to attack. Cells are reinfused into the patient with a capacity to attack tumor cells

#### 2. BLOOD DISORDERS

First CRISPR trial in Europe will seek to treat beta-thalassemia, a blood disorder that affects the oxygen carrying capacity of blood. The therapy, developed by CRISPR Therapeutics and Vertex Pharmaceuticals, consists in harvesting hematopoietic stem cells from the patient and using CRISPR technology to make them produce fetal hemoglobin, a natural form of the oxygen-carrying protein that binds oxygen much better than the adult form. Hemophilia is another blood disorder that CRISPR technology could tackle.

#### 3. BLINDNESS

CRISPR is a great candidate to treat genetic blindness. For many hereditary forms of blindness, the specific mutations causing the disease are known making it easy to instruct CRISPR-Cas9 to target and modify that gene.

#### 4. AIDS

There are several ways CRISPR technology could help us in the fight against AIDS. One is using CRISPR to cut the HIV virus out of the DNA of immune cells. This approach could bring the key advantage of being able to attack the latent form of the virus, which is inserted into our DNA and inactive, making it impossible for most therapies to target it.

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## HI-TECHNOLOGY EMERGENCY KITS

No matter how many times people learn their basic lifesaving skills, in those moments of panic, many are likely to forget it all. A number of emergency situations like being stuck in a snowstorm, facing a power outage, a medical issue or even when lost, technology has truly saved the day. With proper preparation however, technology can sometimes truly save the day. This article covers some emergency technology tips and tools that may help. In most cases an emergency kit would contain the following: stethoscope, an otoscope for ear exams, glucose testing, pulse-oximeter, a blood pressure device, etc. What's more exciting are the new things coming up such as:-

1. A high-technology water dowsing- 'Nano mesh'. It is a nanotechnology water filter that can remove bacteria and viruses so that they're at levels better than Environmental Protection Agency standards.
2. High-technology warmth- blanket is used to treat people with shock, burns or hypothermia. It has sensors that monitor the breathing rate of the patients.
3. Another hydration technology uses a membrane filter, and works by fluid osmosis. It is hydrophilic (attracts water) and allows water to pass through, yet blocks very small contaminants. The flipside of the membrane is flavored so it can turn dirty puddle water into potable water.
4. We also have the power-free energy source; one of the most significant technology innovations for survival kits in recent years is improved battery life. Most brands of batteries have a shelf life of a year or two, but now they're marked with expiration dates of five to seven years.
5. Airborne dangers can be fatal as many people die from smoke inhalation during a fire. It good to include an emergency portable oxygen cylinder with enough air to last more than an hour.

A lot of new companies and start-ups have come up with new ideas for maintaining health. One of which is to keep in the kit, an iPad or any other electronic device. The information in the app is presented in a series of simple, on-screen prompts designed to identify and treat the most serious injuries first. The goal was to make it as easy as possible for bystanders to provide lifesaving care to trauma victims. Those using the kit can press different buttons for different injuries - burns, cuts, or trauma - and the relevant compartments will light up, directing them to the appropriate bandages, salves or equipment to treat that injury. If supplies get low, alerts are sent through to restock. That's all about hi-technology emergency first aid kits. Start healthy stay safe.

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## BIOABSORBABLE STENTS

Coronary artery disease (CAD) is one of the major causes of death in the world. Percutaneous transluminal coronary angioplasty is one of the mechanical interventions which are used in the treatment of CAD. Restenosis is the recurring of abnormal narrowing of a blood vessel or stenosis after corrective surgery. The recoiling of the vessel during the healing process is the primary cause of restenosis. Stents work as scaffolds and help to prevent recoiling and narrowing of the vessels. As the role of stents is temporary and only till healing, its surgical removal is important as it is foreign to the body. Hence to avoid this procedure the researchers have targeted to develop bioabsorbable stents.

Bioabsorbable stents can be classified into two main types: bioabsorbable polymer stents and stents with a bioabsorbable metallic backbone. The polymer based stents have several advantages over permanent metal stents. More targeted drug delivery, limiting smooth muscle proliferation on the abluminal side while simultaneously encouraging endothelialisation on the luminal side are some of the considerations where biodegradable stents win over permanent stents. They also have more drug loading capacity. During diagnosis, as there is no interaction from the polymer stents which would have been due to the metal stents makes bioabsorbable stents a preference.

Bioabsorbable polymer stents

Poly L-Lactic acid (PLLA), polyglycolic acid (PGA), polycaprolactone (PCL) and poly (D, L- lactic/glycolide) copolymer are some of the polymers which are used in fabrication of the polymer stents. However, polymer stents are associated

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with significant degree of local inflammation. These stents are not as strong as the metal stents and hence may give rise to recoiling. These stents also require proper storage conditions as they have a short shelf life.

### Bioabsorbable metallic stents

Metal bioabsorbable stents are trending as they have the potential to overcome the limitations of the polymer stents. Iron and magnesium are the two metals which are accepted and studied for the development of the metal stents. These two metals are well metabolised by the human body and hence their use is justified. Due to its ferromagnetic property, iron may express its interaction in magnetic resonance imaging observation, hence an alloy of iron with manganese is produced which non-ferromagnetic. Cytotoxicity of iron is insignificant. Another proposed design is a hybrid stent which is a combination of polymer stent and the metal backbone to enable strength and prevent recoiling.

The continuing pressure exerted by the stent on the vessel wall leads to neointimal tissue proliferation over the stent which results in luminal narrowing. Even though the stents of biodegradable materials were launched into the market, more advanced research is required to solve the various issues associated with them. The general idea of bioabsorbable stents is to disappear without any residual effects once the disorder is healed. The benefits of bioabsorbable stents are evident and if most of their features come to pass then bioabsorbable stents will definitely replace bare metal and drug eluting stents over time.

**Saloni Chavan**  
**T.Y.B.Pharm**

# Pharma - Geek's Corner

## PHARMACY FACTS

- Benjamin Franklin is considered the founding father of pharmacy. Before he discovered electricity, Benjamin Franklin dispensed medicine as a pharmacist.
- The Australian actor, Chris Hemsworth who played of Thor in Avengers: Age of Ultron had been working in a pharmacy before he got famous.
- Coca-Cola was invented by a pharmacist named John Pemberton.
- Another pharmacy technician, Charles Alderton, invented Dr Pepper in Waco, Texas in 1885. He loved the drugstore and the way it smelled, so he decided to make a fountain drink that tasted the way that it smelled – and Dr Pepper was born!
- Pharmacists are the most accessible healthcare professional >90% of people live within 5 miles of a pharmacist

## GUESS THE METIZAN

- 1) Tri 'a' murti of Final year
- 2) Eminem of Final year
- 3) Sultan Of Mimicry! (F.Y.)
- 4) Mr. Bean
- 5) Rani LakshmiBai
- 6) Tik tok queen of F.Y.
- 7) Saroj Khan
- 8) Johnny Bravo.
- 9) Mr. Picasso Of T.Y
- 10) Clay Jensen of S.Y.
- 11) Ms. Perfectionist
- 12) Hypothetical Sports Secretary
- 13) Gossip Queen of T.Y.

Answers: 1)Armitabh, Adhyay, Abhishek 2) Abhishek Pakhare 3) Ved Shetty 4) Siddesh Kelkar 5) Simran Kalandare 6) Pooja Kairamkonda 7) Sejal Nikam 8) Nishant Mhatre 9) Yogesh Jankar 10) Pratik Jain 11) Ravina Kajare 12) Nikhil Gupta 13) Rinku Muleva

## NITROUS OXIDE LAUGHS

1. I was reading a book about Helium.  
I just couldn't put it down.

2. Doctor: I have some bad news and some very bad news. The lab called with your test results. They said you have 24 hours to live.

Patient: 24 hours! That's terrible! What's the very bad news?

Doctor: I've been trying to reach you since yesterday.

3. I don't make chemistry jokes any more.  
I'm afraid I won't get any reaction.

4. If Avogadro calls, just ask him to leave his number...

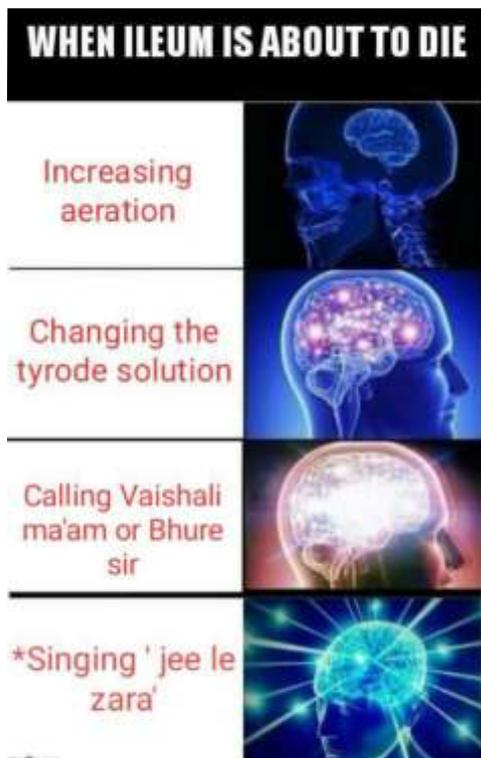
# Pharma - Geek's Corner

## CROSSWORD

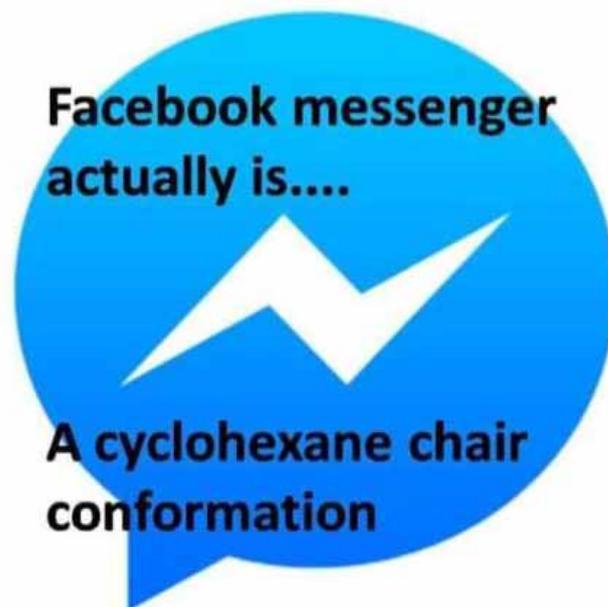
C	I	T	E	N	I	K	O	C	A	M	R	A	H	P
R	W	R	G	B	V	T	M	S	W	C	I	V	K	I
L	A	E	U	O	E	Y	K	T	I	G	Z	L	K	W
R	R	K	S	D	N	L	F	I	H	U	B	I	L	R
Y	R	X	P	R	M	O	W	H	E	R	P	N	S	P
R	H	M	R	C	V	F	R	L	H	D	V	C	K	U
A	Y	N	E	I	S	S	E	R	I	D	C	T	I	X
C	T	K	I	F	Y	U	B	O	H	A	D	U	L	R
E	H	Y	L	C	R	T	U	Z	S	E	T	S	W	E
H	M	J	Y	R	K	I	Y	H	R	I	A	P	L	T
T	I	Q	E	S	L	E	B	F	X	N	I	H	F	I
O	A	P	O	N	C	O	L	O	G	Y	U	K	U	N
P	I	A	G	N	H	W	I	L	F	J	M	H	U	O
A	D	N	O	I	T	P	I	R	C	S	E	R	P	L
I	U	L	A	T	I	N	T	O	L	W	E	I	W	R

- 1) Gonorrhoea.
- 2) Pharmacokinetic.
- 3) Retinol.
- 4) Prescription.
- 5) Arrhythmia.
- 6) Linctus.
- 7) Latin.
- 8) Apothecary.
- 9) Oncology.
- 10) Drug.

# Memes



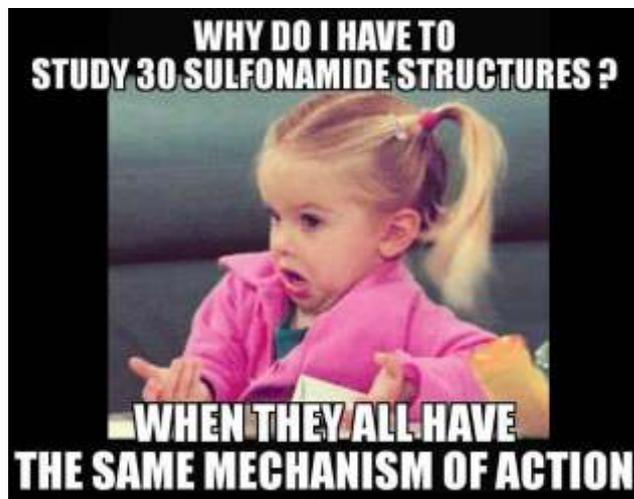
## One of the coldest places on Earth



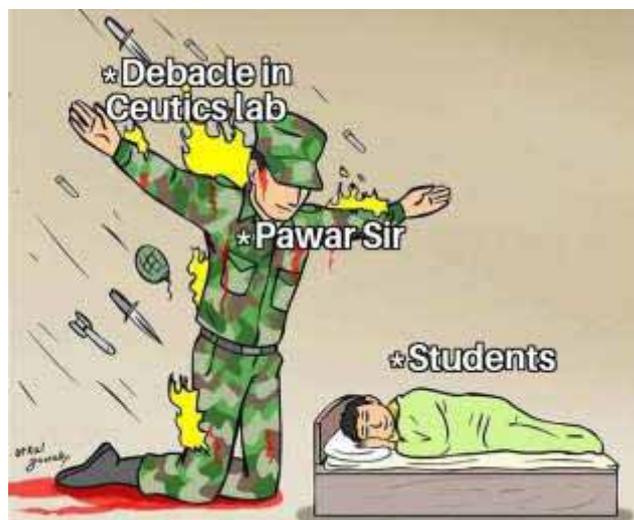
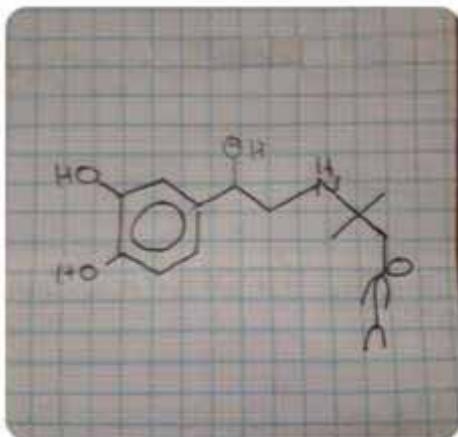
# Mememes



Pharmacy students after prescribing crocin for everything



drawing drug structures be like



# Le Moment Capturers



Dishita Mehta (Third Year B. Pharm)



Yogesh Jankar (Third Year B. Pharm)



Yogesh Jankar (Third Year B. Pharm)



Nidhi Kate (Second Year B. Pharm)



Yogesh Jankar (Third Year B. Pharm)



Pushpa Pawar (Third Year B. Pharm)

# Le Moment Capturers



Jay Jain (Final Year B. Pharm)



Nidhi Kate (Second Year B. Pharm)



Roshni Muthraj (Third Year B. Pharm)

# Le Moment Capturers



Yogesh Jankar (Third Year B. Pharm)



Shivam Seth (Final Year B. Pharm)



Shivam Seth (Final Year B. Pharm)



Jay Jain (Final Year B. Pharm)

# Le Moment Capturers



Ravina Kajare (Third Year B. Pharm)



Ravina Kajare (Third Year B. Pharm)

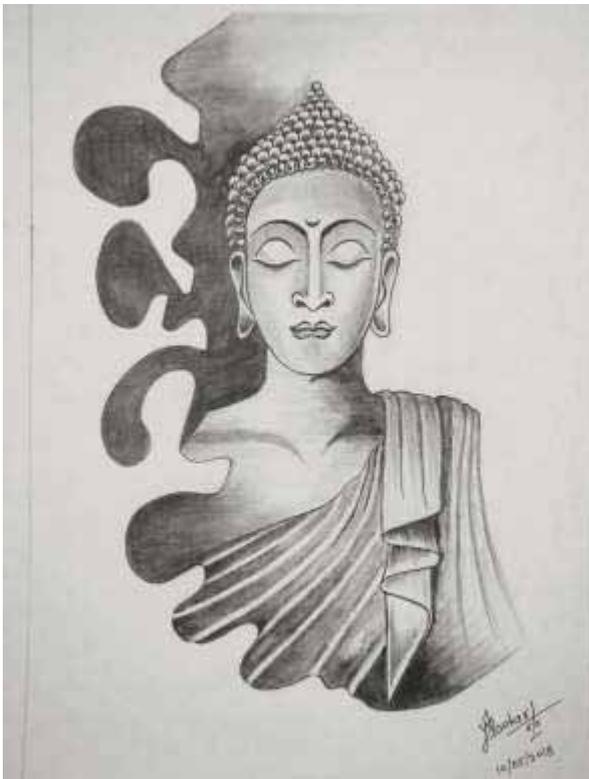
# Aesthetic Artists



Yogesh Jankar (Third Year B. Pharm)



Yogesh Jankar (Third Year B. Pharm)



Yogesh Jankar (Third Year B. Pharm)



Pushpa Pawar (Third Year B. Pharm)

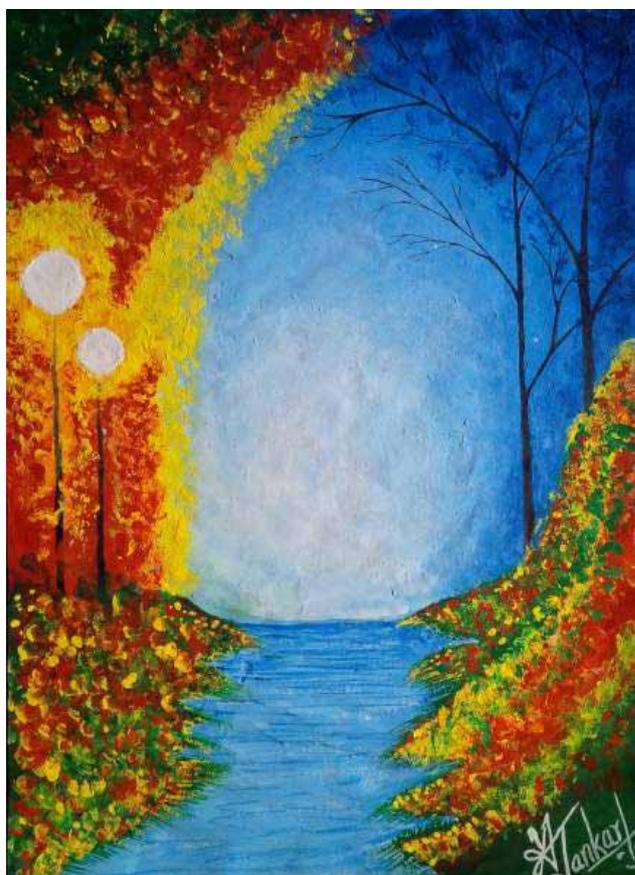
# Aesthetic Artists



Yogesh Jankar (Third Year B. Pharm)



Divyata Gaikwad (Final Year B. Pharm)



Yogesh Jankar (Third Year B. Pharm)



Piyush Mahajan (Second Year B. Pharm)



Piyush Mahajan (Second Year B. Pharm)



Piyush Mahajan (Second Year B. Pharm)



Piyush Mahajan (Second Year B. Pharm)

## LOVE AND SACRIFICE

What is love,if ever I ask,A father's job or a mother's task  
Lovable hugs and beautiful memories  
Emotional moments and heartfelt stories  
From mom's care,To grandpa's tales  
From grandma's sweaters To daddy's plays  
No ideas needed,no words required  
When all at once love is acquired  
Lovable hugs and beautiful memories  
Emotional moments and heartfelt stories  
The hours of hard work that our  
parents put in  
The support they give in joy and gloom  
Missing their lunches and giving us ours,  
Giving us happiness while sacrificing theirs  
Love and sacrifice deeply joined  
With a thin line of respect and trust defined  
Live your lives full of joy and sorrows  
Who knows if there will ever be a tomorrow!

**Chandani Mulewa (S.Y.B.PHARM)**

**कधी शांत कधी अशांत आयुष्य**

कधी शांत कधी अशांत आयुष्य  
कधी निर्भय कधी भीतीने थरथरत आयुष्य  
कधी अमृत वाटते तर कधी विष हे आयुष्य  
कधी संथ तर कधी वेगाने चालणारे हे आयुष्य  
कधी स्पष्ट तर कधी गूढ रहस्य असलेले आयुष्य  
कधी धीराने तर कधी संतापाने बेभान करणारे आयुष्य  
कधी यशाने तर कधी अपयशाची ओलख देणारे आयुष्य  
कधी निस्वार्थी तर कधी स्वार्थी बनवणारे आयुष्य  
कधी खर तर कधी खोटं काय हे सांगणारे आयुष्य  
कधी प्रेम तर कधी द्वेष काय हे सांगणारे आयुष्य  
मज्जा आणि नको त्यावेळी मज्जा केली तर  
त्या वेळी मिलणाची सजा दाखवणारे आयुष्य  
आपले कोण आणि आपल्यासाठी कोण हे  
आपणास माहीत करून देणारे आयुष्य  
स्वप्न पूर्ण करायला ते फक्त बघावे लागत नाही  
तर ते पूर्ण करण्यासाठी कर्म करावे लागते हे  
सांगणारे आयुष्य . . .  
श्वासावर नाही तर प्रेमाच्या ऑक्सिजन वर चालते हे आयुष्य

**Ankita Kanhere (F.Y.B.PHARM.)**

## What a wonderful world

What a wonderful world,  
Yet how could it be?  
All is black, red, and impurity.  
Dear, lend an ear. Park yourself down.  
Appear far or near, swivel a squint around.  
Mindly malisms must be set free,  
And I'll tell you just what I see.

I see sweet angels apt gait,  
Fixing her child a hot plate.  
Robust, under a tender crust,  
A powerhouse, quite unreal.  
Stardust, from its locus,  
Falling around her cape invisible.  
What venom can stand against a  
mothers spree,  
Of love and nurture,  
That's what I see.

I see a white deity fight for a Blacks son,  
Who amidst objection never touched a gun.  
Foreknown, that beneath skintone,  
Blood is crimson for all.  
Many disown, the labels thrown,  
How proudly they stand tall.  
Differences define;  
not discriminate thee,  
This countless believe,  
And thats what I see.

As through Salat, morning mist is glorified,  
As by Church bells, many hearts satisfied.  
A buddhist's plead, or a Jain's need.  
All equal in faith.  
A Granthi's deed, or a Priest's read.  
But all can relate.  
Together we exalt, down on the knees,  
Together with hope, and that's what I see.

**Deann Dias (S.Y.B.PHARM)**



# The METizens

## First Year B. Pharm.

Right on our very first day in the Institution of MET, it felt as though we were been welcomed into a new family. A big family of teaching and the non-teaching staff members, who enveloped us with care and strength. We being the youngest, our seniors nurtured and encouraged us to push our boundaries and never to stop at disappointments. MET with its bounty of brilliance and wisdom, persisted to mould us into independent and conversant students. MET is providing us with impeccable academics and endless series of co-curricular activities. These endless opportunities are the most valuable and nothing less than showers of blessings. And as our first year is passing by, we thank MET for mending our wings and training us for the upcoming years, aiding us to triumph with flying colours. We hope to continue our journey in this honored Institution for the next three years, and someday be able to reflect its excellence.



## Second Year B. Pharm.



# The METizens

## Third Year B. Pharm.



## Final Year B. Pharm.

A beautiful voyage of ebbs and flow enriched with lessons which have widened our horizons. On Embarking this journey at MET Institute of Pharmacy not only enlightened us with a vast expanse of knowledge but has instilled a deep sense of integrity and responsibility. A journey worth a million memories and a road to metamorphosis – we are heading to our destinations. MET has given wings to our dreams and the strength to chase our goals. We hope to reach the epitome of success and make our Institute proud. Thus, making this journey an everlasting one!

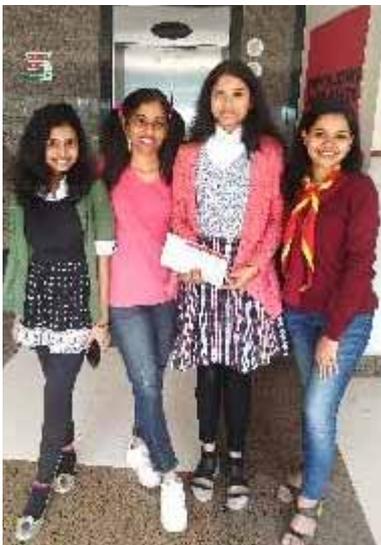


# Memories for Life

## Nostalgic Memories



# Memories for Life



# MET Utsav 2019 - Celebrating 30 Years



## Special Thanks to

We would like to express our special thanks to following members for helping and guiding us

**MET MARCOM Department:** Mr. J.G.Irani, Mr. Ashish Shrivastava, Mr. Pravin Gangan,  
Mr. Prashant Angre

**MET Sports Department:** Mr. Jayant Satghare, Mr. Harish Narvekar, Mr. Sebastain Narhona,

**MET ICS Department:** Dr Abhijeet Banubakode

**Photography:** Mr. Suman Gupta

**MET IOP (Degree):** Dr. U.B.Hadkar, Dr. Abha Doshi, Dr. Vijaya Patil, Dr. Vaishali Dixit,  
Mrs. Asavari Hadkar, Mr. Pramod Pawar Ms. Dishita Mehta, Ms. Shruti Sawant, Ms. Alice Ashapogu,  
Ms. Maithili Pokle and Ms.Purvi Pokharna.

Last but not the least, our faculty members, student council and the MET IOPians for their immense support throughout.



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