

The Nest

Nurturing sharp minds

EXPLORING THE ETHICAL WORLD OF PHARMA



A Student Council Presentation 2013 - 2014
MET Institute of Pharmacy (Degree)
Bhujbal Knowledge Centre, Mumbai

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

An intelligent mind is like a blade
that lies innocently in its wrapper.
You cannot feel the sharpness
till you expose the edge.

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.

What's Inside

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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 Centre, 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 Trichology
- Institute of Computer Science
- Institute of Distance Learning
- Institute of Software Development & Research

- Institute of International Studies
- Institute of Alternative Careers
- Rishikul Vidyalaya
- Knowledge Explorer - Publishing Division

Bhujbal Knowledge City, Nashik

- Institute of Management
- Institute of Pharmacy
- Institute of Engineering
- Institute of Technology (Polytechnic)
- Institute of Information Technology
- Institute of Distance Learning

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 amongst others, and Tianjin University, China, Hawaii University in participation with the University of Mumbai .

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. Recently M.Pharm.Sc. (QA) affiliated to the University of Mumbai was introduced in the year 2011. The MET IOP is approved by the Pharmacy Council of India, New Delhi and AICTE, New Delhi. Recently B.Pharm. got accredited by NBA too.

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 doing us proud all over the globe by being leaders in their choice of vocation.

Our Vision

MET Institute of Pharmacy has the vision to be recognised as one of the leading institutes 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 the society, at large.

Our 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 to the various facets in the field of pharmacy and contribute to improving the quality of life.



From the Chairman's Desk



Chhagan Bhujbal
Chairman, Mumbai Educational Trust

**"Education is the foundation
upon which we build our future."**

- Christine Gregoire

As the juggernaut of the Indian economy marches to complete another year, brilliant images of the past flash in the mind's eye. Braving challenges in every sphere, the socio-economic fabric of our society has held on to the course, to embrace another day. This ushers us into a place where the socio-political theatre will dominate India's mainstream.

Focussing on the future challenges, one wonders, what are the strengths that will help us withstand one avalanche after another: is it the steel frame, the gullible masses or the overzealous proactive leadership? Beating doomsday predictions, we have held our head high in the global arena and despite uncertainties, we are confident that our massive foreign exchange deficiency would be taken care of by NRI remittances. One may question the very source of such faith and self belief.

We are no doubt witnessing a paradigm shift in the society and nation. After six decades of the dark shadow of illiteracy, we have achieved a knowledge society, by empowering youth, through open competition, meritocracy and globalisation of education, blossoming gradually into a learning society. Excellence, innovation and entrepreneurship are milestones, we routinely cross, in our journey towards an inclusive society.

As we engage in shaping institutional excellence, one must remember that the process of education has to be enriched with real life experiences; to confront the real world; to test and refine knowledge. For this, we have to narrow the gap between the classroom and the market place. This alone will help us complete the task of developing a learning society.

We, at MET, challenge our delivery systems, to achieve synergy between knowledge and competency building, to meet the needs of the market place and the society at large. Through academics and participatory learning processes, driven by eminent professionals/educators, we attempt to seek a balance between knowledge and values, to empower youth to seek their place in the sun.

Chhagan Bhujbal
Chairman
Mumbai Educational Trust

Advantage MET

- MET is an NGO in Special Consultative Status with UN (ECOSOC)
- MET has been ranked the 13th best B School in South Asia by Asia Inc.
- The 4th best B School in West India & the 13th best all India by DNA
- The 12th best private B School in India by CNBC TV18
- Ranked 'A++' grade B School by Business India
- Ranked in the 'A3' category B School in India by AIMA
- Global internship opportunities across USA, UK and China
- Freeship awards for meritorious students
- Excellent placement opportunities in India and abroad
- Superior intellectual capital armed with knowledge and experience
- Outstanding Indian/global industry interface
- International interactions through the China Study Mission and the UN internship
- Sensitising the students towards social causes thru CSR projects: Save Water, Project TRUTH, Vidya Shakti, MET Seva etc.
- Research focussed faculty with cumulative experience of over 150 years
- The best state-of-the-art infrastructural facilities
- Strong alumni base of over 15,000 students
- Annual salary packages ranging from Rupees Five Lacs to Fifteen Lacs
- Global faculty and international knowledge sharing programmes
- Live management threshold
- International alliances with reputed B Schools and universities
- Strategic collaboration with the Global Shapers
- Enlightened interaction for urban-rural synergy
- Globalised learning delivered with the Indian ethos



Shri Pranab Mukherjee
Hon'ble President of India



Smt. Pratibha Devisingh Patil
Former President of India



Mukesh Ambani
Chairman & MD, Reliance



Adi Godrej
Chairman, Godrej



J. Hari Narayan
Former Chairman, IRDA



Rahul Bajaj
Chairman, Bajaj Auto

MET CHAIRMAN WINS EDUPRENEUR AWARD

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



The Director Speaks



Dr. U. B. Hadkar
Director, MET IOP

In the month of July, I thank all the MET-staff including MET Rishikul Vidyalyaya for their active participation. The MET premises were filled with the chanting of "Vithoba-Rukhumai Tukaram", "Gyanba Tukaram." We encourage these activities to preserve our culture.

On the academic front our students are doing very well. Every year about 10-12 students go abroad for higher studies, MS/Ph.D. A few of our students have been working as professors at the foreign universities. One of them, Dr. Jayesh Parmar had a good interactive session with our B.Pharm. students in the month of January, 2014.

To update their subject knowledge, we encourage our faculty members to attend seminars/workshops. Ms. Vrushali, Mrs. Nikita, Dr. Rashmi and Mrs. Poonam have attended seminars in this academic year. We organised a one day seminar on "Trends in Pharmaceutical Research and Development" in December 2013. Three of our staff members

Dr. Sonali, Mrs. Bhagyashri and Dr. Vaishali received university grants for their research projects. Most of our first batch M.Pharm.Sc. students have completed their research projects and submitted the thesis to the University of Mumbai.

After a lull of about 2 years, our students have participated in the inter-collegiate Rx-festival organised by Indian Pharmaceutical Association at the Bombay College of Pharmacy, Kalina, and have won a few prizes in the various events such as charcoal painting, graffiti, table tennis (boys, mixed doubles), girls throw ball, carom, face painting, standup comedy, mono-acting and junk jamming. Students also won awards in poster presentations and pharma quiz.

We owe our success and achievements to our beloved trustees Shri. Chhagan Bhujbal, Mrs. Meenatai Bhujbal, Mr. Samir Bhujbal and Mr. Pankaj Bhujbal who are source of inspiration for us.

Our magazine editorial board comprising of Ms. Sahana Ray, Ms. Ankita Satoor and Ms. Dipali Nagila, helped by teacher In-charge Mrs. Nikita Sanghavi has done a commendable job by bringing out this issue of 'The Nest 2013-14'. We appreciate the help rendered to them by Mr. Irani and Mr. Ashish in compiling and designing the magazine.

This academic year is marked by the discovery of the "God Particle" predicted about 50 years back by physicists. The ultimate goal of man should be to realize the supreme truth - to realise GOD.

From the Principal's Desk



Dr. Abha Doshi
Principal,
MET IOP (Degree)

It gives me immense pleasure to proudly present our magazine on the theme 'ETHICS'. Ethics is, knowing the difference between what you have a right to do and what is right to do. There is no real satisfaction in life than having a strong ethical character. We all need this in our personal and professional life. We pharmacists belong to such a profession that it becomes our primary responsibility to provide quality drugs for mitigation of diseases. A drug of right standard can only be successfully manufactured if an ethical approach is followed right from procurement of raw materials to manufacturing, marketing and delivery.

A good degree can fetch a great job but only ethics will help to sustain an impressive career. Attributes of ethics like moral values, honesty, loyalty will not only contribute in making a responsible pharmacist but also a good citizen of India. It is a commitment to self and should never be an imposed virtue.

'The Nest 2013-14' is an attempt to inculcate the importance of ethics to our young students who are set to make a mark in the outside world.

Finally, I would like to conclude by stating, "Educating the mind without educating the heart is no education at all."

Our Gurus

It is a wonderful feeling to be a part of MET IOP. The environment is extremely homely and a special bond exists with the students here. You are in the right place if you are in MET IOP. We are all proud to be a part of this organisation.



1st row: (L to R) Mrs. Aushima Dasari, Dr. (Mrs.) Sonali Naik, Mrs. Bhagyashree Joshi, Dr. (Mrs.) Abha Doshi, Dr. U. B. Hadkar, Dr. (Mrs.) Rashmi Srivastava, Mrs. Nikita Sanghavi, Ms. Priyanka Joshi, Mrs. Poonam Advani.
2nd row: (L to R) Ms. Vrushali Keer, Dr. (Mrs.) Madhura Vaidya, Dr. (Mrs) Radhika Raheja, Mrs. Sheeja Koliyote, Dr. (Mrs.) Vijaya Patil, Dr. (Mrs.) Vaishali Dixit, Mrs. Sindhu Menon.

Non-Teaching Staff

एम.ई.टी. ह्या संस्थेत कार्यरत झाल्यानंतर आमच्या ज्ञानात आणखी भर पडली. ही संस्था आम्हा कर्मचा-यांना एका परिवारा प्रमाणे वागवतात. त्यामुळे एम.ई.टी. आमच्यासाठी दुसरे घरच आहे. ह्या संस्थेत आपल्या संस्कृती प्रमाणे सगळे सण साजरे केले जातात. ह्याचा आम्हाला सार्थ अभिमान आहे. ही संस्था सर्व सोयींनी सुसज्ज आहे. येथे कोणतेही काम करायला उत्साह येतो. तो आमच्या बरोबर असलेल्या ह्या संस्थेच्या संचालक, प्राचार्य, शिक्षक ह्यांच्या मार्गदर्शना मुळेच. आणि म्हणूनच त्यांचे आभार मानावेसे वाटतात.



1st row: (L to R) Mr. Ghanshyam Kambli, Mrs. Manasi Vaidya, Mrs. Priya Sawant, Dr. (Mrs.) Abha Doshi, Dr. U. B. Hadkar, Mrs. Manisha Barve, Mrs. Usha Bansode, Mrs. Asavari Hadkar, Mr. Gurunath Pednekar.
2nd row: (L to R) Mr. Pramod Pawar, Mr. Pramod Karbhari, Mr. Sudhir Ayare, Mr. Sunil Mohite, Mr. Mahendra Surve, Mr. Prashant Rane, Mr. Sanjay Palav, Mr. Pradeep Jadhav.
3rd row: (L to R) Mr. Dattaram Bhure, Mr. Ajay Mali, Mr. Yuvraj Thackre, Mr. Dinesh Khanvilkar.

From the Cultural In-Charge

On the cultural front, the year started with the soulful Dindi procession followed by various festivals like Nagpanchami and Mangalagauri, all being celebrated with full zest and great enthusiasm by all staff and students.

The student council's first cultural event started with hearty welcome to our freshers, and farewell to first batch of M. Pharm.Sc. The students came dressed in the Casino theme and the whole hall changed to Las Vegas.

Our B.Pharm. and M.Pharm.Sc. students participated and won in various sports events conducted by University of Mumbai, and intercollegiate tech-fests like Vortex by ICT, Infra by IPA. This year our students also participated and won in individual events at Rx 2014. We congratulate all the students who actively participated and won in various events. The M.Pharm.Sc. students also came up with few research publications under the guidance of their research guide.

We had a Blood Donation Camp like every year. It was a great success this year as we collected 109 bottles of blood from MET staff and students.

The most awaited festival MET Utsav is again seeing enthusiastic participation from Institute of Pharmacy in both sports and cultural events. There is still more to come: the farewell and Lumiere for which the preparations have already started.

We would like to express our gratitude to the Board of Trustee, Dr. U. B. Hadkar, Dr. Abha Doshi, staff members and the student council for their continuous support.

Ms. Vrushali Keer, Mrs. Sindhu Menon



From the Editorial In-Charge

It gives me immense pleasure to be a part of the beautiful journey that made 'The Nest 2013-2014', with the theme ETHICS. The job of the editors is a daunting task and I am really very thankful to my team - Sahana Ray, Ankita Satoor and Dipali Nagila who worked with dedication and hard work to nurture this magazine. This work would not have been possible without immense support rendered by the Marcom team. I would also like to thank Dr U. B. Hadkar, Dr. Abha Doshi, all my colleagues and the non teaching staff along with the students who participated best to their abilities to make this magazine. The Nest is not only a summary of the happenings in the year 2013 but a tour of all the joyous moments that will always remain imprinted in our hearts. The whole idea to introduce the theme of ethics was to inculcate in our dear children the long lost morals and virtues. Articles related to ethics will really help one and all to understand the greatness of an ethical approach in every facet of life.

The year 2013 has passed by but the memories will always refresh whenever these pages of 'The Nest' are turned.

I really wish that all the readers get a wonderful experience reading this compilation of timeless moments.

Mrs. Nikita Sanghavi



The Council of the Year

Teachers In Charge

Ms. Vrushali Keer - Cultural in charge
Mrs. Sindhu Menon - Cultural in charge
Mrs. Nikita Sanghvi - Editor in charge

The Student Representatives

General Secretaries

Mr. Pathik Desai (T.Y.B.Pharm.)
Ms. Mamta Parekh (T.Y.B.Pharm.)

Cultural Secretaries

Ms. Munira Loliwala (S.Y.B.Pharm.)
Ms. Nida Siddiqui (S.Y.B.Pharm.)

Sports Secretaries

Mr. Vivek Bandagle (T.Y.B.Pharm.)
Mr. Deep Majithia (T.Y.B.Pharm.)
Mr. Shiva Kumar Macha (S.Y.B.Pharm.)

Editors

Ms. Sahana Ray (T.Y.B.Pharm.)
Ms. Ankita Satoor (T.Y.B.Pharm.)
Ms. Dipali Nagila (S.Y.B.Pharm.)

Treasurers

Ms. Yutika Charudatta Shirsat (T.Y.B.Pharm.)
Ms. Hiral Patolia (S.Y.B.Pharm.)

Class Representatives

Mr. Amol Rakamutha (S.Y.M.Pharm.)
Mr. Akash Sahu (S.Y.M.Pharm.)

Ms. Sadaf Faizan (Final Year B.Pharm.)
Ms. Afreen Khan (Final Year B.Pharm.)
Ms. Priyanka Kadvekar (Final Year B.Pharm.)

Mr. Aditya Kamat (T.Y.B.Pharm.)
Ms. Bhoomika Lodha (T.Y.B.Pharm.)
Ms. Aelisha Shah (T.Y.B.Pharm.)

Ms. Neeraja Chimote (S.Y.B.Pharm.)
Mr. Abhi Munani (S.Y.B.Pharm.)
Ms. Aarohi Phatak (S.Y.B.Pharm.)

Ms. Siddhi Bambarkar (F.Y.B.Pharm.)
Mr. Yash Sancheti (F.Y.B.Pharm.)
Mr. Gaurav Valvi (F.Y.B.Pharm.)



1st row: (L to R) Mr. Pradeep Jadhav, Mr. Pramod Karbhari, Mr. Sunil Mohite, Ms. Vrushali Keer, Dr. U. B. Hadkar, Dr. (Mrs) Abha Doshi, Mrs. Nikita Sanghavi, Mrs. Sindhu Menon, Ms. Munira Loliwala, Ms. Neeraja Chimote

2nd row: (L to R) Ms. Siddhi Bambarkar, Ms. Nida Siddiqui, Ms. Sahana Ray, Ms. Hiral Patolia, Ms. Dipali Nagila, Ms. Aarohi Phatak, Ms. Ankita Satoor, Ms. Aelisha Shah, Ms. Yutika Shirsat, Ms. Bhoomika Lodha

3rd row: (L to R) Mr. Gaurav Valvi, Mr. Yashwant Malode, Mr. Yash Sancheti, Mr. Amol Rakamutha, Mr. Aakash Sahu, Ms. Priyanka Kadvekar, Ms. Afreen Khan, Ms. Sadaf Faizan, Ms. Mamta Parekh.

4th row: (L to R) Mr. Abhi Munani, Mr. Shivakumar Macha, Mr. Pathik Desai, Mr. Deep Majithia, Mr. Aditya Kamat, Mr. Vivek Bandagle

The Council Talks

In the academic year of 2013-14, students from all years of MET Institute of Pharmacy came together to form the students council, and together embarked on a beautiful journey.

We came together for the first time, but as the year progressed we grew as a team. Each difficulty was treated as a stepping stone, and with a lot of enthusiasm and zeal we overcame all the hurdles that we encountered.

We would like to thank our cultural in charges Ms. Vrushali Keer and Mrs. Sindhu Menon, who found the perfect balance between work and play to optimize our collective efforts.

We would be also grateful to Dr. U. B. Hadkar, Dr. Abha Doshi, Dr. S. D. Bhosale and all of our teaching and non-teaching staff for the constant and unwavering support.

And as this year draws to a closure, we keep our heads high, knowing that we have given our best to the legacy of success left behind by our seniors.

The Student Council

Editorial Committee

"The Nest" which is published every year truly personifies the phrase 'A walk down the memory lane'. It encompasses all the events that occur throughout the academic year in a nutshell.

The editorial committee has made a compilation to showcase the great talents that we healthcare professionals possess in various other fields may it be music, dance, literary works or art. What's new in this year's Nest? Well, this year we have shed some light on the subject of '**Ethics**'.



What is Ethics?

Common people always carry misconception regarding ethics. They consider them as our laws. Are laws and Ethics completely same? No they are not. Laws are basically rules and regulations which we are forced to follow. Whereas Ethics are set of moral principles and values that should come from within. They include deep engraved virtues such as honesty, truthfulness, loyalty and a sense to differentiate between what is wrong and what is right.

We have highlighted the true meaning of ethics in pharmacy and its current state in the pharma world.

The job of an editor is never easy but we were passionate about working for 'The Nest' and putting in our united efforts as a team made this an amazing experience. A special thanks to Mrs. Nikita Sanghavi our editorial in charge, who helped and guided us at every step and made us work as a team. Last but not the least we thank Mr. J.G. Irani, Mr. Ashish Shrivastava and the entire MET Marcom team which plays a critical role in building up 'The Nest' every year.

About the cover page - This year we've chosen the theme "Ethics in Pharmacy" which we have sincerely tried to depict by our cover page. The book of ethics represents the importance of values and morals. The golden mortar and pestle defines our profession and the background picture speaks volumes about the need of balancing pharma globally.

Ms. Sahana Ray (T.Y.B.Pharm.)
Ms. Ankita Satoor (T.Y.B.Pharm.)
Ms. Dipali Nagila (S.Y.B.Pharm.)

IPA Talks

Indian Pharmaceutical Association Student's Forum Maharashtra State Branch is a student welfare association in which all students from various pharmacy colleges across Maharashtra share a common roof to interact and learn various programs organised by member for students. The various programs in 2013 included the industrial visits, hospital pharmacy and community pharmacy training, blood bank visits, seminars and workshops on various research topics, health campaigns and a 3-dimensional festival called Rx which covered various events from sports, arts, cultural, science and health.

IPA Council Members

Ankita Jadhav - Joint Student Exchange Officer

Cell Members

Mrinmayee Bhandari - Public Health Committee

Yash Kandoi - Public Relation Committee

Vishakha Anbhore - Pharmacy Education Committee

Mamata Jain - Cultural Committee

Siddhi Kanakia - Treasurer Committee

Jitendra Singh Yadav - Sports Committee



(L to R) Mr. Yash Kandoi, Ms. Mrinmayee Bhandari, Ms. Ankita Jadhav, Ms. Vishakha Anbhore, Ms. Mamata Jain, Ms. Siddhi Kanakia

Oath of the Pharmacist

I promise to devote myself to lifetime of service to others
through the profession of pharmacy.

In fulfilling this vow I will consider the welfare of humanity and relief
of suffering my primary concerns.

I will apply my knowledge, experience and skills to the best of my abilities
to assure optimal outcomes for my patients.

I will respect and protect all personal and health
information entrusted to me.

I will accept the lifelong obligation to improve my professional
knowledge and competence.

I will hold myself and my colleagues to the highest principles of our profession's
moral ethical and legal conduct.

I will embrace and advocate changes
that improve patient care.

I will utilise my knowledge, skills, experiences, and values
to prepare the next generation of pharmacists.

I take these vows voluntarily with the full realisation of the responsibility
with which I am entrusted by the public.



MET IOP has already established itself as one of the best pharmacy colleges in India as well abroad. MET has been and always aimed at overall development of the students. MET IOP conducts educative seminars for its students to enhance their knowledge. So here we have MET Campus News...The MET IOP folktale...in a gist.

Seminars and Guest Lectures

Career Guidance

Date: 11th July 2013

MET IOP organised a special career guidance session for the students. Dr. Manish Nerulkar a former president of preclinical R&D now working as a global head of R&D enlightened the students with various career options they can opt after completing their B.Pharm. course. He gave an insight on deciding a career option based on ones interests and personality and advised to do things differently. The seminar was indeed very motivating and helped students to streamline their choices regarding career options in this vast pharma world.

Intellectual Property Rights

Date: 27th July 2013

The college invited Ms. Poonam Kolhe Dhake (B.Pharm. LLB), a registered patent and trademark agent to share her techno legal experience on intellectual property rights.

A patent is a set of exclusive rights granted by a sovereign state to an inventor. She gave an insight to various patent laws, infringement laws, its uses and limitations. She thoroughly explained the procedure for granting patents, requirements placed on the patentee and the extent of the exclusive rights. Patents can be commercialized by applicants by selling it to various buyers who are usually bound by a contract in exchange of the information about the patent.



Dengue Awareness

Date: 24th August 2013

MET IOP was proud to have their alumni Mr. Rushil Bhatt in the convention centre for presenting a talk on "Dengue and Control".

"Know dengue, no Dengue" was the main motto. His title was truly apt for the day. He focused on topics like causes of Dengue, signs, symptoms along with its management in a simple student friendly language. The short and educative seminar was informative and imparted sufficient knowledge to deal with this life threatening disease.



Trends in Pharmaceutical Research and Development

Date : 24th December 2013

A one day seminar on "Trends in Pharmaceutical Research and Development" was organised by Mrs. Nikita Sanghavi, Dr. Rashmi Shrivastava, Dr. Vaishali Dixit and Dr. Madhura Vaidya.

The seminar focused on promising approaches in research in various fields like Pharmacology, Pharmaceutics, Pharmacognosy and Pharmaceutical Chemistry. Renowned professors from academia and experienced professionals from the industry shared their knowledge and delivered a new learning platform about the newer technologies in the above mentioned subjects. The experts focused on a shift from the conventional research and educated the participants regarding the research potential.

Dr. Vandana Patravale, Professor in Pharmaceutics from ICT educated the delegates on trends in pharmaceutical research and the right approach to



Campus News

The MET IOP folktale

begin with some meaningful research. Dr Meena Chintamaneni, Associate Dean, SPPSTTM, NMIMS University shared her expertise on novelty in pharmacological research in a very student friendly approach. Dr. Aarti Prabhu, Senior Research scientist from Piramal Enterprises Ltd. gave an insight on new drug discovery and development. Dr.S.R Kulkarni shared her pool of experience on Do's and Don't's of herbal research. The seminar also witnessed a poster presentation competition with cash prizes in which students from various pharmacy institutes enthusiastically

Events

Dindi

Date: 19th July 2013

The academic year 2013-2014 started off with the celebrations of Aashadi Ekadashi, a festival to seek blessings of Lord Vitthal and his wife Rakhumaae. The 'Dindi', march was one of the most significant event of the day and it was attended by the entire MET IOP family. The Dindi was carried out from Bandra Bandstand to the college campus. The air was filled with the sound of lezhim and chants of everyone praising the sacred lord. The energetic dancers adding sheen to the event danced with joy and enthusiasm. This religious gathering was concluded with an 'Aarti' and distribution of 'Prasad' to one and all. A special thanks to our Director Dr. U. B. Hadkar who encouraged us to celebrate the event and be a part of this beautiful day.



MET SEVA

Date: 6th August 2013

METSEVA organized an event at S.V. Choudhary School at the outskirts of Mumbai, near Vasai. The volunteers included Hiral Patolia, Mamta Jain, Jyoti Singh and Jyoti Ghughe from IOP (Degree). Raincoats, umbrellas along with the academic books were distributed to the children and teachers. The volunteers worked towards a noble cause and contributed to the future of India by helping the under privileged children of the society.



Staff Picnic

Date: 12th August 2013

A picnic was arranged for the entire staff of MET IOP to vivify themselves from their usual hectic day. The picnic was arranged at the Great Escape Water Park. Entire teaching as well as non teaching staff enjoyed themselves thoroughly at the park. It was a day when mentors transformed to children to enjoy the water slides at the park. The staff picnic proved to be a perfect get away for the teachers who have such grueling rigorous schedule all through the year.



Independence Day

Date: 15th August 2013

Independence day of August 2013 was the 67th year of freedom and it was celebrated with utmost serenity in the MET complex. It was a day where the struggle and sacrifices of our national heroes for our motherland was remembered. The flagship event took place in the college campus where the trustees and the Chief Guest hoisted the National flag. The National Anthem was sung by the students of MET IOP in a melodious tone. The guests and students gave some inspiring speeches which not only left us proud of our rich heritage but also inspired us all to work together for the

Campus News

The MET IOP folktale

progress of India. MET Rishikul children demonstrated their love for Mother India by dancing on popular patriotic songs. The dance was truly creative and made an indelible impression on the spectators. The Independence Day celebrations concluded with refreshments. The overall experience will surely be a memorable one.

Satyanarayan Pooja

Date: 17th August 2013

Satyanarayan Pooja is usually done on the full moon and is one of the best and easiest ways to seek blessings from Lord Vishnu, who is the God responsible for maintenance of this universe. On this day, the Lord Satyanarayan, the embodiment of the eternal truth was worshiped by MET members. The pooja was very devotedly performed by one of our lab attendants Mr. Arun with his wife. The place decorated with lights and rangoli made a pretty picture. Garlands adorned every door and the entire floor was fragrant with the scent of essence sticks. Delicious traditional food added to the holy function. A pious day indeed.



Blood Donation Camp

Date: 27th August 2013

As a step toward saving life, students of MET IOP with teaching and non-teaching staff organized a blood donation camp in the MET complex with support rendered by Sarvodaya Blood Bank. Mr. Rushil Bhatt, MET IOP (degree) alumni helped the entire program of blood donation and proved that with perseverance any difficult task can be accomplished. The camp witnessed a huge participation from various donors who very willingly showcased a generous attitude of saving lives. A total of 109 blood bags were collected and sent to the blood bank. MET IOP was proud and so were the donors.



Mangala Gauri

Date: 30th August 2013

Mangala Gauri is celebrated all over Maharashtra by the newly married brides on every Tuesday in the month of *shravan*. Mangalagauri, the Goddess of benevolence is worshipped on this day. On 30th August 2013, all ladies of MET IOP celebrated this cheerful occasion by dancing & playing various games like 'fugdi' and 'zimma' in the convention centre. The teachers were made to recite 'ukhane' which is a rhyme of 2-4 lines to describe the husband's quality. This added the fun quotient to an already joyous event. On this occasion professional dancers also performed and won the hearts with their brilliant performances.



Farewell to M. Pharm. Sc.

Date: 31st August 2013

We welcomed our freshmen with sheer joy but our hearts were heavy as we said 'good bye' to our very own M. Pharm. students. In these two years, they have definitely imprinted themselves in our hearts with hard work and dedication, but all good things come to an end just for a better beginning. We are sure that the oldest members of the student family will make a mark as they step out in the pharma world and will give us glorified moments in the years to



Campus News

The MET IOP folktale

come. A farewell party for our little group of M. Pharma was organized where students and teachers poured out their emotions of getting departed.

Freshers Party

Date: 31st August 2013

It's the most thrilling part of one's life when one just starts college, and if it is accompanied with a rocking freshers' party, it gets even better. On 31st August 2013, we welcomed our newbies into the world of pharmacy with glee. This event was also accompanied by a farewell party for our very own M.Pharm.Sc. The party was one classic affair, with an exciting theme-Casino Las Vegas. The party was brought to life by various enthralling performances by the seniors and also the young entrants. There were many 'one minute' games organised by the student council which in a way helped us in selecting out the candidates for Mr. and Ms. Fresher. The coveted title was awarded to Mr. Gaurav Valvi and Ms. Siddhi Bambarkar. The party was brought to an end with a jam session where the collegians danced and burnt the dance floor with lots of enthusiasm and excitement.



Teachers Day

Date: 5th September 2013

A good teacher is like a candle, they consume themselves to light the way for others and 5th September is a perfect day to pay tribute to the hard work and devotion of the teachers. The former Indian President Dr. Sarvapalli Radhakrishnan once said that the teachers are not ordinary because they make you extraordinary and are the real makers of the future citizen of India. They truly support us in every step and to thank them in our little way the student council (degree) presented a beautiful card to all the teachers of MET IOP (degree & diploma). The day was celebrated by cutting a cake and a Ganesh idol was gifted to our beloved teachers as a gesture to express our gratitude towards our inspirers.



In the hope for a better tomorrow

Date: 11th September 2013

In this space and time, where competition is on the rise, making a living seems to be one of the most difficult aspects of life. Every student struggles to make it to the best college, get the best grades and fetch themselves the best jobs with the best pay. In this entire hustle bustle, we forget to indulge ourselves in kind acts such as helping those in need.

In our midst we had Master Pradip Barot from Ahmedabad, studying in the 10th grade at Somnath High School. The young lad had lost his father a couple of years back and was the sole bread winner of a family of four. Currently he is associated with Barot Handicraft Training Centre, Rajasthan that was started by his forefathers fifty years ago. He teaches handicap children to make various artifacts with paper. Be it a bird, lotus or even 'Delhi ka Kutubminar', this young talented boy can make it with just paper and scissors. He has a craft manual under his name with translations in various languages.

He travels across the country to get as many donations possible during his vacations. Apart from travelling, he makes visits to the handicraft center to teach the art of craft to various students. He has been successful in sending his sisters to an English medium school as well. Master Pradip Barot is an epitome of hard work and kindness. He is truly dedicated and sets an example for others to see a better tomorrow. We were motivated, weren't we?

Campus News

The MET IOP folktale

Anti-tobacco Rally

Date: 21st October 2013

MET IOP organised an anti-tobacco rally on the streets of Bandra. A group of 30 students from the IOP family marched across the streets to create awareness among the common people regarding the ill effects of tobacco on human health. The rally was supported with posters and banners to educate the general mass and inculcate a sense of responsibility toward ones own health and well being.



MET Diwali Joy

Date: 23rd October

MET organized various competitions for all its teaching and non teaching members as a part of Diwali celebrations. Competitions like rangoli making, diya decoration and kandil making surfaced out the talents of many METizens. A wave of enthusiasm lightened up the festive mood and huge participation from various departments made the event a great success. Team of our very own teachers participated in the rangoli competition. They presented a beautiful innovative peacock donned with colors. Creativity was at its peak and lovely designs handmade with colors and flowers caught everybody's eye. Mrs. Asavari Hadkar, a part of our non teaching faculty won the first prize in kandil making competition leaving everyone much behind. A Diwali party was also organized the next day for the entire organisational family of MET the next day. Various singers and stand up comedians brought delight to every face enjoying the party. Overall it was a wonderful experience.



Nature Trip

Date : 19th December 2013

An educational tour to the Maharashtra Nature Park was organized for the final and third year B. Pharm. students. This visit to the nature park gave the students an opportunity to see & learn the vast array of plants and animal species. The place visited was the first man made forest. It houses more than 400 species of plants and animals. 80 different species of butterflies alone habituated the park. This place was a dumping ground earlier and it took 13 years to develop a beautiful place of this kind. Clicks of the cameras were frequently heard to capture different variety of plants and animals. Students gathered a lot of information that helped them in their curriculum. Nature at its Best! Education at its Best!



Rx is the annual technical, sports and cultural festival organized by the Indian Pharmaceutical Association. This year it was held at the Bombay College of Pharmacy, Kalina from 16th-18th January 2014. All the colleges across Mumbai and from its outskirts participated in this festival. As soon as the University exams got over the students once again geared with enthusiasm and started preparing for the various events of the festival.

Although we went back after an years' break, we didn't leave any stone unturned. The students actively participated in various sports, technical and cultural events.

The sports' events started from 26th December 2013 and concluded on 10th Jan 2014 at the Oval ground, Churchgate. Our MET IOP girls played with high spirits and secured the 3rd place in the throw ball event. Rohan Awate continued the legacy of winning TT singles, doubles and mixed doubles as well.

Campaigns were a big part of Rx this year and we did win the Best Campaign Award. Individual and group events such as Junk jamming, charcoal painting and many more were proudly won by the METians.

This year a new tradition of the council march past was introduced along with our very own mascot. Renaissance was the festival theme and our mascot was 'The Assassin' portrayed by our very own first year class student Mr. Gaurav Valvi. All the participants felt immense pride and honour to march for MET.

We were back this Rx with great spirit and this inter college festival gave us an amazing experience. We were given a great exposure and unity amongst us was greatly magnified.

ALL FOR ONE AND ONE FOR ALL!



Rx

Rx Winners

Sports

Table Tennis

First place

Rohan Awate	(Final Year B.Pharm.)
Soham Sawant	(S.Y.B.Pharm.)
Aakash Sahu	(F.Y.M.Pharm.)
Ankita Jadhav	(T.Y.B.Pharm.)
Shreya Mhatre	(T.Y.B.Pharm.)
Munira Loliwala	(S.Y.B.Pharm.)

Carrom

Second place

Arjav Modi	(Final Year B.Pharm.)
Suresh Gupta	(T.Y.B.Pharm.)

Throw Ball

Third place

Anagha Sonawane	(Final Year B.Pharm.)
Ankita Jadhav	(T.Y.B.Pharm.)
Shreya Mhatre	(T.Y.B.Pharm.)
Sahana Ray	(T.Y.B.Pharm.)
Ankita Satoor	(T.Y.B.Pharm.)
Priya Shivagan	(T.Y.B.Pharm.)
Munira Loliwala	(S.Y.B.Pharm.)
Vinaya Modak	(S.Y.B.Pharm.)
Nida Siddiqui	(S.Y.B.Pharm.)
Trupti Zingade	(S.Y.B.Pharm.)
Priyanka Nijai	(F.Y.B.Pharm.)

Tech Fest

Pharma Photography

First place

Yash Kandoi	(S.Y.B.Pharm.)
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Poster Presentation

First place

Dinesh Choudhary	(Final Year B.Pharm.)
Priyanka Kadvekar	(Final Year B.Pharm.)
Pooja Dubey	(Final Year B.Pharm.)

Pharma Quiz

Second place

Sankalp Gharat	(Final Year B.Pharm.)
Rutu Desai	(Final Year B.Pharm.)
Dinesh Choudhary	(Final Year B.Pharm.)

Paper Presentation

Second place

Abhishek Nair	(Final Year B.Pharm.)
Bhavini Panchal	(Final Year B.Pharm.)
Darshana Mahadik	(Final Year B.Pharm.)

Renaissance

Cultural

Charcoal painting

First place

Sankalp Gharat	(Final Year B.Pharm.)
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Mono Acting

First place

Akshay Rathod	(Final Year B.Pharm.)
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Graffiti

First place

Farhin Sayyad	(Final Year B.Pharm.)
Ruchita Nahar	(Final Year B.Pharm.)
Sham Patil	(Final Year B.Pharm.)
Rohan Dhumatkar	(T.Y.B.Pharm.)
Preet Joshi	(T.Y.B.Pharm.)
Ankita Jadhav	(T.Y.B.Pharm.)
Vinod Choudhary	(S.Y.B.Pharm.)

Western Solo Dance

First place

Mihir Karella	(T.Y.B.Pharm.)
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Impression Art

Second place

Viraj Khasgiwale	(S.Y.B.Pharm.)
Unnati Rane	(S.Y.B.Pharm.)

Face Painting

Second place

Arjav Modi	(Final Year B.Pharm.)
Sankalp Gharat	(Final Year B.Pharm.)

Collage Making

Third place

Siddhi Kanakiya	(S.Y.B.Pharm.)
Hiral Patolia	(S.Y.B.Pharm.)
Vinod Choudhary	(S.Y.B.Pharm.)

Junk Jamming

Third place

Ankita Satoor	(T.Y.B.Pharm.)
Tejas Pawar	(T.Y.B.Pharm.)
Pintoo Gupta	(T.Y.B.Pharm.)
Nilesh Jadhav	(S.Y.B.Pharm.)
Abhishek Shamsundar	(F.Y.B.Pharm.)

Standup Comedy

Third place

Nilesh Jadhav	(S.Y.B.Pharm.)
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Rx

Renaissance

Rx Glitterati



Achievements of 2013

• College Achievements

MET IOP is very proud to be accredited by the National board of accreditation for three years. Way to go MET IOP !!!

• Teachers Achievements

Books Authored

Dr. U. B. Hadkar published a book on Research Projects in Pharmaceutics - Lambert Academic Publishing.

Lectures Delivered:

Mrs. Nikita Sanghavi delivered a talk on 'Career options in Pharmacy' at Oriental College of Pharmacy for the IPA students forum.

Dr. Vaishali Dixit delivered a talk on Polypharmacy at C.U. Shah College of Pharmacy for the IPA students forum.

Poster Presentations:

"Comparison of Mucoadhesive patches of Ondansetron HCL with conventional marketed tablets" by Dr. Abha Doshi, Ms. Iswarya Sirdhar at DISSO INDIA Conference, The Lalit, Mumbai.

"Comparison of floating tablet of losartan potassium with conventional marketed tablets" by Dr. Abha Doshi and Ms. Bhagyashree Chavhan, The Lalit, Mumbai.

Dissolution Studies of Gastroretentive Drug Delivery System of Famotidine' by Dr. Abha Doshi, Ms. Bhagyashri Joshi, The Lalit, Mumbai.

"Simultaneous Optimization of Pharmacokinetic and Pharmacodynamics Properties of Beta-Adrenergic Blockers" by Mrs. Poonam Advani at the 'Inter University Research Convention-Avishkar 2013-14'.

Paper Publication:

'Formulation and Characterization of Buccal Patches of Ondansetron Hydrochloride'; Dr. Abha Doshi, Ms. Iswarya Sridhar, International Journal of Pharmaceutical Research and Development.

'Comparison of Mucoadhesive Patches of Ondansetron HCL with Conventional Marketed Tablets': Dr. Abha Doshi, Ms. Iswarya Sridhar, Journal of Scientific and Innovative Research.

'Solid Dispersion: An Approach to Enhance Solubility of Poorly Soluble Drug': Dr. Abha Doshi; Ms. Iswarya Sridhar, Journal of Scientific and Innovative Research

'Formulation and Evaluation of Floating Tablets of Losartan Potassium; Dr. Abha Doshi, Ms. Bhagyashri Chavan; International Journal of Pharmaceutical Research and Development

'Comparison of Gastro Retentive Floating Tablets of Losartan K with Conventional Marketed Tablets'; Dr. Abha Doshi, Ms. Bhagyashri Chavan; Journal Of Scientific And Innovative Research.

Review on 'Needle Free Drug Delivery systems', Dr. Abha Doshi, Ms. Bhagyashri Chavan, Mr. Yashwant Malode, Mr. Balu Misal; International Journal of Pharma Research and Review.

Luminaries

Celebrating Brilliance...

Mrs. Bhagyashri Joshi published the following papers:

- 'Mouth Dissolving Tablets – A Comprehensive Review' - International Journal of Pharma Research & Review
- 'Formulation and Evaluation of Mouth Dissolving Tablets of Rizatriptan Benzoate using different Superdisintegrants'; International Journal of Pharmaceutical Research & Development
- 'Solid Dispersions: An Approach to Enhance Solubility of Poorly Water Soluble Drug'; Journal of Scientific and Innovative Research
- 'Formulation and Evaluation of a Herbal Microemulsion for Controlling Hair Loss'; Mrs. Priyanka Joshi, Nalini S. Kurup; International Journal of Research in Pharmaceutical Sciences.
- 'Saxifragaligulata and Atrophic Vaginitis'; Dr. Rashmi Srivastava, Mrs. Priyanka Goswami; International Research Journal of Pharmacy and Natural Sunscreen Agents in Scholars Academic Journal of Pharmacy.
- 'Evaluation of Anti-inflammatory Activity of Topical Gel b Carrageenan Induced Paw Oedema Method'; Mrs. Sheeja Koliyote, Mr. Balu Misal; The Journal of Scientific and Innovative Research.
- 'A Review on Spirulina - The Natural Superfood'; Mrs. Nikita Sanghavi, Mr. Mehram Patel, Mr. Rahul Lad; International Journal of Medical and Pharmaceutical Sciences Research and Review.
- 'Microwave Assisted Extraction of Phytoconstituents'; Dr. U. B. Hadkar, Mrs. Nikita Sanghavi, Mr. Yashwant Malode, Ms. Bhagyashree Chavan; Asian Journal of Phytomedicine and Clinical Research.
- 'Isolation and Identification of the Flavonoid - Quercetin from *Tridax procumbens* Linn'; Mrs. Nikita Sanghavi, Dr. Rashmi Srivastava, Mr. Yashwanth Malod; International Journal of Pharmaceutical Sciences and Research.
- 'Marker Based Standardization of Commercial Formulations Containing *Shankhapushpi* using HPTLC'; Mrs. Nikita Sanghavi and Dr. Pratima Tatke; Indian Drugs
- 'A Review on Para-Phenylenediamine and Hair Dyes'; Dr. Vaishali Dixit, Ms. Suruchi Sharma; International Journal of Pharmaceutical Research and Development.

Research Grants:

Dr. Sonali Naik was granted ₹ 35000

Mrs. Bhagyashri Joshi was granted ₹ 30000

Ms. Vrushali Keer was granted ₹ 20000

Ongoing Education :

Mrs. Sheeja Koliyote secured admission for Ph.D. at K. M. K. College of Pharmacy in the subject of Pharmaceutics.

Mrs. Poonam Advani is pursuing her Ph.D. in Medicinal Chemistry at B.C.P. Santacruz

Mrs. Bhagyashri Joshi is pursuing her Ph.D. in Pharmaceutics respectively at I.C.T., Matunga.

Student Achievements

Vortex Winners 2013

First Place in Pharma Quiz and Second Place in Drug Store Management

Mansi Shah

(Final Year B.Pharm.)

Dinesh Choudhary

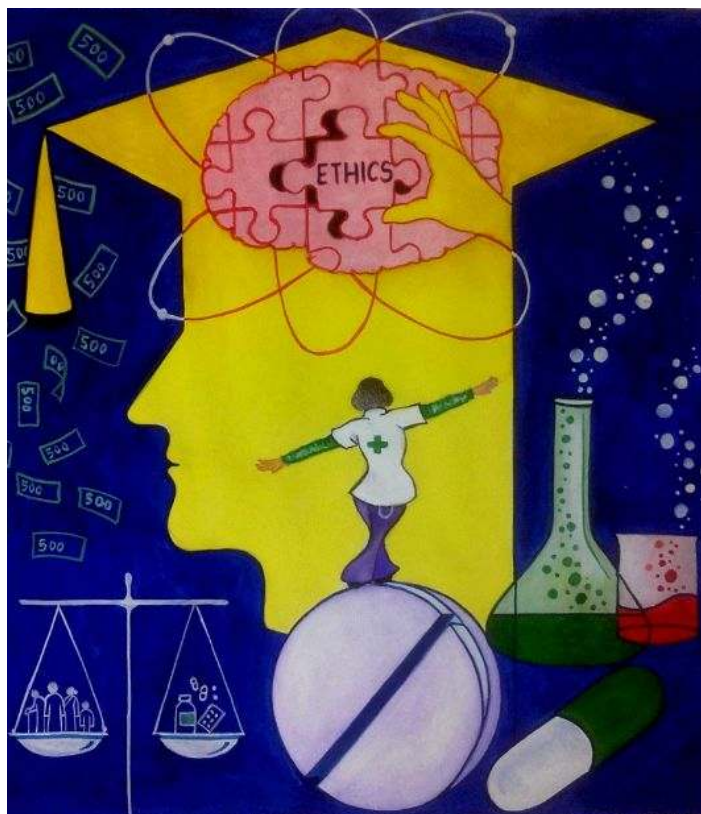
(Final Year B.Pharm.)

Luminaries

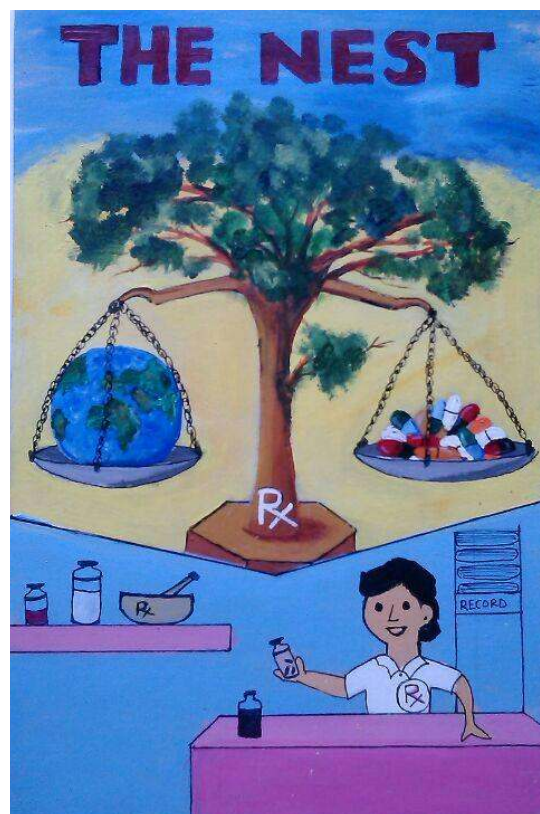
Celebrating Brilliance...

Winners of Poster making Competition on the theme - "Ethics in Pharmacy"

Cash prize of ₹ 1000 (first prize) was bagged by Sankalp Gharat (Final Year B.Pharm.) and ₹ 500 (second prize) was awarded to Viraj Khasgiwale (S.Y.B.Pharm.)



Ist Prize



IInd Prize

Winners of Poster presentation at the seminar 'Trends in Pharmaceutical Research and Development' held at MET IOP on 21st December 2013

First prize: Abhishek Nair, Soumya Chikermane, Shweta Sabbani and Shayaan Khatib.

Second Prize: Arjav Modi, Bijal Dalal, Mihir Patwardhan and Hetuk Shah. (Final Year B.Pharm.)



Topper List

Final Year

Rhythm Mitra

Mayuri Avhad

Nikita Shah

Third Year

Bijal Dalal

Dinesh Choudhary

Soumya Chikermane

Second Year

Chinmayi Naik

Vishakha Jain

Shweta Pancholi

First Year

Shrijal Mehta

Siddhi Kanakia

Hiral Patolia

Luminaries

Celebrating Brilliance...

ONGOING M.PHARM. SC. RESEARCH PROJECTS

S. NO.	NAME	TOPIC	GUIDE
1.	Vrushali Bhamere	Formulation and Evaluation of Mucoadhesive Drug Delivery System	Mrs. Bhagyashree Joshi
2.	Vikrant Kokane	Method Development and Validation	Dr. Sonali Naik
3.	Janhavi Durve	Bioanalytical Method Development and Validation on LCMS-MS	Dr. Sonali Naik
4.	Dharamraj Birader	Formulation and Evaluation of Solid Oral Dosage Form	Mrs. Nikita Sanghavi
5.	Prashant Nadavadeker	Formulation of Mouth Dissolving Tablets	Mrs. Sheeja Koliyote
6.	Aakash Sahu	Fabrication and Characterization of GRRDS	Dr. Abha Doshi
7.	Amol Rakamutha	Qualitative and Quantitative Accenment of Herbal Formulation	Ms. Vrushali Keer
8.	Siddesh Javery	Fabrication and Characterization of Buccal Patches	Dr. Abha Doshi
9.	Meshva Patel	Analytical Method Development and Validation of Solid Oral Dosage Form	Dr. Radhika Raheja
10.	Ashish Patil	Analytical Method Development and Validation of Biotin	Dr. Radhika Raheja
11.	Rajashree Patil	Formulation and Evaluation of Oral Drug Delivery System	Dr. Vijiya Patil
12.	Gopal Rathore	Formulation and Evaluation of Floating Drug Delivery System	Dr. Abha Doshi
13.	Rohan Shirsat	Formulation and Evaluation of Control Release Dosage Form	Mrs. Sheeja Koliyote
14.	Khusbhu Shah	Formulation and Evaluation of Herbal Gel	Dr. Rashmi Srivastava
15.	Monali Vashi	Formulation of ODT Using Natural Superdisintegrant	Dr. Rashmi Srivastava
16.	Sneha Shivalkar	Evaluation of Formulated Herbal Cosmetics	Ms. Vrushali Keer
17.	Santosh Lokhande	Method Development and Validation of a Drug	Dr. Vaishali Dixit

Let's Know Our Ethics

Ethical Dilemmas

Ethical dilemmas occur when there are disagreements on ethical behaviour or application of ethical principles. Each party might espouse a different principle according to their own view points. These ethical dilemmas most often affect the physicians but in an increasing cascade the other health care providers such as pharmacists are facing situations in their practice causing such problems.

The geometric increase in the information about the diseases with their corresponding treatments and the progress of pharmaceutical industries in terms of technology has caused a problem between the physicians and the pharmacists. The problem here is the flow of information among the professionals and between the professionals and the patients. Since the interrelationship between the physicians and the pharmacists has become more greater, it has become essential to understand and complement each other for a better and effective patient care. We often witness the patients not being told the truth for their benefit. The physicians set off the action and the pharmacists are expected to follow. With this the rights of the patients and consideration of duty to inform is rapidly diminishing.

The dilemma involves not telling the truth for patients benefit. What if the patients demand further information and suspects a fraud? In such rare cases the pharmacists choose to support the physician's call. But in the recent times we've been witnessing some changes in such behaviour. In a survey done by the Virginia University USA, the Students were seen having a legalistic approach towards such a situation and choose to educate the patients further. They were rather adamant for prescribing the generic over-the counter drugs as their schooling made them more comfortable with the quality of today's generic drugs than the older pharmacist who might have faced problems regarding it in their careers.

There are changes coming which will continue to modify the relationship between the physician and the pharmacist. We have now become more knowledgeable about illness and our diagnostic techniques have improved drastically. The pharmacists no longer rely on their physical skills in compounding but now dispense information and counsel patients. As pharmacists become more understanding about the disease state and their treatment they become more sensitive to the mistakes of their colleagues. Hence it is essential for us to work together towards progress and complement each other's strengths in order to achieve the best patient care. If we don't want the accountants to dictate how the health-care is delivered it is critical for us to discuss and clear out such ethical dilemmas.

Dipali Nagila
S.Y.B.Pharm.

Ethics in Pharmaceutical Industry

Prologue

"I can do no other than the reverent before everything that is called life. I can do no other than compassion for all that is called life. That is the beginning and foundation of all ethics"

- Albert Schweitzer

Ethics are the abstract notions that drive one's thought process beyond the limited precincts of the law to the vigil of one's own conscience. Ethics gain a high significance when it comes to life sciences. As a result ethics in the pharmaceutical industry too have a global prominence. In the context of pharmaceuticals, ethics apply in all areas such as research and development, manufacturing, pre-clinical and clinical research, product promotion etc. Briefly, I would like to outline the ethical considerations in each of these sub-domains.

Pre-Clinical Research

In-vitro pre-clinical research involves studies in cell lines and other such biologically active media. Ethical practices here should be intensive from the viewpoint of environmental protection and biological safety in terms of having enough control that potential pathogens are not released from the controlled environments of the labs to the uncontrolled environment outside. Controlled mutations in such studies have the potential to accidentally generate

Let's Know Our Ethics

pathogens. All such potential hazards must be given due consideration in the planning of such labs and designing and execution of such studies. While the existing laws do enforce some control, a self driven ethical mind set would be real control in such studies, because of the limited range in which law can verbalize the plethora of possibilities here.

In-vivo pre-clinical studies are the ones that are carried out on animals. Such studies have been subject to raging debates since the middle of the 20th century. Pharmaceutical innovators have reasoned to sufficient lengths that this is a necessity which must be undertaken to curtail the potential risks associated with the introduction of such novel entities in humans for the first time. While pre-clinical research is permitted, ethics must prevail to ensure that the permission to conduct research in animals is not used indiscriminately. All studies must have a sound rationale and specific endpoints. All protocols must be critically reviewed by a neutral ethics control group. The number of animals to be used in each study must be scientifically reasoned and kept to a minimum. The conditions the animals will be subjected to must be ethically evaluated and the potential pain and damage must be minimized to as low a level as reasonably possible. The findings of such studies too should be critically evaluated by the ethics committee to ensure that the study was conducted for and concluded to a good reason. Emphasis must be placed on a public reporting of such findings to ensure that there is no duplication of effort leading to unnecessary subjugation of animals in repetitive studies elsewhere.

Clinical Research

The goal of clinical research is to develop knowledge that improves human health or increases understanding of human biology. People who participate in clinical research make it possible to secure that knowledge. The path to finding out if a new drug or treatment is safe or effective, for example, is to test it on patient volunteers. But by placing some people at risk of harm for the good of others, clinical research has the potential to exploit patient volunteers and thus gives rise to ethical concerns. Informed consent of the subject, assent of the relatives in applicable cases, rational definition of the inclusion/exclusion criterion and ethical adherence to those, make the crux of the ethical review of clinical programmes. Double blinding and randomization of patients are important aspects that keep the clinical trial fair and neutral to all participants. The compensation and indemnity granted to the participants carries important ethical significance. Review boards and ethical committees instituted to control and approve protocols for clinical trial must be of a neutral composition and should ensure that participants are not exposed to undue risks in the study. The government plays a pivotal role here in terms of having legislation and enforcement that protects its population from unethical clinical research but at the same time doesn't inhibit innovation for the greater good of human kind.

Manufacturing and Distribution

While most countries have a legal framework governing registration, manufacture, trading and distribution of medicinal products and while that framework is very well enforced in a pharmaceutical company by teams such as quality assurance and regulatory compliance, it is the ethical mind set of the everyday worker that may make smaller and sometimes larger differences to the end patient. Policies devised by experts may exercise control over how drugs are produced and released, but companies must strive to build a mind set in all workers where that encourages the worker to think of the potential hazards that an end user may face for a lapse that may seem innocuous to a naïve observer. Factory personnel must be encouraged to discuss with their seniors, whenever in doubt, about any potential concern they might have about a batch or a product. Encouragement of such attitude is likely to harbor better compliance than formal policies.

Marketing & Promotion

The ethical promotion of prescription medicines is vital to the pharmaceutical industry's mission of helping patients by discovering, developing and promoting new medicines. Ethical promotion helps to ensure that healthcare professionals globally have access to information they need, that patients have access to the medicines they need and that medicines are prescribed and used in a manner that provides the maximum healthcare benefit to patients. Any promotional activity that influences a prescription without a justified necessity is considered unethical. All promotional material must be legitimate and backed by sound scientific justification. Promotion for any attribute that is not

Let's Know Our Ethics

substantiated clinically or is misleading in any way is considered unethical. Ethics must prevail in any promotional tactics being used by a pharma company for healthcare professionals, for it may lead to prescription practices that may not be in the best interest of patients.

The prices at which drugs are sold have been a cause for a compelling debate calling into question the ethics of pharma companies. Prices must strike a balance between maintaining the commercial viability for the company and the affordability for the public in general. Companies must have special sensitivity in terms of pricing for underdeveloped countries, so that the healthcare needs of the needy patients are not hurt.

Epilogue

While current researchers would agree to my thoughts outlined above, I am hopeful that the above outline provides a holistic perspective to the future healthcare professionals reading it. It is evident that every step in the pharma value chain is fraught with ethical challenges which must be met in a righteous way. I would implore future pharmacists and researchers to take cognizance of such ethical dilemmas they are likely to face in the future and imbibe in them the mindset that helps them to address these concerns in the most humane way possible

Mukund Ranade
President & Executive Director
Emcure Pharmaceuticals Limited

Ethics in Quality Control

Quality control ensures that the drug substance and other raw materials are suitable for use in the drug product and that the products manufactured for sale meet the highest quality standards. The department carries out a number of tests as per the specifications on various raw materials, intermediates and finished products. Raw materials are not released for production or finished products are not released for sale unless and until they are approved by the quality control department. Ethical practices should be followed especially by this department because testing if not performed as per the specifications can result into increased rejections/recalls and complaints from the market. The ultimate aim of any drug manufacturing procedure is to ensure that the drug has the required identity, strength, potency, purity and quality. Testing will not only control the quality but it is also important that the entire process from procurement of raw materials to final distribution of the drug in the market is validated. It is important to know the subject well if ethical practices have to be followed.

Assays in the QC department are not performed up to the mark and a lot of malpractices are followed either in the procedure or calculations. Proper techniques should be followed in handling of all the reagents and in preparation of the standards.

Ethical practices in documentation should never be practiced and data to be shown to the regulatory authorities should not be forged to get approvals. SOPS should be critically followed. All entries have to be written in ink along with the date/sign/initials of the responsible person. Spectrums obtained from analytical techniques should never be changed neither should one manipulate the readings. Cleaning of equipments should never be done carelessly else there is a huge possibility of cross contamination from the previous batch. It is important to inculcate the importance of this industry to the work floor personnel who perform the cleaning operations. Proper gowning and hygiene in all the departments should be followed to avoid contamination. Illness of any kind should be ethically reported to the supervisor. Not only can this affect the drug product but also the other personnel working in the organization. In a highly regulated industry such as Pharma, every drug has to be carefully manufactured because a small mistake can affect many lives. Ethics combined with regulations can give a consistent product with batch to batch uniformity and reproducibility.

Mrs. Nikita Sanghavi, Lecturer
Mamta Parekh, T.Y.B.Pharm.

Let's Know Our Ethics

Ethics in Drug Designing

"Ethics is knowing the difference between what you have a right to do and what is right to do."

—Potter Stewart

Drug designing is the inventive process of finding new medications on the basis of the knowledge of the biological target. For example, the structure of a receptor maybe known, a drug which has a structure complimentary and charge opposite to that of the receptor will interact with the receptor causing its activation or inactivation thus leading to a pharmacological response. However, the term drug design is a misnomer, drug design is nothing but designing of a small molecule that will bind to the receptor. Many other parameters of the ligand (small molecule) have to be checked and verified before it can be called a drug.

The Pharmaceutical market is rising in value as each day progresses. As the business grows, the laws increase but there are certain aspects which cannot be governed by the law and will always vary from a company to another and fall under the heading, ethics. As we discuss ethics in drug designing, it is important not to confuse this with ethics in clinical trials. Clinical trials are at a much later stage of the medicine production with drug designing being the very first.

With the computer doing almost anything and everything in today's world, drug designing is no exception. The specifications and needs are fed into the computer and making use of high-end software like CADD (Computer Aided Drug Designing) a theoretical molecule is obtained which fits the needs. Now is the real challenge, putting the theoretical work into applicative purpose. This involves trying to synthesize the same drug molecule in the lab. Most of the pharmaceutical chemicals are non-biodegradable. Be it in the gaseous form released into the air, solid form being dumped in some corner of mother earth or liquid form which is just insidiously pumped into the water body around. Drug discovery takes a lot of years and countless number of trial and errors. When we think about this, our first question should be, what about all the chemically active wastes produce during the process? The lab synthesis may not have the activity we desire but may have other activity. The chemicals enter our environment and remain in it for almost unlimited period of time. There are documented proofs of the chemicals in our environment which have been present since decades and still continue to harm the microorganisms and wildlife in severe and unexpected ways. Trial and error methods may make use of various organic and inorganic compounds and specially solvents. What is the fate of these solvents? Do companies make it compulsory to treat any toxic effluents before they are discharged? Well, we could expect them to do that at their manufacturing level since the law may require them to do so but maybe not at the drug designing level. One may assume the volumes are too small and they are too less to cause any damage. But over a period of time, the amount is more than substantial. As there are thousands of different synthesized chemicals present at the same time in the environment, different interactions may occur and the result of these multiple exposure in human and nature are not sufficiently studied or understood. The damage from this has no end. Untreated waste today will show its effects for decades to come and then there is no turning back. Yes, drug designing is needed. We need new drugs to counter newer diseases or which may be cheaper alternatives to the ones already present. The need for newer antibiotics isn't a hidden concern. But at what cost? This is a matter which probably no law can govern. It is a matter of ethics, a situation where you have to give importance to your role and contribution to the society and environment around you than just the short term money making selfish mentality which most of us have.

Where the earlier stanza discusses ethics in drug designing with respect to the environmental concerns, ethics during drug designing also play an important role from the pharmaceutical company point of view. To design a totally new drug, not only does it take sumptuous amount of money, it also takes decades of hard work and dedication by the researchers to develop one new drug design. Sometimes a new drug maybe developed successfully, it fits in all the theoretical criteria correctly but this drug fails in the clinical trials. This only goes on to show how unjust the process can be but it is still essential and a successful drug can go on save the lives of millions. In such a scenario, when a company develops a new drug and it passes the clinical trials, it has patent for it. That is, no other company can manufacture or sell the same drug for a stipulated period of time. This is a necessity since the company needs to recover the millions of

Let's Know Our Ethics

dollars it might have put into research and this patent period also encourages further research. But there is a twist to this which is making investment into the R&D department unfavorable. Each active molecule has a specific structure. This structure is the one which gives the molecule its pharmacological activity. Once the company has discovered the molecule and its actions have been proved, it applies for the patent for that structure and then goes on further to launch it as a medicine post clinical trials. Now this drug is in the patent period and cannot be manufactured or launched by another company. But there have been cases in the past where, another company will take the same chemical structure of the molecule, take stereoisomers of the same structure or make other extremely changes such as replacing a methanol group with an ethanol one. In layman language, making very minute structural changes which doesn't hamper the pharmacological action. This modified structure isn't patented for and has the same action as the actual drug hence it can also be launched as a drug. This creates competition in the market and prevents the original company from earning what actually is its right. A drug has a very complex structure with various bonds and groups. There are almost infinite numbers of small changes that can be made and there is no law which can govern and prevent this from happening. However companies have now learned from this, when they apply for a patent for a new drug, they also tend to apply for a patent for drugs which may be obtained even with the smallest of structural changes. This minimizes the chances of other companies trying their unethical methods and even if tried, they might infringe the patent of the original company.

All said and done, certain issues will never be governed by the law and will always be up for debate with respect to its need and rightfulness and for such issues coming to a conclusion is extremely difficult because each person feels different with respect to these. However, people and companies are getting more aware about their role in the society. A company may be right according to the law but certain unethical actions do blemish the company reputation which it might have gained over a very long period of time. This fear keeps them from performing unethical actions. Hence I would like to conclude by quoting the words of Albert Campus, "A man without ethics is a wild beast loosed upon this world." A person who believes in ethics and ethical methods of operation speaks large volumes of his selflessness and magnanimity. If all of us could follow the same someday, it will be a better place to live in.

Arijav Modi, Shayaan Khatib, Hetuk Shah
(Final Year B.Pharm.)

Ethics regarding cosmeceuticals

Ethics is study of human behaviour that what is wrong or right. Unethical practices in cosmetic industry include testing on animals, providing substandard goods across different countries, misleading advertisements, providing goods in wrong quantity and harmful ingredients in the products.

Reasons behind unethical practices in cosmetic industry are mostly high profits and great market share.

There has been promotional use of before and after photographs that use different lighting, poses or photographic techniques to misrepresent results seen. There are exaggerated claims intended to create false or unjustified expectations of favourable surgical results.

The consequences of unethical practices are business losses, loss of trust and damage to the image.

The professionals of cosmetic industry should maintain high professional standards consistent with sound practices and to conduct business relationships in a manner that is fair to all. The members should refrain from any immoral or unethical behaviour in their business dealings. They should strive to participate in continuing education to upgrade and improve their knowledge and skills. Members should utilise safe practices of sterilization of all machine or device components that can be potentially be contaminated by blood borne pathogens. Disposable parts, including needles, not be reused.

Yutika Shirsat
T.Y.B.Pharm.

A Pot Full of Ideas

Scientific Wonders

The God Particle – Higgs Boson

Sir J. J. Thomson's discovery of electron and proton and the discovery of neutron by Chadwick (1932) and the experiment on scattering of alpha particles led to the Rutherford model of nuclear atom.

The Nobel prize in physics was awarded to two physicists Peter Higgs and Francois Englert for their theoretical discovery of mechanism that contributes to our understanding of the origin of mass of subatomic particles. The existence of a particle, Higgs boson, was predicted in 1964 by the two physicists.

The question that has been baffling the scientists is "Why fundamental particles have mass?" It is known that photons have no mass, whereas W and Z bosons have mass 100 times that of a proton. Three scientists Brout-Englert-Higgs proposed mechanism to explain the mass possessed by the particles. The particles acquire mass when they interact with the invisible field called the Higgs field which pervades the universe.

The creation of universe is explained by the 'Big Bang' theory. Just after big-bang the Higgs field was zero, but as the universe cooled and the temperature fell below a critical value, the field grew spontaneously and any particles interacting with it acquired a mass. The more a particle interacts with this field the heavier it is. Particles like photon do not interact with it and have no mass. The Higgs field has an associated particle called Higgs boson (or God particle). The Higgs boson is visible manifestation of Higgs field, which is energy field that transmits mass to the object that travels through it.

CERN's Large Hadron Collider (LHC) is used to collide highly accelerated positive particles (almost reaching the speed of light), such as protons to produce energies simulating those 1 trillionth to 2 trillionths of a second after the Big Bang. Finding the Higgs particle required participation of thousands of scientists from all over the world and monument of data from trillions of colliding protons. Two scientists from TIFR (Tata Institute of Fundamental Research), Mumbai had participated in the project. They had their contribution in the detectors used in the LHC: The detector is used to detect the number of subatomic particles that are produced after the collision of the protons. A Higgs boson is one of those particles.

CERN is an European Organization for Nuclear Research acronym for French "Conseil Europeen pour la Recherche". The LHC is a seventeen mile track buried under ground outside Geneva (beneath Franco-Swiss border) that brings about the collision between the high speed protons. The amount invested to build LHC is about six billion dollars. Higgs boson particle predicted in 1964, was detected in July 4, 2012 and confirmed on the 13th March 2013. The mass of the Higgs boson is about 126 GeV and has a life of about 10⁻²² seconds. Its spin is zero, as predicted and is a scalar particle. It is unstable and decays into other particles. Belgium. Physicists Francois Englert and British physicist Peter Higgs were awarded Nobel Prize on October 8, 2013 as stated earlier.

The word boson was used to honour S.N.Bose, an Indian Physicist, for the work he did with Alber Einstein on defining the general properties of all bosons.

The particles quarks and leptons, together called fermions are the building blocks of matter. Today it is known that the matter particles interact with each other through other particles such as photons, W and Z bosons, gluons and the Higgs boson.

How the Higgs boson particles will be helpful to the mankind, we do not know at this stage.

Let us salute the great Physicists – Englert and Higgs!

Dr. U. B. Hadkar
Director (IOP)

A Pot Full of Ideas

Permanent Cosmetic Makeup

Permanent cosmetic makeup is a technique to introduce pigments into the upper dermis of skin, thus imparting a long life. It serves the advantage of improving appearance by correcting imperfections.

Ideal candidates for the procedure are:

1. Athletes and dancers sweating profusely do not have to worry about smudging.
2. Those physically challenged by arthritis or multiple sclerosis or vision impairment finding difficulty applying makeup.
3. Candidates with alopecia universalis having missing eyebrows can opt.
4. Those needing concealment of imperfections like scars, burn marks or leucoderma patients.

Permanent cosmetic makeup for the face includes eyebrows, eyeliner, lip colour, blusher.

The procedure is as follows:

1. A local anaesthetic like lidocaine is applied over the area to be treated.
2. A hollow vibrating needle attached to the makeup applicator is dipped into the pigment of choice and introduced into the dermis.
3. An antiseptic like bacitracin is applied over the area.

Three kinds of equipment are used:

1. Softap
2. Dynasty 2000, Sapphire
3. Nouveau Contour Intelligent

Permanent cosmetic inks are composed of:

1. Pigments – organic (alizarin) or inorganic (iron oxides)
2. Diluent or carrier which maintains the pigment in a suspension form (propylene glycol)

The procedure costs \$200 to \$1000 depending upon the area to be treated.

The FDA has strict vigil over the inks that are used for the procedure. The Society for Permanent Cosmetic Professionals and the American Academy of Micropigmentation offer a course curriculum so that certified professionals are licensed to carry out the procedure by observing adequate safety measures.

In India, Permanent cosmetic procedures are carried out at the Blush Clinic founded by Dr. Jamuna Pai.

Although some may perceive it as expensive and unnecessary, opting for Permanent cosmetic makeup is a personal choice as it not only aims at improving the appearance but also enables one to conceal flaws.

Ms. Priyanka Joshi
Lecturer

Gold Nanoparticles as Novel Drugs for Cancer Therapy

Gold nanoparticles are emerging as promising agents for cancer therapy and are being investigated as drug carriers, photothermal agents, contrast agents and radiosensitisers. This article introduces the field of nanotechnology with a focus on recent gold nanoparticle research which has led to early-phase clinical trials. In particular, the pre-clinical evidence for gold nanoparticles as sensitisers with ionising radiation in vitro and in vivo at kilovoltage and megavoltage

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energies is discussed.

Nanotechnologies can be defined as the design, characterisation, production and application of structures, devices and systems by controlling shape and size at a nanometre scale.

In medicine, most interest is in the use of nanoparticles to enhance drug delivery with interest also in in vitro diagnostics, novel biomaterial design, bioimaging, therapies and active implants. The most studied nanoparticles are carbon nanotubes, gold nanoparticles (GNPs) and cadmium selenide quantum dots.

Common oxidation states of gold include +1 (Au [I] or aurous compounds) and +3 (Au [III] or auric compounds). GNPs, however, exist in a non-oxidised state. GNPs are not new, in the 19th century, Michael Faraday published the first scientific paper on GNP synthesis, describing the production of colloidal gold by the reduction of aurochloric acid by phosphorous. In the late 20th century, techniques including transmission electron microscopy (TEM) and atomic force microscopy (AFM) enabled direct imaging of GNPs, and control of properties such as size and surface coating was refined. Common methods of GNP production include citrate reduction of Au [III] derivatives such as aurochloric acid (HAuCl_4) in water to Au (0) and the Brust–Schiffrin method, which uses two-phase synthesis and stabilisation by thiols. In recent years there has been a phenomenal growth in GNP research, with a rapid increase in GNP publications in diverse fields including imaging, bioengineering and molecular biology.

GNPs show unique physicochemical properties including surface plasmon resonance and the ability to bind amine and thiol groups, allowing surface modification and use in biomedical applications.

There has been considerable debate about the mode of entry of GNPs into cells, with the most likely mechanism being non-specific receptor mediated endocytosis. In vivo, even in the absence of functionalisation, nanoparticles passively accumulate at tumour sites that have leaky, immature vasculature with wider openings than normal mature blood vessels. This is known as the enhanced permeability and retention (EPR) effect.

There is a super interest in modifying existing drugs to improve pharmacokinetics, thereby reducing non-specific side effects and enabling higher dose delivery to target tissues. An important demonstration of the potential of multifunctional GNPs for drug delivery was the use of 5-nm GNPs as a delivery vehicle, covalently bound to cetuximab, as an active targeting agent and gemcitabine as a therapeutic payload in pancreatic cancer. The epidermal growth factor receptor (EGFR) is overexpressed in up to 60% of pancreatic cancers and the combination of cetuximab and gemcitabine has been investigated in Phase II trials of this disease. Patra et al demonstrated that high intratumoural gold concentrations ($4500 \mu\text{g g}^{-1}$) could be achieved using this approach compared with $600 \mu\text{g g}^{-1}$ with untargeted GNPs with minimal accumulation in the liver or kidney. The GNP–cetuximab–gemcitabine nanocomplex was superior to any of the agents alone or in combination in vitro and in vivo. Low doses of complex gemcitabine (2 mg kg^{-1}) led to >80% tumour growth inhibition in an orthotopic pancreatic cancer model compared with 30% inhibition using the non-conjugated agents in combination.

While GNP radiosensitisation has been observed in many studies, much work has been phenomenological and the mechanisms by which sensitisation occurs remain unclear. Most researchers have attributed GNP radiosensitisation to increased photoelectric photon absorption by high-Z materials at kilovoltage photon energies. However, if sensitisation occurs by this physical mechanism, effects would not be predicted to occur at clinically relevant megavoltage energies where Compton interactions are dominant. For clinical translation and optimisation of effect, it would be beneficial to know the importance of GNP size, concentration, surface coating and distance from target material such as DNA on GNP-mediated radiosensitisation. Knowledge of the range and type of secondary energies released from the nanoparticle, such as short-range low-energy electrons, Auger electrons, photoelectrons or characteristic X-rays, and in turn how they vary with primary photon energies would also enable the development of more rationally designed GNPs for use with radiation. Some of the studies attempting to address these complex issues are discussed below. The concept of high-Z radiation dose enhancement has been known for many years. This is a physical concept which makes use of the much greater photoelectric photon absorption in high-Z materials compared with soft tissue, particularly at kilovoltage photon energies, as demonstrated in Figure 4. Increased radiation side

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effects have been observed at the interface with high-Z materials owing to greater absorption of photons and deposition of energy in surrounding tissue from photoelectrons, Auger electrons and characteristic X-rays. In therapeutic terms, if a high-Z material is present at higher concentrations in the tumour than in normal tissue, an improvement in the therapeutic index should be realised. Much work has been carried out with iodine ($Z=53$), a commonly used contrast agent; Matsudaira et al demonstrated increased cell killing in an in vitro cell model with iodine added to growth medium. Santos Mello achieved an intratumoural concentration of 5 mg ml^{-1} iodine and demonstrated reduced tumour growth delay in a rabbit model. These results led to a Phase I feasibility trial in which 8 patients received 3–5 weekly 5-Gy boosts with 140-kVp X-rays to intracranial metastases while undergoing whole brain radiotherapy with 40 Gy in 20 fractions over 4 weeks with 6-MV photons. IV iodine contrast medium was administered prior to radiation and 140-kVp X-rays were delivered in 360° rotations in three planes to minimise skull dose. Brain metastases were measured on weekly CTs prior to and during treatment. Of eight patients treated, there was one complete response and four partial responses to therapy with no increase in early or late radiation side effects.

Hope for treatment of Cervical Cancer:

Researchers from Ferdowsi University of Mashhad in association with their colleagues from Mashhad University of Medical Sciences used gold nanoparticles as perfect carrier to deliver the hydrophobic protoporphyrin molecule to cancerous cells ("Protoporphyrin IX–gold nanoparticle conjugates as an efficient photosensitizer in cervical cancer therapy").

In this research, results showed that the coupled nanoparticles can be considered effective candidate in the treatment of cancer in general, and as a sample in the treatment of cervical cancer.

Gold nanoparticles were designed and synthesized in the present study, and their application was studied in the treatment of cancer. The aim of the study was to investigate the effect of photodynamic therapy in the presence of gold nanoparticles coupled with protoporphyrin on the life of cervical cancer cells.

Results of the research showed that the synthesized coupled gold nanoparticles can be used as a very effective carrier to take photosensitizer into the cells to treat cervical cancer cells. In addition, results obtained from verification test showed that the synthesized coupled nanoparticles are a very effective parameter in photodynamic treatment of cervical cancer cells.

Morphologic images of the cells depict that cellular death has happened in a large number of the cancerous cells. The cores of the majority of the cells were divided into some individual colorful parts. Moreover, the thickness of the color in the core was stronger than the color in the living cells, which proved that apoptosis has happened.

Gold nanoparticles coupled with porphyrin photosensitizers can be widely used in medical industry in the treatment of diseases due to their curing specifications and importance.

Ankita Satoor
T.Y.B.Pharm.

Nutraceuticals: The Most Self Medicated Products

In 2010, the Indian nutraceutical market approximately stood at \$20 billion. It was a pretty huge amount even after considering the functional foods and beverages. It has always been a common belief that loading yourself with supplements would enhance your physical and mental abilities though never is proven to be true. Results of surveys regarding the same, be it vitamins or minerals is conflicting. The concept of taking a vitamin supplement is not only fueled by the advertisements but also by the medical professionals. Most of the prescriptions that are given contain either a vitamin or a mineral supplement or both. Mostly these supplements are vitamin B complex or Vitamin C. These

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are water soluble vitamins. Excess of these vitamins are excreted in the urine after giving a fluorescent yellow colour due to presence of riboflavin. Though it was previously assumed that Vitamin B complex was devoid of toxicity because it was excreted out, there have been reports of toxicity by excess of Vitamin B6. Symptoms like pain, numbness, difficulty in walking, have been observed in extreme cases when the patient has taken more than 1000mg per day. Most of these supplements are self medicated and tend to exceed the normal dosage, which later has adverse consequences. Thus it is very important to know which vitamins can be self medicated and which needs to be prescribed in order to prevent its adverse consequences. The proverb, "Prevention is better than cure" can be completely personified here.

Sahana Ray
T.Y.B.Pharm.

Banned Drugs

There are several drugs which are banned in developed markets, like The US and Europe, but are freely and readily available in India. Should this be the reason to be worried?

Experts feel that some of these drugs have been proved to be more harmful than efficacious. Not all drugs that are banned abroad need to be banned here in India as well. A drug is approved on the basis of its risk-benefit ratio where the benefit far outweighs the risk. But the risk-benefit ratio is context specific and dosage specific.

If a drug has been found to be non-efficacious or found out to have serious side effects or the manufacturer itself has withdrawn it, then it needs to be pulled out of the Indian market as well. Drugs like Buclizine, Oxyphenbutazone, Furazolidone, Nitrofurazone fall under this category. On the other hand, in case of some common cough and cold medicines that contain Phenylpropanolamine (PPA), which was banned by Central Drugs Standard Control Organization (CDSCO) for some serious side effects, the ban has been stayed by the Madras High Court. Many Pharmaceutical companies continue to market drugs containing PPA. Once a drug is banned, a clear publicity should be made about it to all stakeholders- doctors, chemists and patients.

At times an otherwise harmful drug can be very effective to treat a more severe condition. For instance, Thioridazine, an anti-psychotic drug has been found to be effective in the treatment of multi-drug resistant Tuberculosis but is the cause of a fatal condition called neuroleptic malignant syndrome. Quinodochlor, an anti-diarrhoeal drug, is known to cause blindness among the Japanese people-a phenomenon termed as pharmacoeconomic variation of a drug. But there is no logic to ban a drug in India just because it is banned in Japan.

CDSCO has banned 91 drugs in India. The stockiest sales audit data of IMS for the month November 2012 shows that there are 21 brands being sold in the Indian market, which have cumulative sales of over 4.8 crore, containing the banned drugs in violation of the law. An instance highlighting the poor governance structure in India! People can get away with anything these days!

These drugs were manufactured by not just small players but also by some of the largest pharmaceutical companies in India, besides multinational companies.

Self-medication is the other threat among the people of India. For a simple cold or cough or some pain the affected ones goes to the medical stores or nearby pharmacy and purchase some drugs not knowing these simple symptoms are the part of the big picture. Let's stop self-medication and put a habit of visiting hospital or a medical practitioner so as to make a better healthy habit.

Ujjwal Yadav
T.Y.B.Pharm.

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General principles of prescribing

- Doctors with full registration who hold a licence to practice may prescribe all medicines, but not those drugs in Schedule 1 of the Misuse of Drugs Regulations 2001. If you have provisional registration and hold a licence to practice you may prescribe medicines in line with the supervisory conditions of your employment.
- For information about the relevant legislation, including the Medicines Act 1968 and the Misuse of Drugs Act 1971, we can check the Home Office website and the British National Formulary. Medicine legislation applies throughout the UK.
- You should only prescribe drugs to meet identified needs of patients and never for your own convenience or simply because patients demand them. Avoid treating yourself and those close to you.
- Objectivity is essential in providing good care independent medical care should be sought whenever you or someone with whom you have a close personal relationship requires prescription medicines. Keeping up to date and prescribing in patients' best interests
- When prescribing medicines you must ensure that your prescribing is appropriate and responsible and in the patient's best interests. To do this you must:
 - a) Ensure you are familiar with current guidance published in the British National Formulary and BNF for Children, including the use, side effects and contraindications of the medicines that you prescribe. You should be aware of the guidance about the clinical and cost-effectiveness of interventions published by various recognized institutes and organisations.
 - b) Be in possession of, or take, an adequate history from the patient, including: any previous adverse reactions to medicines; current medical conditions; and concurrent or recent use of medicines, including non-prescription medicines.
 - c) Reach agreement with the patient on the use of any proposed medication, and the management of the condition by exchanging information and clarifying any concerns. The amount of information you should give each patient will vary according to factors such as the nature of the patient's condition, risks and side effects of the medicine, and the patient's wishes. Bearing these issues in mind, you should, where appropriate:
 - I. Establish the patient's priorities, preferences and concerns and encourage the patient to ask questions about medicine taking and the proposed treatment
 - II. Discuss other treatment options with the patient
 - III. Satisfy yourself that your patient has been given appropriate information, in a way they can understand, about: any common adverse side effects; potentially serious side effects; what to do in the event of a side-effect; interactions with other medicines; and the dosage and administration of the medicine;
 - IV. Satisfy yourself that the patient understands how to take the medicine as prescribed
- When prescribing for a patient you should:
 - a) Prescribe dosages appropriate for the patient and their condition
 - b) Agree with the patient arrangements for appropriate follow-up and monitoring where relevant. This may include: further consultations; blood tests or other processes for adjusting the dosage of medicines, changing medicines and

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issuing repeat prescriptions.

- c) Inform the Medicines and Healthcare products Regulatory Agency of adverse reactions to medicines reported by your patients in accordance with the Yellow Card Scheme. You should provide patients with information about how to report suspected adverse reactions through the patient Yellow Card Scheme.
- d) Make a clear, accurate, legible and contemporaneous record of all medicines prescribed.
 - If you prescribe at the recommendation of a nurse or other healthcare professional who does not have prescribing rights, you must be satisfied that the prescription is appropriate for the patient concerned and that the professional is competent to have recommended the treatment. Keeping patients' general practitioners informed
 - If you are not the patient's general practitioner and you accept a patient for treatment without a referral from the patient's general practitioner, then you must:
 - (a) Explain to the patient the importance and benefits of keeping their general practitioner informed
 - (b) Inform the patient's general practitioner, unless the patient objects
 - (c) Where possible, inform the patient's general practitioner before any treatment is started, unless the patient objects to this disclosure.
 - If the patient does not want their general practitioner to be informed, or has no general practitioner, then you must:
 - (a) Take steps to ensure that the patient is not suffering from any medical condition or receiving any other treatment that would make the prescription of any medicines unsuitable or dangerous.
 - (b) Take responsibility for providing all necessary after care for the patient until another doctor agrees to take over.

Sahana Ray
T.Y.B.Pharm.

Nanosuspension - A Novel approach in Drug Delivery System

A considerable interest in the development of novel drug delivery systems using nanoparticles is emerging in recent years. Nanoparticles represent a promising drug delivery system of controlled and targeted release. Though a number of formulation approaches like micronisation, solubilization using cosolvents, precipitation techniques etc., are used to overcome low solubility and bioavailability issues, still these techniques possess their own limitations. Nanosuspension technology offers novel solution for these poorly soluble drugs by offering plenty of advantages like improved efficacy, reduced toxicity, increased solubility and bioavailability, enhanced biodistribution and improved patient compliance. Nanosuspension is defined as a biphasic system consisting of poorly water soluble drug particles dispersed in an aqueous vehicle in which the diameter of the suspended particle is less than $1\mu\text{m}$ in size. Nanosuspension enhances the solubility and bioavailability, improves the physical and chemical stability of drugs, and provides a passive drug targeting. It is suitable for hydrophilic drugs, higher drug loading capacity can be achieved with a reduction in dose. The principle techniques used in recent years for preparing nanosuspensions can be classified into four basic methods: (a) wet milling, (b) homogenization, (c) emulsification-solvent evaporation and (d) supercritical fluid method. Wet milling method uses high-shear media mills or pearl mills. Homogenization involves forcing of the suspension under pressure through a valve having a narrow aperture. Emulsification-solvent evaporation technique involves preparing a solution of drug followed by its emulsification in another liquid that is a non-solvent for the drug. Evaporation of the solvent leads to precipitation of the drug. Super critical fluid technology involves expansion of the drug solution in supercritical fluid through a nozzle, which leads to loss of solvent power of the supercritical fluid resulting in precipitation of the drug as fine particles. Newer technique called nanojet technology uses a chamber

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where a stream of suspension is divided into two or more parts, which colloid with each other at high pressure. The high shear force produced during the process results in particle size reduction.

PHARMACEUTICAL APPLICATION: Nanosuspension showed a promising way of improving drug delivery in pulmonary (eg. Budesonide) and ocular route (eg. Cloricromene). In azithromycin oral nanosuspensions, more than 65% drug was found to get dissolved in 5 hours as compared with 20% of micronized drugs. Ketoprofen nanosuspension was successfully incorporated into pellets for the sustained release of drug over the period of 24 hours. Paclitaxel nanosuspension administered parenterally showed superiority in reducing the median tumor burden. Clofazimine nanosuspension showed an improvement in stability as well as efficacy above the liposomal clofazimine in *Mycobacterium avium*-infected female mice. In targeted drug delivery, these can be used for targeting antifungal, antimycobacterial, or antileishmanial drugs to macrophages, eg. aphidicolin nanosuspension. Oral administration of the gonadotrophin inhibitor Danazol as a nanosuspension showed increase absolute bioavailability compared to the conventional dispersion. Nanosuspensions greatly increases oral absorption of drugs like Amphotericin B. Also improves bioavailability of poorly soluble drugs like oleanolic acid, a hepatoprotective agent. Examples of marketed nanosuspension: Rapamune by Wyeth, Emend by Merck used as immune-suppressant and anti-emetic respectively.

Thus nanosuspension not only solves the problems of poor solubility and bioavailability but also alters the pharmacokinetics of drug and thus improves drug safety and efficacy. This technology confer a series of special characteristics to the drugs, such as the enhanced dissolution rate and saturation solubility and has obtained great success in the preparation of insoluble drugs.

Dinesh Choudhary
Final Year B.Pharm.

Quick Paper Based Test For Tuberculosis

Centuries passed by since the identification of various micro organisms causing tuberculosis (*Mycobacterium tuberculosis*, *M. Africanum*, *M. Bovis*) but the disease still remains a challenge globally. According to the estimates by the World Health Organisation, there were 8.7 billion new cases and an alarming high death rate of 1.4 million in 2013. So in an attempt to curb the disease, various research projects and case studies are being conducted. In a study published in the journal of science and technology of advanced materials, researchers in Taiwan described a simple colour based diagnostic approach for the disease. The standard method for TB detection in clinical setting involves the culturing of *M. Tuberculosis* bacilli which requires 3-6 weeks to grow on solid culture media or 9-16 days in rapid liquid culture media. A faster alternative is the polymerase chain reaction technology, though it is still slow (2-5 hours) and requires sophisticated infrastructure and trained personnel.

In their paper, Tsung-Ting Tsai along with his colleagues employed gold nano particles and microfluidic paper based analytical device to achieve rapid diagnosis. They could easily detect the mycobacterium target sequences and the turnout time as low as 1 hour after human DNA was extracted from the patient. Although, the authors or researchers are still optimising the technology, it is believed to be effective, rapid and robust giving more efficient results than its predecessors.

Mansi Shah
Final Year B.Pharm.

Charity

“There is no exercise better for the heart than reaching down and lifting people up”

Charity has been a long and proud tradition of the Indian culture. From the times of ‘Raja Harishchandra’ till date, Indians who have been blessed, have shared their love and goodwill the less fortunate. However, somewhere along the line ‘the act of charity’ has lost its meaning. It has now become a publicity stunt for the film industry and just another way of showing off their wealth for the elite

“Charity is not about donating your extra things; it’s about getting things you are in just as much need of”. The biggest hearts are not the people who donate ‘a 1000’ from their millions but those who inspire thousands to donate from their meager salaries.

One such heroic human is ‘Prof. Sandeep Desai’ of the ‘S.P.Jain Institute of Management’ commonly known as the ‘the professor who begs for the poor’. He has taken the initiative to start up an English school in the rural areas of Maharashtra and Rajasthan, through his initiative of ‘vidya daan’, starting his campaign in 2001; he has successfully started up five different schools. He has also been recognized and been written about in many leading newspapers. Donations can also be made through a cheque to his foundation ‘shloka missionaries’

I salute this inspirational personality who has been working for the better for the past decade and still has the same vigour in his voice and glow in his eyes each time I see him.

Pathik Desai
T.Y.B.Pharm.

Cyber Warfare

The twin nuclear attacks on Japan dawned with an epiphany upon the world forcing them to acknowledge the fact that if all forms of warfare are not abolished or at least controlled, the human race would soon come to an end. While there are many types of warfare like nuclear, biological and chemical warfare, nuclear warfare being the most callous was feared the most. But there is a new type of warfare known as cyber warfare that can not only cause more damage than the other three combined but its dangers are also highly underestimated. When we talk about cyber warfare it is very difficult to imagine cyber-attacks being more harmful than nuclear attacks.

But picture this; the metros will crash, many trains will be derailed, aircrafts will literally fall off the sky as a result of mid-air collision, all the roads will be jammed because improper functioning of traffic signals. Pipelines carrying gas will explode, nuclear facilities will be damaged resulting in radioactive leakage and all means of communication will be completely shut down. The hospitals will be of little help because of the systems being down and electricity will not come back up because the generators will be permanently damaged. Thousands of people will die and many more will be injured. In the days following the attack cities will run out of food because of lack of communication and people will be unable to get money from ATMs or banks and some people will begin to loot and the government and the police will be unable to handle something of this intensity. Of all the wars that the world has ever seen, no nation has ever been so disrupted. A sophisticated state sponsored cyber-attack can do all this in fifteen minutes without a single soldier even entering the country.

Unlike nuclear, chemical or biological warfare, where the country with the most resources or the most weapons is the most powerful, in case of cyber warfare, the countries with the most advanced technologies will face the highest level of vulnerability. With the increasing number of hackers around the world, a cyber-attack can be carried out by a group of such hackers and because there is little or no possibility of tracing the attack back to its original source such cyber terrorists will be at almost no risk of getting caught.

A few decades back, what seemed like the biggest advancement in the history of mankind is now on its way to dismantle it. The technology that empowered us to attain astonishing heights is soon going to be the reason for our impairment.

A Thinking Cap

Beyond Education

A computer, if used wrongly, can be equivalent to a monster that is out of control. And the only thing worse than a monster out of control is a monster that can be very easily controlled. It took two destroyed cities, several thousand dead and its multiples still suffering from the nuclear attacks for the world to realize the enormity of destruction that can be caused by nuclear weapons. A complete state sponsored cyber-attack will be a whole lot worse than a nuclear attack. And the only thing that scares me more than such an attack is the world waiting for yet another example before they start taking cyber warfare seriously.

Juhi Parsana
S.Y.B.Pharm.

Having your own twin, Astounding isn't it?

With each rotation and revolution taken by this circle of life, scientific advancements and discoveries keep getting astonishing day by day. Especially the breakthroughs which researchers have achieved at the cellular level that have entirely changed the outlook of medical science. For instance, the advancements in genetics.

Ever wondered, that there are few living beings on earth which have their own twin. And this twin is not a separate being, but within themselves. YES, there are such living beings and the condition they have in their special genetic code is termed Chimera.

A Chimera is a single organism that is composed of two or more different populations of genetically distinct cells that originated from different zygotes involved in sexual reproduction. Each population keeps its own character and the resulting organism is a mixture of tissues. In humans, this condition generally happens when two fertilized eggs fuse in the womb. If the fusion does not happen, the result would be fraternal twins. But when the fusion does take place, you get a twin that is not a visible twin at all.

This condition is generally seen in animals. But till date a few such instances have been recorded in humans. Most people with this strange condition would have no idea and technically will never have any idea that they were a twin. Visibly, there is no difference although; a chimera may have two different colored eyes.

Let us take into consideration the strange case of Lydia Fairchild who was denied public assistance when DNA evidence showed that she was not related to her children. She is the mother of 3 children, none of which seem to carry a trace of her DNA. On testing, the children tested positive for the fathers DNA as well as the DNA of Lydia Fairchild's mother, i.e. their grandmother. The DNA of her hair and skin cells failed to match the DNA of her children, but when the DNA from her cervical smear was tested, it showed positive results. These results concluded that she had two sets of DNA and that her twin was the mother to her children, at least in the genetic sense.

Munira Loliwala
S.Y.B.Pharm.

INTERESTING TALES

1. From concoction to legend: Dr. John Stith Pemberton, a local pharmacist, developed the syrup for Coca-Cola in Atlanta, Georgia in 1886. He took it to another local pharmacy for their opinion. They mixed carbonated water to the syrup and sold the delicious and refreshing drink for 5 cents a glass. Oblivious of his mark on history, John Pemberton sold his rights to his partners. Before his death two years later in 1888, he sold the last of the rights to businessman, Mr. Asa G. Candler who helped turn a pharmacist's little concoction into a booming success.
2. Electrical Experimenting : Before he discovered electricity, Benjamin Franklin dispensed medicine as a pharmacist. He worked as a clerk in a local mercantile store, where he dispensed medicines, herbs and other cures. Interested in health and naturally inquisitive, with the discovery of electricity he tried administering electrical shock on patients suffering with paralysis to stimulate movement. He found only temporary improvement and saw no advantage to the treatment. In the early 21st century, doctors continue to use the concept of electrical stimulation for immobile muscles.
3. Pocket Penicillin : During World War II, Britain feared that the Germans would invade their country and consequently, get a hold of their penicillin. As a preventative measure, researchers smeared pocket linings with the penicillin mold to transport to the U.S.
4. An accidental therapy : According to Chinese legend, the benefits of acupuncture were discovered when a soldier who had suffered from a stiff shoulder for many years was cured when an enemy arrow hit him in the leg!
5. He was invincible: Mithridates the Great of Pontus (a region of Persia) was in constant battle with Rome. Because he feared being poisoned, he would concoct different poisons and swallow them himself to build up a resistance. When the day came that he actually wanted to kill himself, he tried to poison himself, but it wouldn't work.
6. Columbus in search of herbs : The discovery of America is linked to Western civilisation's search for easier access to rare spices and herbs. Columbus was, in fact, hoping to open trade routes for these substances when he blundered into the West Indies and the Age of Exploration unveiled the New World.

Dipali Nagila, S.Y.B.Pharm.

10 Wonders of the Pomegranate

1. Antioxidants- It helps to wrangle the hoards of free radicals in your system. Free radicals have an uneven number of electrons and like to balance themselves out by stealing from other molecules and cells in your body. These cells are oftentimes very important ones dealing with your DNA, and when they are destroyed, disease steps in. Pomegranate juice is an excellent source of antioxidants that work to help you stay disease-free.
2. Blood Thinner- Pomegranate juice helps your blood circulation, making it easier for blood to travel to your heart, brain and the rest of your body.
3. Cancer Fighter- It has been known to reduce and prohibit the growth of cancer cells and tumors' in your body.
4. Digestion Aid- Pomegranate juice is a natural remedy for diarrhea, dysentery, and great number of other digestive problems.
5. Anemia Relief- With a high content of iron, pomegranate juice is a great home cure for anemia because it promotes higher level of hemoglobin.
6. Anti inflammatory- The juice has properties that help treat sufferers of arthritis. It can also help cure a cough or sore throat.
7. Neonatal cancer- It has been proven that pomegranate juice ingested by a pregnant woman can help protect the neonatal brain.
8. Artery protection- It helps keep plaque from building up in your arteries.
9. Cartilage protection- It works to prevent the deterioration of cartilage in your body.
10. Cholesterol Reducer- Pomegranate juice is capable of lowering blood pressure by as much as 6% in daily drinkers.



Munira Loliwala, S.Y.B.Pharm.

Brain Tonic - Hunt The Amino Acids

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

DID YOU KNOW??

Facts about chocolates:

Chocolates make you slim.

Chocolate stops early onset of wrinkles.

Chocolate makes you smarter.

Chocolate gives you power.

Chocolate slows down muscle age.

Chocolate assists you to live longer.

So Why don't you all go ahead and have a bite of deliciousness.



Sahana Ray
T.Y.B.Pharm.

Guess Your Seniors

1. Finally stopped wearing two watches
2. The lady Pandavas of final year
3. The perfect dance couple, who needs a guy?
4. Always out of pharmchem lab, Poonam ma'am tired of trying to convince him to stay inside yet manages to get crystals
5. T.Y. ka "chatur"
6. Nicknamed badi macchar and macchar
7. The so called "PERFECTIONIST" of the second year
8. The artist with a hatrick in charcoal painting at RX
9. Shah Rukh of final year
10. "Hussain and Road Runner" of MET IOP
11. The best duo for antakshri from final year having their own unique way of explaining in dumb charades
12. Sab chod chad, ratta maar
13. One is a talking soul and the other listening soul – inseparable pair of TY
14. Biggest fan of doraemon in IOP
15. The doubt machines of second and third year
16. Jo har cheez ka setting kar deta hai
17. Himalaya mein baitha hua, SY ka silent spectator
18. Ramp pe chalne wale hamare footballer and Sun

1. Hetuk Shah 2. Ruchita Nahar, Priyanka Lonandkar, Dhriti Naik, Saloni Pimpale, Mugdha Verma 3. Priyanka Kadvekar, Pooja Dubey 4. Paris Suru 5. Pranav Ramakanthan 6. Ujjwal Yadav, Sahana Ray 7. Akash Kothari 8. Sankalp Gharat 9. Vishal Patil 10. Sham Patil 11. Rohan Awate, Pravin Bilga 12. Pinto Gupta 13. Yutika Shirsat, Aelisha Shah 14. Siddhi Sawant 15. Munira Loliwala, Hely Desai 16. Dinesh Choudhary 17. Shiva Kumar Macha 18. Raj Desai, Tejas Pawar

Wordsworth of MET

...verses with soulful lyrics

Compassionate Humans

Virtues of life in this world are endless
But we hesitate to keep them alive
That's because we are so courageously fearless
For truth, if caught, we are on a run
But we are still the compassionate humans

We let gains conquer sacrifices
We play a blame game for our pains
We are a pith of immoral vices
We fabricate the truth so very often
But we are still compassionate persons

What is befitting is usually customized
The wrong doings are powerfully overlooked
Love, honesty & ethics are frequently terrorized
We are sustained with guilt for a long forever
But we still are the compassionate commoners

Dishonesty rules in hearts so many
Loyalty is forged for a selfish attitude
Laws imposed we don't like any
We are content with a life where there is no mirror
Our souls are unethical and that's the worst terror
But we have still the compassionate man power

Oh compassionate children of that merciful God
Rise up and take that ethical call,
We all have in us the quality of the universal Lord
Awaken that being, that motive for which you were born

Inculcate the innocence you had in the mother's womb
Without those morals, the world is solely a vacuum
Transform your self to a newer "you" and
Let your soul for once salute you
Join hands now, join hands for a cause
From your routine life, cage out and take a pause
For only you have the required acumen
Bring out that compassion
Oh my dear compassionate humans...

Mrs. Nikita Sanghavi
Lecturer

Life

Life is a mirror
Yes it is true
When you stand before it
It shows who you are.

It is difficult
But not impossible
With an audacity and courage
You can shoot all the troubles.

On every pavement
It opens a door
Yes, it is definitely amazing
You just need to live it to the core.

Navreen Shaikh
F.Y.B.Pharm.

Wordsworth of MET

...verses with soulful lyrics

A Winter Evening

It was a moment when I looked outside my window pane,
I glimpsed at the sight of life on a lonely lane.
When the light was down and the night was young,
The chatters went out and the silence on a run.
Every branch devoid of green surely awaiting the spring,
The hay was swayed around by some malicious cold wind.

The burrows were fresh providing some, a dormant space shined
upon by the myriad stars in a tyndal way.
It was a winter evening, I could say with so much going around
and so much at stay.
The life was mute as if working in silence,
Shedding away the past in a perfunctory way.
As if knowing the brighter fate,
Which will be unleashed in some months of wait.

That moment of watching the mundane sight, made me learn an
important law of life.
That how much ever pain you come across never lose hope.

The time has its own way to nurture,
It's not your doom but dawn and a simple prep for a better future.

Dipali Nagila
S.Y.B.Pharm.

MET Is The Light

MET is the light, which never fails to SHINE
Like the rising sun
It illuminates my life.
Do I represent my second family?
YES I do, YES I do
Do you wish to know why?
Because it taught me to grow
It taught me to believe
It taught me to think
It taught me to share
It taught me to accept mistakes
It taught me to be grateful
Every day, every moment

Do I love MET?
Yes I do, yes I do
Because what I observe
MET people never get TIRED,
MET people are always HELPFUL,
MET people always ENCOURAGE,
MET people never let you be ALONE.

Do you think MET impressed me?
Yes it did, yes it did
Because MET has taught me
Dedication towards work and much more....

Do I respect MET?
Yes I do, yes I do
Because MET truly deserves it !!...

Manisha Nilesh Barve
Librarian

Wordsworth of MET

...verses with soulful lyrics

A Beautiful Winter Tale

Its been tough, its been hard,
its a long walk to the end from the start,
and its lonely and its sad,
to fight for the happiness, the love, i never had.

and its been a while since i looked inside,
to see the flame that in my heart does reside,
and its been tough and its been cold,
hope has not been so easy to hold.

and i've walked this white desert all alone for a long while,
and the thought of seeing you again is what has always made
me smile,
but each day it gets harder and harder to get through,
but ill walk, ill walk a million miles, and swim a thousand
oceans to get to you.

do it for a while i have, cause you are all i ever crave.
and that fire in my heart is what i am fighting so hard to save.
although now away it has started to slip,
and this cold winter's evening, on me has taken its grip.

and i dont know if this starry evening is a friend or a foe,
cause like an angel, it reminds me of the good times i had
with you,
and like a cold adversary, tells me of how i can never have you,
it gives me solitude to see what i really want from this existence
of mine,
but reminds me of how i am all alone, under the northern stars
shine.

cause in this cold winter evening, thats all i can see around,
caught up in the cage of your memories, your eyes, your touch
and your sound,
and as cold and lonely as this evening might get,
i am gonna find my way to you, and that ill never let myself
forget.

so ill pick myself up, and come to the end where all this had its
start,
cause you are the flame that has been lighting in my heart,
but till then all i have is this cold winter's evening, and this
solitude of mine,
and lay low and dream of you under this northern star's shine.

Pathik Desai
T.Y.B.Pharm.

I Saw The Crowds

I saw the crowds,
Walking on the roads
Some on their way to the market,
To shop for the day.
There were others,
Marching towards their offices-
Breadwinners of the family true.

But sad was it also to see the others,
It seems they are called "LOAFERS"
On their way to nowhere, and nothing to
do!

Are you one of them, my friend?
Its high time then, that
You sit and ponder a while-
You seem to have a problem-
I understand, my friend!

But you've got to rise and start anew
On the road of life, you'll also find
Thorns beneath the roses.

If you accept them, they're beautiful.....

Mansi Kanu Shah
Final Year B.Pharm.

Wordsworth of MET

...verses with soulful lyrics

A Winter Tragedy

The weather was quiet alarmingly silent,
Just with the occasional movement of the leaves,
The cold breeze creating more suspense than thrill.
The dry leaves sway, so does the branches, making a noise rather
unusual.
The fallen leaves and twigs trodden over, makes a sound, just like a
crunchy wafer snap.
This weather just like a lonely child sat quietly
As the sun sets across the horizon,
The chill of cold breeze brush past her face
A feeling that cannot be expressed in words, but felt.

This winter had an uncanny resemblance to the lifeless soul of hers.
It was a decade full of waiting, for her lover to return,
Who had vanished as if into thin air on the blissful day of their
wedding?
The sun goes down, and the moon dimly lights up the sky, the stars
bearing a twinkling shine.
A chilling evening indeed but she lay almost lifeless,
Resting her head over the window sill,
And the only picture her eyes bore was her lover's
This evening reminded her, that evening, the only vivid memory she
had with her lover.
Tears run down her cheeks soon when she remembers those
moments.
There was romance in the air, and lover's couldn't ask for anything
more.
As they held each other's hands tightly enough,
They walked by the lanes of the park.
The bride playfully goes into the garden pulling her groom along.
The night was theirs, and they couldn't ask for more,
And as the lovers come close,
Smoke came out like cigarette blown,
But it was just the winter cold.
As they grew closer together the sprinklers played a spoilsport, or not,
Drenching them top to too,
Yet the perfect lover he was, held his bride close
Enough to listen to his warm heart beat.
And suddenly she is brought back to reality
And she soon realizes she is all alone with no sight of her lover.
But she only waited and wondered one day her lover will return,
Sweep her off her feet once again.

Sahana Ray
T.Y.B.Pharm.

Success And Positive Thinking

Success is not restricted to few; it can be achieved by anyone who dares to go for it. Positive thinking is just another term for faith. Patience and perseverance overcomes mountains. We must cultivate a strong will, a keen desire and the determination to achieve our goals. To be successful and happy in our lives, we must be aware of our qualities, our strengths and weakness, our goal, etc. We should count our negatives and shape them for the best. Positive thinking is not simply a belief that everything will be alright in the long run; it is the way of life. A person who thinks positive always starts every new activity enthusiastically, for he believes that he will be able to successfully finish it. Every drop of water in a river has come a long distance. It participates in widening the flow of the river. The water drop has its own separate existence but the drop gains significance if and only if it becomes a part of the general flow. A human being is like that drop of water. He has a separate existence in the midst of others. He cannot exist in a void; he needs the presence, support and contribution of others. Our development depends primarily on our heredity and environment. It is important for us to build a positive attitude, work hard, be determined and never quit.

Sayali. M. Raut
F.Y.B.Pharm.

Wordsworth of MET

From a teacher to her students

नकाराचा स्विकार

अलिकडे वर्तमान पत्रातील काही बातम्या वाचून मन अस्वस्थ झाले. त्याततासंतास फेसबुक बघायला आईने परवांनगी नाकारली म्हणून चौदा वर्षांच्या मुलीने आत्महत्या केली. व्यसनपूर्ती करण्यासाठी वडिलांनी पैसेनाकारले म्हणून मुलानी वडिलांचा खूनकेला, एड्डातरुणाने लग्नकरण्यास नकारदिला म्हणून दिवसाढवळ्या तिच्यावर रस्त्यात अँसिड हल्ला झाला. काय सुचवितात ह्या घटना? आपण नाकारलेगेलो आहोत. ह्या भावनंच्या उद्रेकाचे परिणाम इतके भयंकर असावेत? रागाच्या भरात ह्या सर्वांना आपल्या जवळच्या नात्यांचाही विसर पडवा. आजच्या युवा पिढीमध्ये गुन्हेगारीची प्रवृत्तीका वाढीस लागली आहे? ह्या सर्व घटनांन मध्येएक समानंता दिसते आजची तरुणाई सुदृढ शरीर संपदा कमवण्यासाठी व्यायाम करते. डायेट करते. शरीराच्या फिटनेससाठी एवढी जागृत राहते. मग मनाच्या फिटनेससाठी का महत्व देत नाही?

आपल्याला जे हवं असेलतेदुस-या व्यक्तीने मान्यकेलेच पाहिजे हा दूराग्रह का? एखाद्या व्यक्तीला नाही म्हणण्याचा पूर्ण अधिकार आहे. हे आपण सतत ध्यानात धराव. अटकाव करत असेलतर आपले काही चूकततर नाही ना? हा प्रश्न स्वतःच्या मनाला विचारायला अजिबात विसरूनये अस म्हणतात की ८४ लक्ष्य योनिंतून प्रवास केल्यानंतर मनुष्याचा जन्म प्राप्त होतो. मग अशा आयुष्याचा शेवट एका नकरामुळे करणे. हे करंटेपणाचे लक्षण आहे.

ह्या लेखाच्यानिमित्ताने आजच्या युवा पिढीला मला एवढेच सांगायचे आहे कीकोणाच्या नकारामुळे आपला स्वाभिमान दुखावला जाऊ नये. आजची तरुण पीढी देशाचे भविष्य आहे. उद्याच्या उज्वल भविष्यासाठी शरीरा प्रमाणे मनालाही सशक्त करा. मनाच्या शक्ती मध्ये जग बदलण्याचे सामर्थ्य आहे. नकार हा आपल्या आयुष्यातीस अविभाज्य घटक आहे. तेव्हा नकाराचा स्विकार करायला शिका आणि सकारात्मक दृष्टीकोन ठेऊन ह्या नकाराला आपली ताकद बनवा.

डॉ. सोनाली नाईक
असिस्टंट प्रोफेसर
बी. फार्मसी

Wordsworth of MET

...verses with soulful lyrics

आई

आई तू का ग सोडून गेलीस मला,
हे जग खूप वाईट आहे. जगू देत नाही एकट्याला,
मला सतत तुझी आठवण येते ग क्षणाक्षणाला,
कोणीच नाही ग तुझ्या पिल्लूचे असू पुसायला,
आई तू का ग सोडून गेलीस मला,
ये ना ग मला कुशीत घ्यायला,
माझे बाळ खूप हूशार आहे म्हणायला,
ये ना ग मला मायेचा घास भरवायला,
एक घास चिउचा म्हणत खाऊ घालायला,
आई तू का ग सोडून गेलीस मला,
कोणीच नाही आहे.इथे मला ओरडायला,
बाळ अभ्यास कर म्हणून सांगायला,
कोणीच नाही माझ्या बरोबर गोड गोड बोलायला,
माझे पाय दुखल्यावर ते दाबायला,
आई तू का ग सोडून गेलीस मला,
कोणीच नाही ग माझे लाड पुरवायला,
कसे कसेसेचे होते ग झोपतांना,
कोणीच नाही ग मायेचा हात डोक्यावरून फिरवायला,
रात्रीच्या छान छान गोष्टी सांगायला,
आई तू का ग सोडून गेलीस मला,
खूप झाले सहन नाही होत तुझ्याविना जगायला,
पुन्हा एकदा यायचे आहे मला तुझ्या पोटी जन्माला,
तुझ्यामाझ्या उरलेल्या इच्छा पूर्ण करायला,
पुन्हा एकदा 'आई आई' म्हणून हाक मारायला

विवेक भंडागळे
तृतीय वर्ष बी.फार्मसी

कोणी?

कॉमन मॅनला कोणी घर देता हो घर
भाववाढीच्य दुनियेत वाढत चाललेत दर
असेल तर नावावर, नसेल तर वर्मावर लागत,
स्वतःची स्वप्न सजवायला हक्काच
एक घर लागत.
चार भिंतीच्या आत, चार घटका आनंदाच्या,
छताच्या आभाळाखाली रंगल्या गोष्टी सुखाच्या
आयुष्याच्या प्रत्येक वळणावर एक आपल लागत
स्वतःची स्वप्ने सजवायला हक्काच एक घर लागत
घरासाठी झालो लाचार, घरासाठी फिरतो बेजार
बँकेचे कर्ज, सावकाराचे कर्ज असूनही
चेह-यावर स्मितहास्य दाखवाव लागत
स्वतःची स्वप्ने सजवायला हक्काच एक घर लागत
आई वडिल भाऊ बहिण ही नाती, प्रेम, जिद्दाळा विश्वास ह्या गोष्टी,
घराचा आधार मिसळल्यावर आयुष्य जर बर वाटत
स्वतःची स्वप्ने सजवायला हक्काच एड्ड घर लागत

विवेक भंडागळे
तृतीय वर्ष बी.फार्मसी

Wordsworth of MET

...verses with soulful lyrics

आज एक कविता सुचली

खुप दिवसांनी आज मला एक कविता सुचली
सुरवातीला जणू शब्दांची कमतरता भासली
तिच म्हणाली मला काय ग तुझे रोजचे तेच काम
स्वपनांच्या जगाला ठोक आता राम राम
हेलावलेल्या हृदयाने म्हणाले तिला
नाही सोडवत मला माझ्या स्वपनातले गाव
तिथेच तर आहे माझ्या जीवनाची नाव

सांगशील का कधी माझ्याला पाण्याशिवाय जगायला?
नदीच्या पाण्याला विसंगत वाहायला.
स्वप्नमय या कल्पनांनी आयुष्य माझ रंगलय
नाहीतर स्पर्धात्मक ह्या जगात काय निरागस उरलय?
ऐकून हे सारे कवितेच्या डोळ्यात पाणी आले.
यापुढे तिने सुध्दा मला नियमित सुचवण्याचे आश्वासन दिले.

नम्रता शांताराम राजाराम
एफ.वाय.बी.फार्मसी

नीति क्या कहती है?

नीति कहती है जो सही है वो तुम्हें करना है
सही करना हो, तो सही जानना है।
सही जानने को, सही सोचना है
सही सोचने को, सही में विश्वास करना है।।
इसके लिये,
इंसानियत को सबसे ऊपर रखना पड़ेगा
हर इंसान का दर्द हरना पड़ेगा।
जो सच है उसका साथ देना पड़ेगा
परमार्थ को अपना धर्म बनाना पड़ेगा।।

अपने मन को निरन्तर तुम्हें, मथना पड़ेगा
जो सही है अपने विचारों में गूँथना पड़ेगा।
ताकि जब कर्म करने का वक्त पड़ेगा
खुदबखुद हर काम सही बन पड़ेगा।।

डॉ. (सौ.) आभा दोशी
प्राचार्या बी.फार्मसी

हिंदी

हमारी प्यारी हिंदी भारत माँ कि बिंदी
शब्दों से ये हमसे खेती ऑख मिचोली
बोली ये हमारी हमजोली।।
माँ शब्द भी तो है हिंदी की देन
बच्चा माँ कहना सिख जाता है. बिना पेन्सिल ओर पेन
हिंदी हमारे दिलों पर है राज करती।।
गपशप करो तो महफिल को मुस्कराहटो से भरती
दिलों को ले आती हे पास
यह तो है ही इतनी खास।।
मुश्किल मुददो को भी यह आसान कर देती.
फिर हमारे मन को आत्मविश्वास से भर देती
हिंदी से बना हिदुस्तान
लेकिन क्या इस हिदुस्तान में हिंदी को मिल रहा अपना स्थान?
ये भाषा है इतनी महान
तो क्यू करे इसका बलिदान
बढाओ अपना हिंदी का ज्ञान
और दिखा दो दुनिया को कि यह है सुनहरे शबदों कि खान
बडी ही आसान है हिंदी कि परिभाषा
आओ हम सब मिलकर करें उज्ज्वल
भारत कि आशा

पूजा दुबे
चौथे वर्ष बी.फार्मसी

Piccasos in Labcoats



Sham Patil, Final Year B.Pharm.



Viplav Kshirsagar, F.Y.B.Pharm.



Viraj Khasgiwale, S.Y.B.Pharm.



Viplav Kshirsagar, F.Y.B.Pharm.

Piccasos in Labcoats



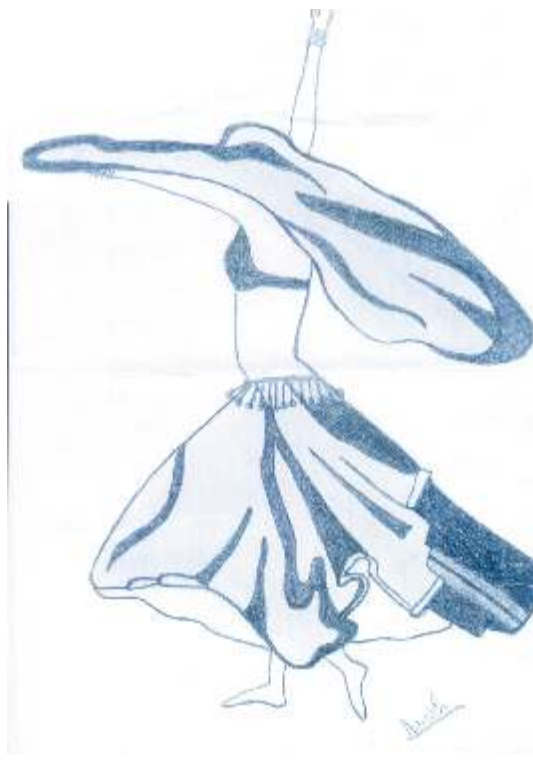
Viraj Khasgiwale, S.Y.B.Pharm.



Sham Patil, Final Year B.Pharm.

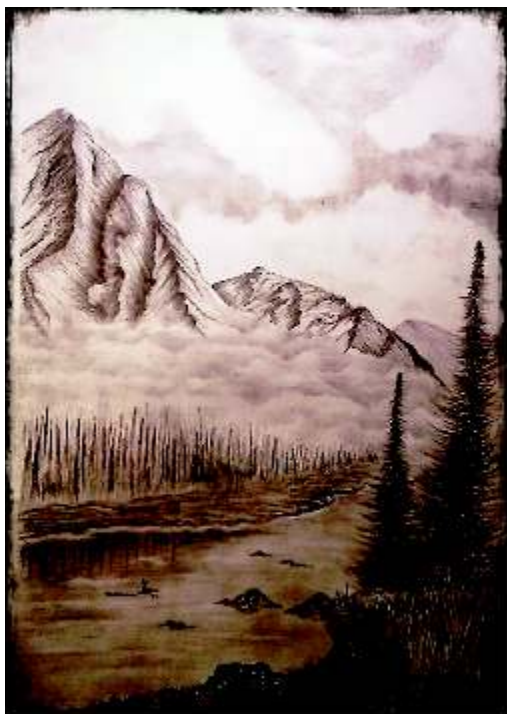


Anuja Tikhe, F.Y.B.Pharm.



Aarohi Phatak, S.Y.B.Pharm.

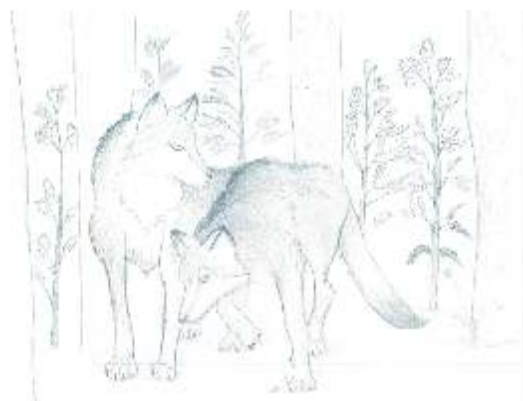
Piccasos in Labcoats



Sham Patil, Final Year B.Pharm.



Sham Patil, Final Year B.Pharm.



Vinod Choudhary, S.Y.B.Pharm.



Anuja Tikhe, F.Y.B.Pharm.



Viraj Khasgiwale, S.Y.B.Pharm.



Viraj Khasgiwale, S.Y.B.Pharm.

Piccasos in Labcoats



Sham Patil, Final Year B.Pharm.



Viraj Khasgiwale, S.Y.B.Pharm.

Shutterbugs!

A picture is worth a thousand words



Nikhil Bhitre
S.Y.B.Pharm.



Nikhil Bhitre
S.Y.B.Pharm.

Shutterbugs!

A picture is worth a thousand words



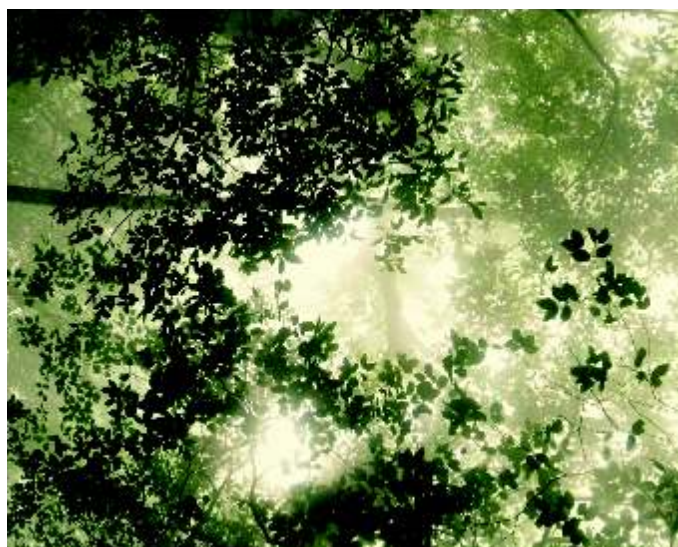
Nikhil Bhitre, S.Y.B.Pharm.



Nikhil Bhitre, S.Y.B.Pharm.



Yash Sancheti
F.Y.B.Pharm.



Yash Sancheti
F.Y.B.Pharm.



Aniket Narkar
S.Y.B.Pharm



Aniket Narkar
S.Y.B.Pharm

Shutterbugs!

A picture is worth a thousand words



Chetan Thingore
F.Y.B.Pharm.



Anuja Tikhe
F.Y.B.Pharm.



Arjav Modi
Final Year B.Pharm.

Origami

An Amazing Art



Vinod Choudhary
S.Y.B.Pharm.

Our Family

First Year B.Pharm.

We the students of first year B.Pharm. share our experiences regarding our few months in this Institute of Pharmacy. We witnessed a friendly and supportive environment with a very co-operative faculty. The laboratory assistant are our 'knights in the shining armour' with their constant support and help during the practicals. MET a lot of importance to the cultural activities and that's something we really appreciated. In the end we would say, we're really lucky and glad to be part of MET IOP.



Second Year B.Pharm.



Our Family

Third Year B.Pharm.



Final Year B.Pharm.

As we take off from MET we are surely leaving behind a lot many things, a lot of memories here in OUR COLLEGE , OUR MET The very 1st day in college, the nervousness, the eagerness to know what's going to happen the next moment, making soo many new friends,all these things will be cherished by all of us always! Whether it's been our periodic tests, semesters, LUMIEREs, Rx, MET Utsavs and all the hardwork, mastii behind it was funn! The lectures, practicals, classrooms and ofcourse RESULTS, humesha yaad ayenge! Respected Hadkar sir, Abha maam, Bhosle sir and all our Teachers we thank you for always being kind and helpful to all of us in each and every aspect. You are the best. And when it comes to MET how can we forget our non teaching staff and lab assistants? MET(IOP) Will surely be incomplete without them. We thank the entire MET family for tolerating us for all these 4years! Thanking our trustees Mr. Chaggan Bhujbal sir, Mr. Pankaj Bhujbal sir, Mr. Samir Bhujbal sir and Wishing all our juniors all the very best for their future.

Last but not the least thank you the student council. We will miss you MET!!! It's not the end but indeed a new beginning!!!



Our Family

First Year M.Pharm.



Final Year M.Pharm.

I student of Final Year M.Pharm. on behalf of all my fellow batch mates would like to share our experience regarding the two yrs we spent in MET Institute of Pharmacy.

It has been a thrilling and enthusiastic experience being a 'METizen'. We group of 18 students enjoyed every beat spent in college days, be it traditional day, dindi event, MET Utsav, Lumiere. Teachers and NTS are supportive, friendly in attitude and curriculum is at its best. We would cherish every moments spent in MET and it taught us the most important aspect of life which is, enjoying every moment. As very rightly said:

"YE PAL KAL HO NA HO, BAS JO HAI KHUSH RAHO".



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प.पू. संत श्री इंद्रदेवजी महाराज
एम. डी. आयुर्वेद
एम. ए. संस्कृत

॥ राधे राधे ॥ वेदशक्ती आयुर्वेद



नेहमीचे दुखणे आणि त्रास

- | | |
|--|---|
| <input checked="" type="checkbox"/> गुडघे दुखणे | <input checked="" type="checkbox"/> हातापायाला मुंग्या येणे |
| <input checked="" type="checkbox"/> मान दुखणे | <input checked="" type="checkbox"/> मासिक पाळीतील समस्या |
| <input checked="" type="checkbox"/> पाठ दुखणे | <input checked="" type="checkbox"/> रक्तदाब |
| <input checked="" type="checkbox"/> कंबर दुखणे | <input checked="" type="checkbox"/> मधुमेह |
| <input checked="" type="checkbox"/> सांधे दुखणे | <input checked="" type="checkbox"/> लठ्ठपणा |
| <input checked="" type="checkbox"/> डोके दुखणे | <input checked="" type="checkbox"/> अशक्तपणा |
| <input checked="" type="checkbox"/> अर्घ शिशी | <input checked="" type="checkbox"/> पित्त |
| <input checked="" type="checkbox"/> चक्रर येणे | <input checked="" type="checkbox"/> अंधारी येणे |
| <input checked="" type="checkbox"/> थायरॉइड | <input checked="" type="checkbox"/> किडनी स्टोन |
| <input checked="" type="checkbox"/> निद्रानाश | <input checked="" type="checkbox"/> उदासीनता |
| <input checked="" type="checkbox"/> अॅलर्जी | <input checked="" type="checkbox"/> आळस |
| <input checked="" type="checkbox"/> पायाची आग होणे | <input checked="" type="checkbox"/> चिडचिडेपणा |
| <input checked="" type="checkbox"/> सोयरासीस | <input checked="" type="checkbox"/> एखादा जुनाट आजार |

वरील सर्व प्रकारच्या आजारांवर औषधे उपलब्ध आहेत.

'वेदशक्ती आयुर्वेद' यह क्रांतीकारी युगप्रवर्तक राष्ट्रीय
प.पू. संत श्री इंद्रदेवजी महाराज के मार्गदर्शन पर बनाए गए है।
आयुर्वेदीक दवाईया है। यह पूर्णतः नैसर्गिक और शुद्ध है।
पुरानी जटील व्याधीयों से छुटकारा पाने के लिए बनाई गई औषधी हैं।

॥ संपर्क सुत्र ॥

चि. पुष्कर चंद्रकांत पारवले

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