P.A. College of Pharmacy

APOTHECA

A Quarterly News Bulletin

Vol: I Issue: 03 May-Aug

WHAT'S INSIDE?

P.A. College of Pharmacy
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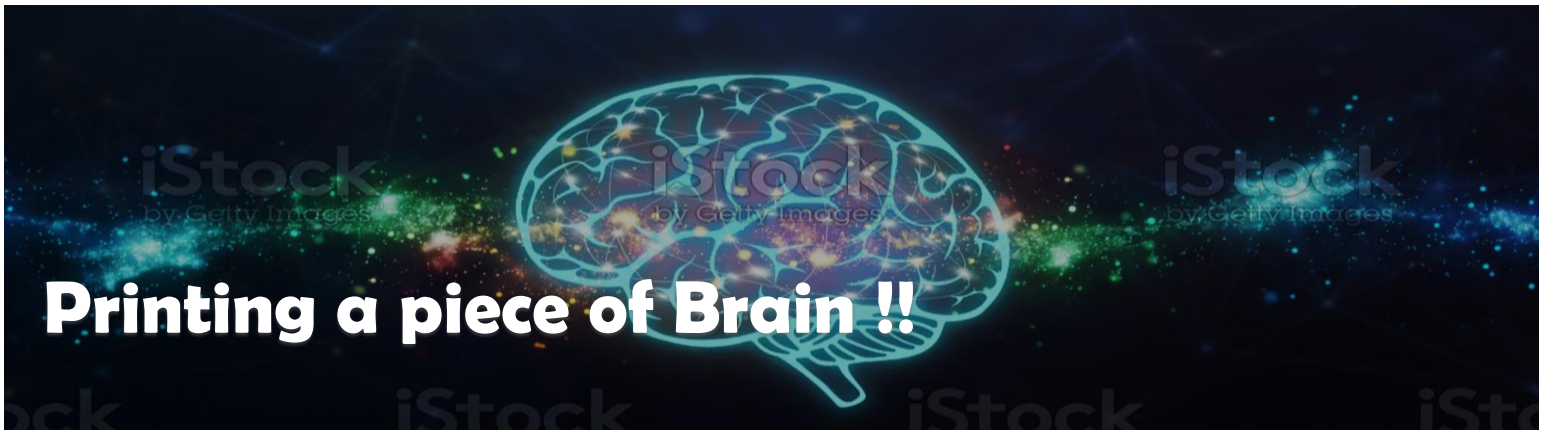
EDITOR'S INK

Even as the third issue of Apotheca is scheduled to be released on the occasion of 'Azadi ka Amruth Mahatsov', on the fourteenth of August 2023, the institute has planned many programs to meaningfully celebrate the occasion. India has evolved into a technological centre since its independence. The Pharmaceutical industry and academia have also grown to an extent of being recognized as world's leading Pharma hub. It is important for the younger generations to know about Indian history, especially modern history particularly the growth of Pharma industry and academia since independence. India has produced many innovators, scientists, businessmen who have made India proud. The Institutional Innovation Council (IIC) of PACP has therefore thought worthwhile to conduct a quiz on Indian modern history and the Indian innovators to motivate the students to learn more about their motherland. Artificial intelligence and other technological advancements in the recent years have forced every one in every walk of life to foresee the technological involvement, more-so in the Pharma and medical fields. Younger minds with minimal or no inhibitions can put forth 'out of the box' ideas for innovation. The institute has organized a poster presentation (completion) for the students to present their ideas for innovations in medical and pharmaceutical sciences on this occasion of 'Azadi ka Amruth Mahotsov'. P.A. College of pharmacy is progressing continuously all round including academics. We have planned to introduce new courses in to college. We have applied for Pharm-D and M. Pharm programs. Our visionary management has already sanctioned additional facilities and building for the new courses. One of our students has cleared GPAT for the first time from PA College of Pharmacy, testifying to the fact that, we are getting stronger in the academics. My congratulations to her and her mentors.

Dr. Saleemulla Khan



The brain is like an incredibly complex web of highways where information travels. These roads are composed of the brain cells – neurons and non-neuronal cells, including astrocytes and microglia – arranged in the structure formed by the non-cellular component known as the extracellular matrix.

The complexity of cellular arrangement and the connections made between them can lead to tortuous labyrinths hard to follow and understand, and when trying to study how the brain works, scientists have a hard time building models that closely mimic this intricate organization.

Helena Parkington, Professor at the Department of Physiology at Monash University in Victoria, Australia and a team of collaborators have successfully employed bioprinting techniques to create 3D neuronal constructs using rat neurons and astrocytes thus building a useful model for studying brain.

In this study, they used extrusion 3D bioprinting, using a gelatin-PEG bioink, and constructed a brain structure similar to those that occur in the memory and learning region of the brain. They carried out a test on neurons and found that they performed in a manner similar to how they perform in the brain. This innovative approach provides an exciting platform for investigating neural circuitry, engineering neuromorphic circuits, and conducting in vitro drug screening.

Bioprinting is a revolutionary technology that combines principles from 3D printing and tissue engineering to create living biological structures. It enables the precise deposition of living cells, biomaterials, and bioactive factors to fabricate functional tissues and organs.

In the case of neurons, the challenges lie in maintaining the viability and functionality of the printed cells that are highly delicate and require precise environmental conditions, such as appropriate nutrient supply and oxygenation. Moreover, ensuring proper cell-cell interactions and the formation of connections between neurons, called synapses, is also crucial for developing functional neural tissues.

To allow the proper interaction between cells, it is important to choose a good material that mimics the extracellular matrix where the cells grow, expand, and make synapses. One such class of materials are called “bioinks” and consist of a biocompatible hydrogel that provides structural support and nutrients for the cells. Parkington and the team used a bioink composed of gelatin-norbornene poly(ethylene glycol)-dithiol (or gelatin-PEG), which in a previous study they optimized to allow neuronal viability.

The team bioprinted rat neurons and astrocytes within the gelatin-PEG in eight layers, and allowed the growth of the cells for two weeks. When looking at the 3D printed morphology, they found that the neurons formed complex structures with other neurons and with the astrocytes and also expanded along the bioink.

To assess the functionality of the printed neurons, the researchers conducted a series of analyses. The results revealed that the bioprinted neurons exhibited spontaneous electrical activity, a hallmark characteristic of healthy neural cells, indicating that the neurons were capable of generating electrical signals on their own, similar to neurons growing in a natural biological environment.

In addition, they observed that the neurons responded appropriately to various stimuli, validating their ability to process and react to external signals. These findings provided further evidence that the bioprinted neurons exhibited behavior akin to neurons growing in a native biological setting.

The successful maintenance of electrical activity in the bioprinted neurons represents a significant step forward in the field of neuroscience and bioprinting. It suggests that the printed neural tissue can recapitulate essential functions of natural neurons, thereby holding great promise for various applications.

Thus ,a 3D bioprinted model of the brain would have many benefits in drug and toxicity screening.

FDA APPROVALS

No.:	Active Ingredient	Drug Name	Approved Use
1.	fezolinetant	Veozah	To treat moderate to severe hot flashes caused by menopause
2.	perfluorhexyloctane	Miebo	To treat signs and symptoms of dry eye disease
3.	epcoritamab-bysp	Epkinly	To treat relapsed or refractory diffuse large B-cell lymphoma (not otherwise specified) and high-grade B-cell lymphoma after two or more lines of systemic therapy
4.	sulbactam, durlobactam	Xacduro	To treat hospital-acquired bacterial pneumonia and ventilator-associated bacterial pneumonia caused by susceptible isolates of Acinetobacter baumannii-calcoaceticus complex
5.	nirmatrelvir, ritonavir	Paxlovid	To treat mild-to-moderate COVID-19 in adults at high risk for progression to severe COVID-19
6.	flotufolastat F 18	Posluma	To use with positron emission tomography imaging in certain patients with prostate cancer
7.	sotagliflozin	Inpefa	To treat heart failure
8.	glofitamab-gxbm	Columvi	To treat diffuse large B-cell lymphoma, not otherwise specified, or large B-cell lymphoma arising from follicular lymphoma after two or more lines of systemic therapy
9.	ritlecitinib	Litfulo	To treat severely patchy hair loss
10.	rozanolixizumab-noli	Rystiggo	To treat generalized myasthenia gravis in adults who are anti-acetylcholine receptor- or anti-muscle-specific tyrosine kinase antibody-positive
11.	somatrogon-ghla	Ngenla	To treat growth failure due to inadequate secretion of endogenous growth hormone
12.	nirsevimab-alip	Beyfortus	To prevent respiratory syncytial virus (RSV) lower respiratory tract disease
13.	quizartinib	Vanflyta	To use as part of a treatment regimen for newly diagnosed acute myeloid leukemia
14.	lotilaner	Xdemvy	To treat Demodex blepharitis
15.	zuranolone	Zurzuvae	To treat postpartum depression
16.	avacincaptad pegol	Izervay	To treat geographic atrophy secondary to age-related macular degeneration.

BLOOD DONATION CAMP

As part of their social commitment, the NSS Unit of P A College of Pharmacy, in collaboration with the KMC Blood Bank, Mangalore, organized a blood donation camp on the 17th of May 2023 to commemorate the late chairman, Dr.P.A. Ibrahim Haji. The event aimed to raise awareness about importance of blood donation. Dr. Ranjitha Rao, Associate Professor, Department of Pathology & Blood Bank Officer graced the occasion as the Chief Guest. Dr.Ramis MK, Principal , P A College of Engineering, Dr.Surfraz J.Hashim, Principal , P A First Grade College , Prof.K.P.Soofie , Principal , P A Polytechnic , Dr.Sajeesh Reghunathan , Principal , P A Institute of Physiotherapy were the Guests of Honor. They gave a brief speech about blood donation. The statements by the chief guests emphasized the importance of blood donation in saving lives. On this occasion, the Second Issue of the Pharmacy College Newsletter 'Apotheca' was released by the dignitaries.

The active participation of students, instructors, and staff significantly contributed to the camp's success. The well-organized event ensured the safety and comfort of all participants. Many people registered to donate blood. The collected blood will significantly contribute to saving lives and aiding those in need. It was heartening to witness the community coming together to support a noble cause and make a positive impact on the lives of others.

WORLD ENVIRONMENT DAY

To commemorate World Environment Day, Institution Innovation Council, P A College of Pharmacy held a campus cleaning drive on June 14, 2023.

Mrs. Thriveni, Ms. Nishmitha led the groups for the campus cleaning. They ensured that students understood their responsibilities and provided them with necessary resources and equipment. Equipped with gloves and trash bags, students of Diploma in Pharmacy actively engaged in the cleaning drive. Divided into teams, they covered different areas of the campus. Through collaboration and teamwork, students carried out their cleaning tasks, demonstrating a sense of unity and responsibility.

INTERNATIONAL DAY AGAINST DRUG ABUSE

An awareness rally was taken out here by the students of D.Pharm of P.A. College of Pharmacy on June 26, 2023 against drug abuse and illicit trafficking.

The International Day against Drug Abuse and Illicit Trafficking is observed on June 26 every year.

The rally passed throughout the campus to culminate at Admin Block of P A Knowledge City.

Students from P A Group of Institutions took out the rally carrying placards with messages urging the public to adhere to the principles advocated by eminent scholars and leaders of yesteryears. Messages about the disastrous effect of drugs on individual and society's health and economy were created.

TALKS & SEMINARS

VALIDATION & START-UP DEVELOPMENT

P.A. College of Pharmacy in association with Institution Innovation Council conducted a talk on 'Validation and Start-Up Development' on 17, July 2023.

Dr. Krishna Prasad, Professor and HoD from the Department of Biotechnology at P.A. College of Engineering delivered the talk.

The seminar was highly interactive, motivating students to ask questions and clarify their doubts.

More than hundred students attended the talk, including TY B.Pharm and Final Year B.Pharm Students, making it a successful and engaging event.

Learn Start-Up and Minimum Viable Product or Business

Mr. Mohammed Anees, Founder of Solukraft, interacted with the staff and students of P.A. College of Pharmacy on 22nd of July 2023.This session was organized in association with the Institution Innovation Council.

He delivered a brief talk on Ideation of a Start-Up and emphasized on tackling the risks associated with the start-up.

During the session, he motivated the students to acquire the essential skill sets that pharmaceutical industries look for in a prospective candidate. Additionally, he explained the basics of viable product development. Overall, the discussion was very fruitful, and nearly 150 students were actively involved in the session.

PUBLICATIONS

MAY TO AUGUST 2023

- Chaithra Raviraj , C.S.Shastry ,K.Rajisha and Gupta Dheeraj Rajesh . Phytoremediation approach for uptake and accumulation of Hg in *Isachna globosa*(Thunb.) O.Kuntz to mitigate contamination around an industrial area .Annals of Phytomedicine June 2023.

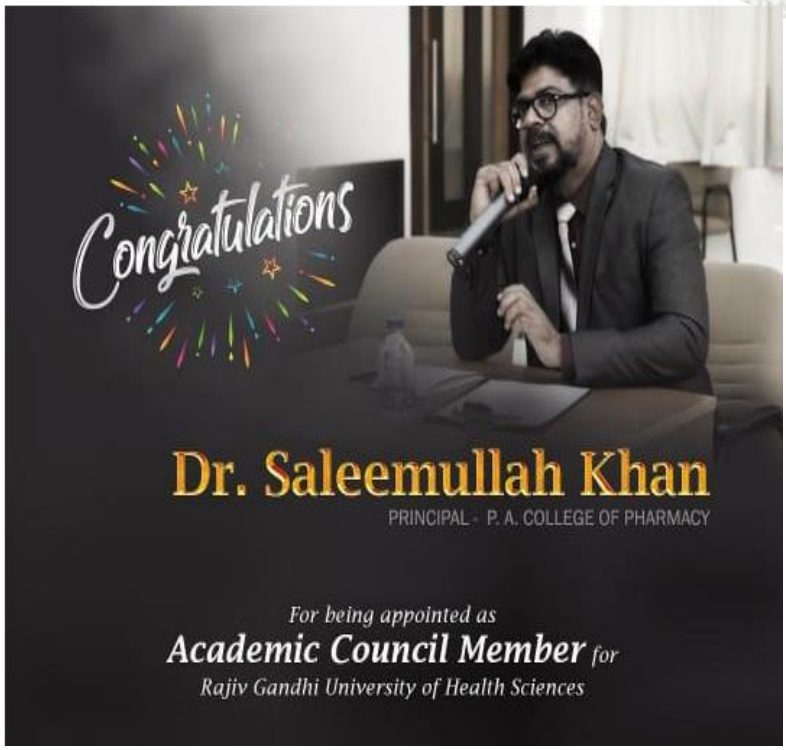
FACULTY DEVELOPMENT PROGRAMMES

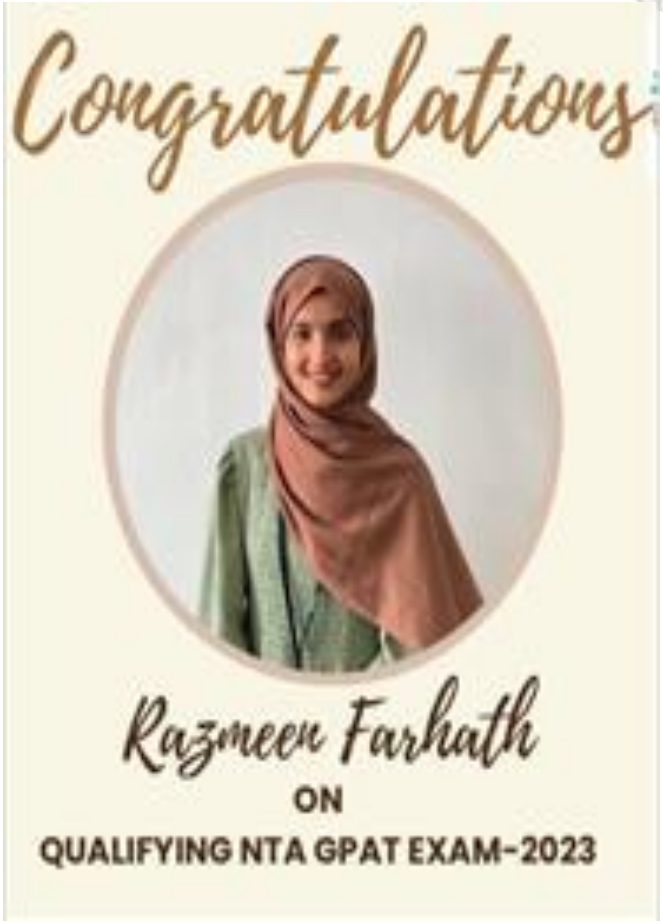
- Dr.Rajisha K, HoD , Department of Pharmacognosy attended an online session of the Teachers' Skills Empowerment Lecture Series on the topic "Giving Effective Feedback " , organized by MCOPS held on May 11 ,2023.
- Ms.Nishmitha, Assistant Professor , Department of Pharmaceutics attended an online session of the Teachers' Skills Empowerment Lecture Series on the topic "Giving Effective Feedback " , organized by MCOPS held on May 11 ,2023.
- Ms.Geena V., Assistant Professor , Department of Pharmacology attended an online session of the Teachers' Skills Empowerment Lecture Series on the topic "Giving Effective Feedback " , organized by MCOPS held on June 22 ,2023.

FACULTY ACHIEVEMENTS

- Dr.Rajisha K, HoD , Department of Pharmacognosy, completed an online course on "NIeCer 103 : Scientific Writing in Health Research" conducted by ICMR in association with National Institute of Epidemiology held in July 2023.

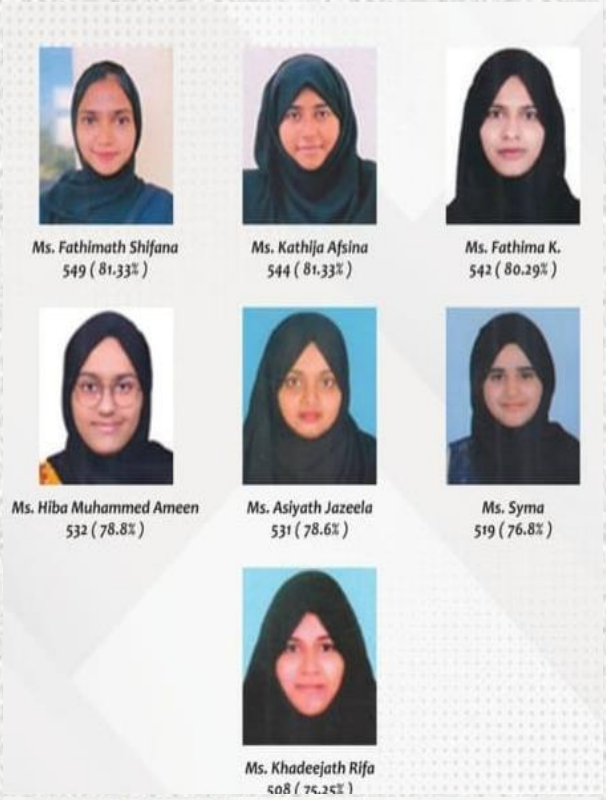
HALL OF FAME


Congratulations
Dr. Saleemullah Khan
PRINCIPAL - P. A. COLLEGE OF PHARMACY
For being appointed as
Academic Council Member for
Rajiv Gandhi University of Health Sciences


Congratulations
Razmeen Farhath
ON
QUALIFYING NTA GPAT EXAM-2023

RANK HOLDERS OF ACADEMIC YEAR 2023

(I, III, V ,VII SEMESTERS)



UPCOMING EVENTS

- *'Azadi ka Amrut Mahotsav'* – 76th Independence Day Celebration

  14 August, 2023

  @ P.A.College of Pharmacy

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