

SRI PADMAVATHI SCHOOL OF PHARMACY

Mohan Gardens, Vaishnavi Nagar, Tiruchanoor (PO), Chittoor (Dist.), AP - 517503
(Accredited by NAAC "A" Grade, Accredited by NBA (for UG-Pharmacy up to 2025), Approved by AICTE & PCI,
New Delhi, Affiliated to JNTUA, Ananthapuramu, Recognized Under 2(f) & 12(B) of UGC Act.)



SPSP-DARPANAM

(July 2022-December 2022)

BI-ANNUAL COLLEGE MAGAZINE



From the Chairperson's desk....



Our vision is based on hard work, open communication, a strong emphasis on team work and a high level of responsibility. This visionary culture allows and emphasizes our wards not only to adopt the present day challenges but also individual responsibilities to the society and our nation at large. Learning should be based on doing things and not merely knowing things. Until and unless learning solutions relate to real life and motivate the learner to acquire and apply the knowledge, the whole process will remain superficial. Our institution has set specific objectives and planned activities for achieving excellence in all spheres of technical education.

I take this opportunity to express that every effort is made to improve the existing best services to bring out the best for the welfare of our institution and the growth of our students. **With best wishes**

Yours Smt. P.Sulochana

From the Director desk...



We cannot always build the future for our youth, but we can build our youth for the future."

I am quite pleased to learn about the forthcoming issue of the college magazine

Dear students, "You are the nation-builders. You are the movers of technology. You are the agents of change." It is our STRONG BELIEF that the years that you spend in SPSP would enable you to equip with leadership and managerial skills.

"You don't have to be great to start, but you have to start to be great."
With best wishes

Yours Mr.P.Praneeth

From the Principal desk....



The prestigious, Sri Padmavathi School of Pharmacy, since its inception in 1997 has made remarkable progress by following the mantra of student centric approach, whether it is in academics or in extra co-curricular activities. The institute possesses a state of art infrastructure with equipped laboratories, well stocked library and highly qualified faculty. We at, SPSP introduce our students to the Outcome Based Education and trained with skills in various disciplines.

In addition to developing excellent scientific and clinical based skills, the students are motivated not only to dream big but also encouraged to think unconventionally to face the challenges of the future and provide platform for Entrepreneurship.

Sports and other co-curricular activities are encouraged and the students are given every form of support to develop their talents in all fields. Our brand of education does not have narrow horizons, we believe in exposure. Our students are encouraged to widen their knowledge base and study beyond the confines of the syllabus.

With best wishes

Yours Dr.D.Ranganayakuli

Editor's message



A thought that has been enduring in mind when it becomes real; is truly an interesting and exciting experience. This news letter was one such cherished work that had its roots in the persuasion.

“Good leaders create a vision, articulate a vision and passionately owns a vision and turn it into a reality” - Jack Welch.

Coming to the collage magazine, I expect full cooperation from my fellow students and peers. New ideas, new sections in the issue of 2021 are always welcome by the Editorial Board. The editorial board is looking forward to make this magazine a vehicle for students to express their innermost thoughts.

I would like to thank all my editorial team members for helping me pull this through. I These contributions have required a generous amount of time and effort. It is this willingness to share knowledge, concerns and special insights with fellow beings that has made this magazine possible.

Thank you all!!

Dr.A. Srinivasa Charan

Vision

Promote holistic learning, nurture ethically strong and highly competent pharmacy graduates to serve the global healthcare system.

Mission

- M1:** To provide innovative and contemporary educational experiences of the highest quality.
- M2:** To instill ethics, sense of professionalism, communication and leadership skills.
- M3:** To promote and nurture the research and scholarly activities.
- M4:** To foster entrepreneurship and life-long learning.

Program Educational Objectives (PEOs)

- PEO1:** To produce competent pharmacy graduates with adequate knowledge and technical skills in the core and allied areas of pharmaceutical sciences & technology and to serve the needs of the health care system.
- PEO2:** To promote research and scholarly activities to identify, assess, formulate problem and execute solutions for the betterment or advancement of pharmaceutical sciences.
- PEO3:** To develop communication skills, leadership qualities, team building skills and instill the sense of professional ethics and social responsibilities in graduates.
- PEO4:** To prepare the graduates for life-long learning through their effective participation in professional and societal activities, integrate their knowledge and skills with contemporary needs of the society and for their highly productive career.

Institution achievements

- ❖ The institute was accredited with National board of accreditation (NBA) for the UG programme in the month of June 2022 up to 2024-25

NBA accreditation peer time visit (June 17th –June 19th 2022)



Awards received by Faculty

On 05-09-2022, in view of teacher's day, Jawaharlal technological university honored the principal, Dr, D. Ranganayakulu, by giving University best teacher award -2022 in the category of pharmaceutical sciences.



CO-CIRRICULAR ACTIVITIES

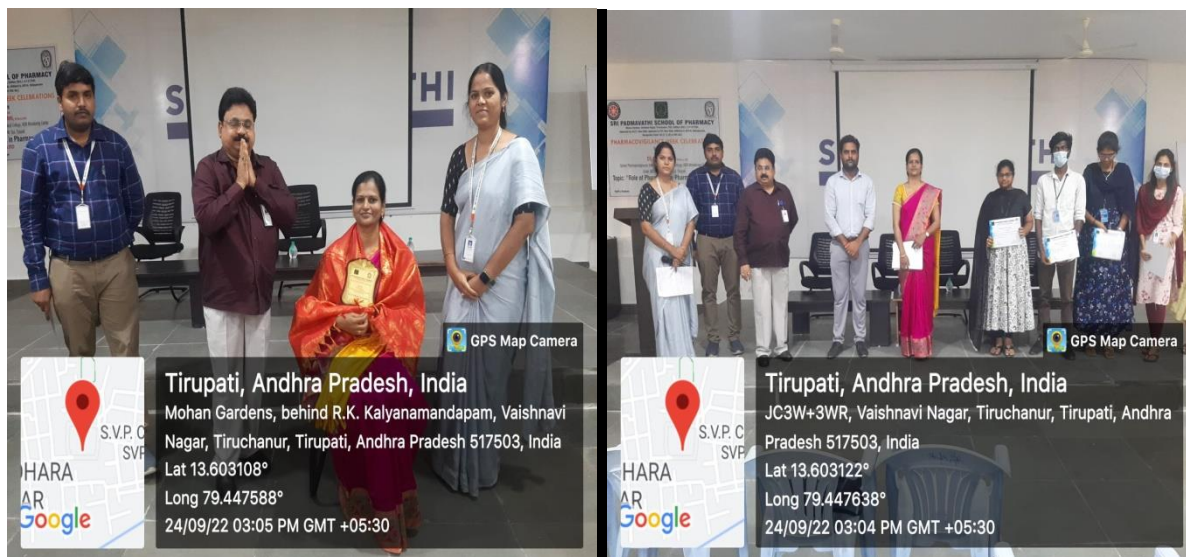
A guest lecture has been conducted on “Motivation and New expectations of pharma industry from pharma students, Director, Rainbow pharma training and Talluri pharma labs Pvt.Ltd. served as a speaker for this session. The session was focused on the importance of communication skills and expectations of pharma industry from the pharma students. 75 B. Pharmacy II year and III year students and faculty are attended for this session and actively participated.



A guest lecture has been conducted on 26-07-2022 about “How pharmacy students match the present scenario of Pharmaceutical Industry, Principal (Rtd.), College of Pharmaceutical sciences, Andhra University, served as a speaker for this session. The session was focused on to develop the adoptiveness and preparedness from the pharma students to the current needs of Pharmaceutical industry. 167 B- Pharm, M-Pharm and Pharm D students and faculty are attended for this session and actively participated.

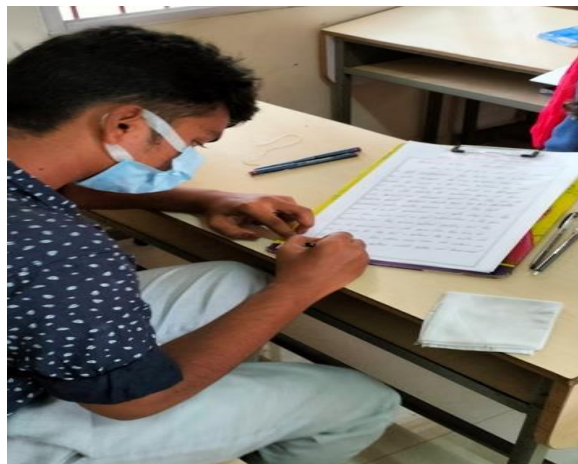


A guest lecture has been conducted on 24.09.2022 about “Roles of Pharmacist in Pharmacovigilance” Dr. R. Raja lakshmi Senior pharmacovigilance associate, SV medical college, Tirupati served as a speaker for this seminar. The seminar was focused on the Roles of Pharmacovigilance towards patient safety. Around 86 students and faculty are attended for this seminar and actively participated.



NSS activities

In the view of "**Azaadi ka Amrith Mahotsav**", on 10.08.2022, students were participated in Essay Writing Competition with the theme of "**75 years of Independence**".



- In the view of "**Azaadi ka Amrith Mahotsav**", Drawing Competition was conducted on 11.08.2022 with the theme of "**75 years of Independence**" at our campus.



- A rally with our National Flags was conducted on 13.08.2022 in view of "**Azaadi ka Amrith Mahotsav**". After the rally, our students distributed National flags house to house in initiation to "**Har ghar Tiranga**" at our adopted Village, Mundlapudi.



- 75 years of Independence was celebrated at our campus. Flag hoisting was done by our Chair Person, Mrs.P.Sulochalana madam. Prize distribution to the winners of Essay writing and drawing competitions and appreciations certificates for NSS Volunteers were distributed on this occasion.



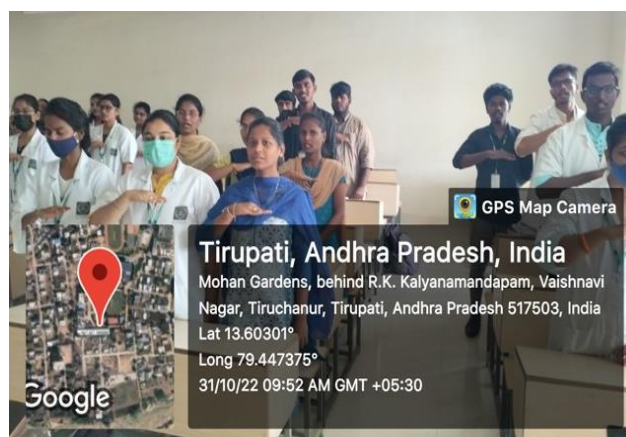
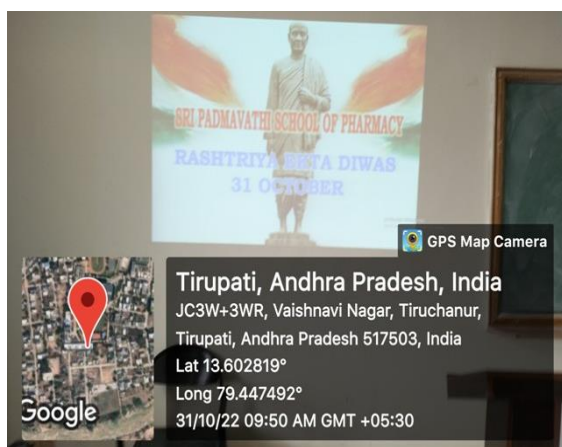
- ✚ "Blood Donation Camp" was organised at our campus in association with NTR Trust in the view of "Teachers Day ". 40 units of blood were donated by our teaching, non teaching staff and students in this camp. NTR Trust which led by Mr.Ravi Kumar with his team, Miss.Swetha, Mr.Muni Anand, Mr.Gnanendra Reddy, Mr. Sai Krishna and Mr.Syed David along with our NSS Volunteers involved in smooth conduction of this programme.As part celebrations, Cultural and games were conducted to Teachers by our students and momentos were presented to the participants.



- ✚ On the occasion of "**NSS Foundation Day**", an awareness rally with the theme of "**Pharmacy united in action for a healthier world**" was conducted from our campus upto Ghantasala circle in Tiruchanoor. The Rally was inaugurated by our Chairperson,Smt.P.Sulochana Garu and Principal, Dr.D.Ranganayakulu garu. 450 students along with Teaching and non-teaching staff participated in the Rally.



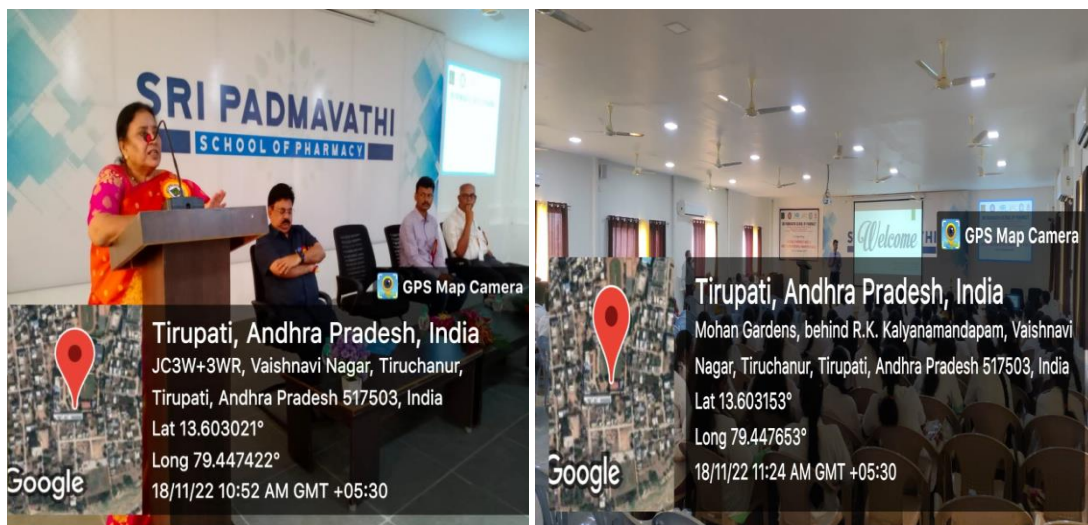
- On the birth anniversary of Sardar Vallabh Patel, National Unity Day (Rastriya Ektha Diwas) was celebrated at our campus. In this regard, all the students gathered and took the unity pledge.



- One week 61st National Pharmacy Week (NPW) & World Antimicrobial Awareness Week (WAAW), Nov-2022 has been organized in Association with IPA Branch, Tirupati with a theme of "Pharmacy of the world-India" & "Preventing Antimicrobial Resistance together" from 18.11.2022 to 24-11-2022 was conducted in SPSP Campus.

National Pharmacy week celebrations (NPW) (18.11.2022 to 24-11-2022)

On first day of NPW & WAAW, an awareness talk on "Infections of ENT and Rational use of Ayurvedic antimicrobial" by Dr.P.Jagadish Kumar Reddy Associate Professor & HOD, Department of ENT and Ophthalmology, S.V. Ayurvedic Medical College, Tirupati, The Session was focused on use of Ayurvedic antimicrobials.

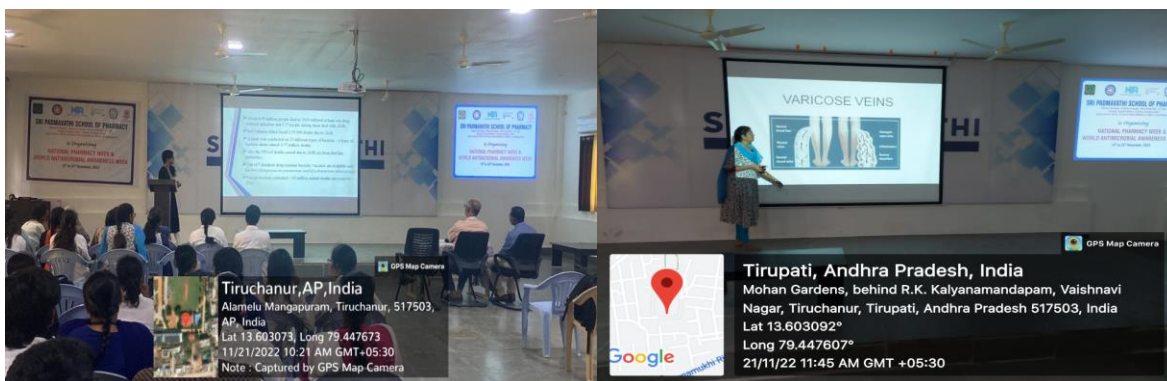


19.11.2022: Antimicrobial awareness rally

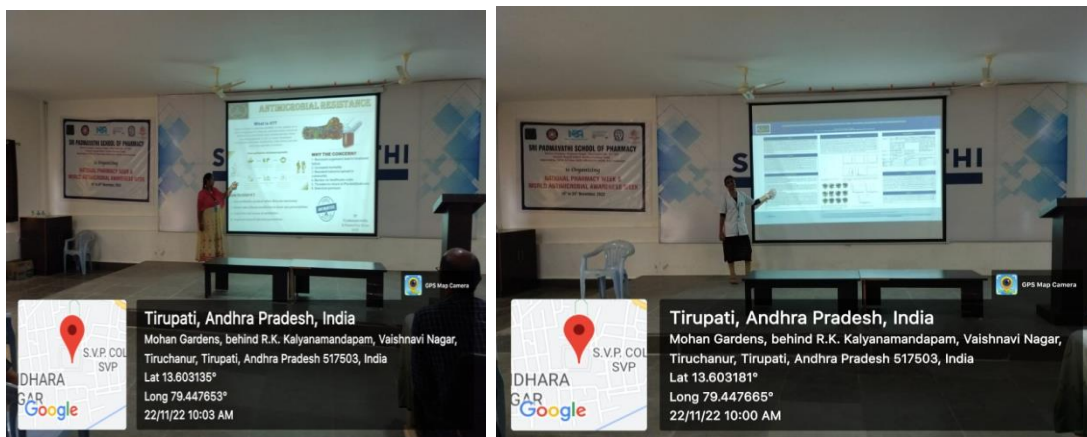
On second day of NPW & WAAW, Sri Padmavathi school of Pharmacy organized an awareness rally in Tiruchanoor on 19.11.2022 in Association with IPA Local Branch, Tirupati with the theme of "Pharmacy of the world-India" & "Preventing Antimicrobial Resistance together". A total of 350 students including Principal, Vice Principal, Teaching and Non-Teaching Faculty members along with our NSS volunteers were participated in rally. In the rally students highlighted the importance of 61st National Pharmacy Week (NPW) & World Antimicrobial Awareness Week (WAAW), Nov-2022 by displaying banners & placards.



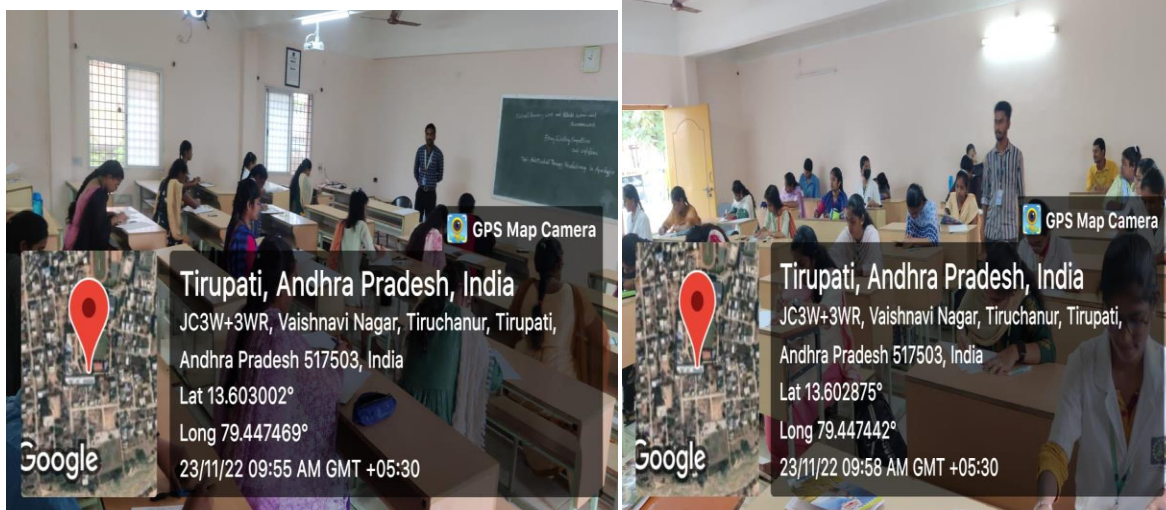
On the third day of NPW & WAAW, Sri Padmavathi school of Pharmacy organized the Oral Presentations on 21.11.2022 in Association with IPA Branch, Tirupati with the theme of "Pharmacy of the world-India" & "Preventing Antimicrobial Resistance together". 15 delegates from different colleges & SPSP participated enthusiastically and presented various topics in the oral presentations.



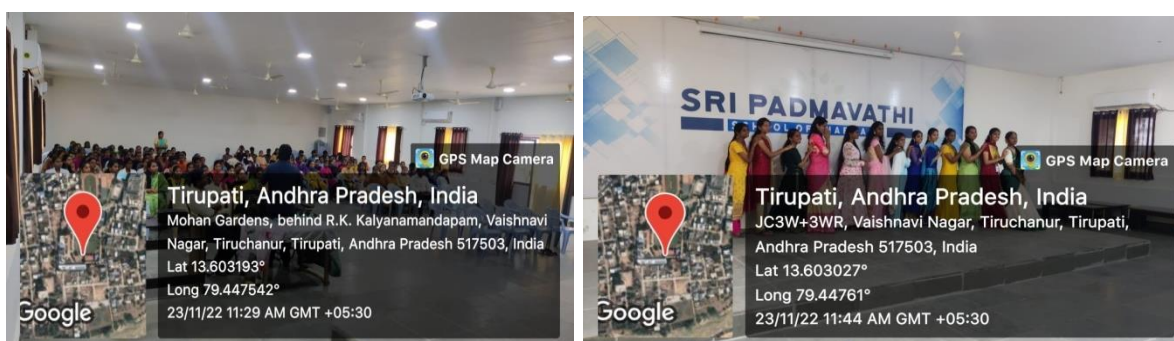
On the fourth day of NPW & WAAW, Sri Padmavathi school of Pharmacy organized the e-Poster Presentations on 22.11.2022 in Association with IPA Branch, Tirupati with the theme of "Pharmacy of the world-India" & "Preventing Antimicrobial Resistance together". 10 delegates from different colleges & SPSP participated enthusiastically and presented various topics in the E-Poster presentations.



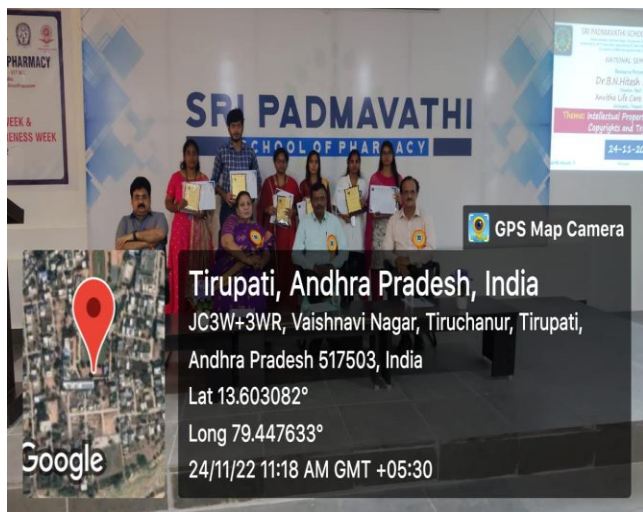
On the fifth day of NPW & WAAW, Sri Padmavathi school of Pharmacy organized the essay writing Competitions on 23.11.2022 in Association with IPA Branch, Tirupati with the theme of "Antimicrobial therapy: Revolutionary to apocalypse". 27 students of SPSP had participated in essay writing Competitions enthusiastically.



On the fifth day of NPW & WAAW, Sri Padmavathi school of Pharmacy organized the Traditional Regalia on 23.11.2022 in Association with IPA Branch, Tirupati with the theme of "Pharmacy of the world-India" & "Preventing Antimicrobial Resistance together". Students of SPSP had participated in Traditional Regalia with different dress codes & dances.



On the last day of NPW & WAAW, Sri Padmavathi school of Pharmacy organized a Guest Lecture on "Significance of Chirality in Pharmaceutical Industry" by Dr.B.N.Hitesh Kumar, Director, R&D, Anvitha Life Care Pvt.Ltd., Naidupeta, Tirupati, India. The Session was focused on importance of Chirality in Pharmaceutical Industry, followed by technical sessions, valedictory session and Prize distribution. 150 B.Pharm, M.Pharm & Pharm D students and faculty including 75 NSS volunteers have attended the programme.



Discrimination against women pakhwada was conducted at our campus. Awareness was given on women and girls everywhere who are being subjected to significant discrimination, laws abiding to women discrimination and practices.

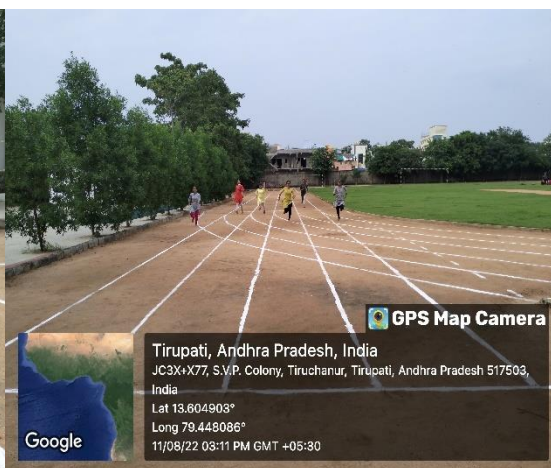


Under the global umbrella theme of the 2022 UNITE Campaign: *“UNITE! Activism to End Violence against Women & Girls”*, the event will shine a spotlight on the powerful role of women’s rights movements in preventing and eliminating violence against women and girls. The objective behind celebrating the day is to eliminate and prevent violence against women and girls. The UN International Day for the Elimination of Violence against Women is celebrated every year on 25 November. Later competitions like Elocution, Yoga, Culturals were conducted and winners were awarded.



❖ Extra-curricular activities

- The Sports club of SWC of SPSP organized **Running -100M** on 11.08.2022 as sports help in enhancing physical, social, creative and healthy competitive spirit among students. The program was inaugurated by Respected Principal of SPSP Dr.D.Ranganayakulu. A total of 15 students from both B pharm and Pharm D participated in the competition and it was carried out under Supervision of Physical director of SPSP Mr.Shankar & Sports In charge Dr.P.Saisunil and Mrs.G.Divya. 1st prize bagged by Soumithri, 2nd occupied by Kusuma and 3rd prize went for Mounika Guggilla. All the winners were awarded with exciting prizes.

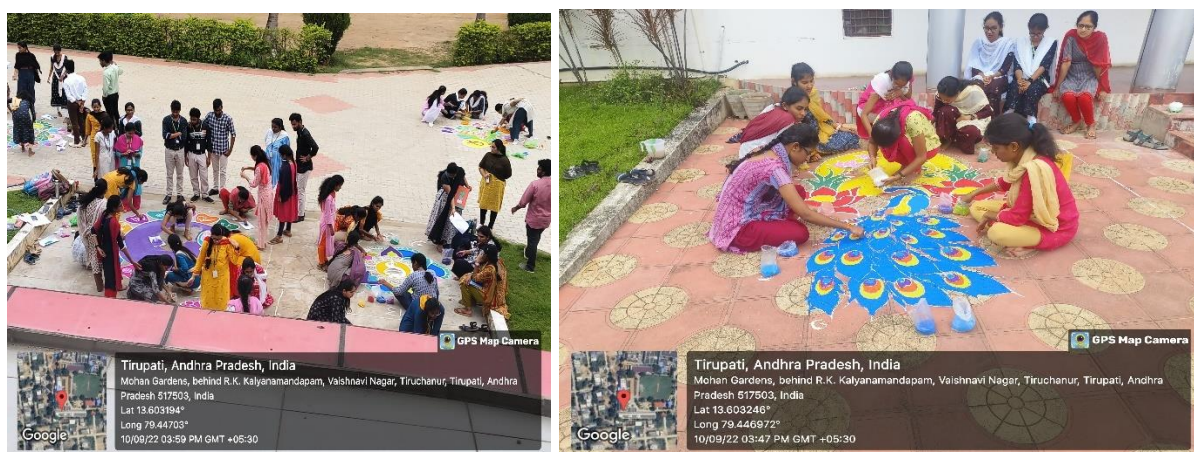


- The Sports club of SWC of SPSP organised **Relay competition** in view of Independence Day as sports help in enhancing physical, social, creative and healthy competitive spirit among students. The program was inaugurated by Respected Principal of SPSP Dr.D.Ranganayakulu Garu. A

total of 20 students from both B pharm and Pharm D participated in the competition, and it was carried out under Supervision Physical director of SPSP Mr. Shankar & Sports In charge Dr.P.Saisunil and Mr. P.Subramanyam. 1st prize bagged by team Mounika Guggilla and team, 2nd prize won by Shishila and team and 3rd prize won by Keerthi Priya and team. All the winners are awarded with Prizes and Mementoes.

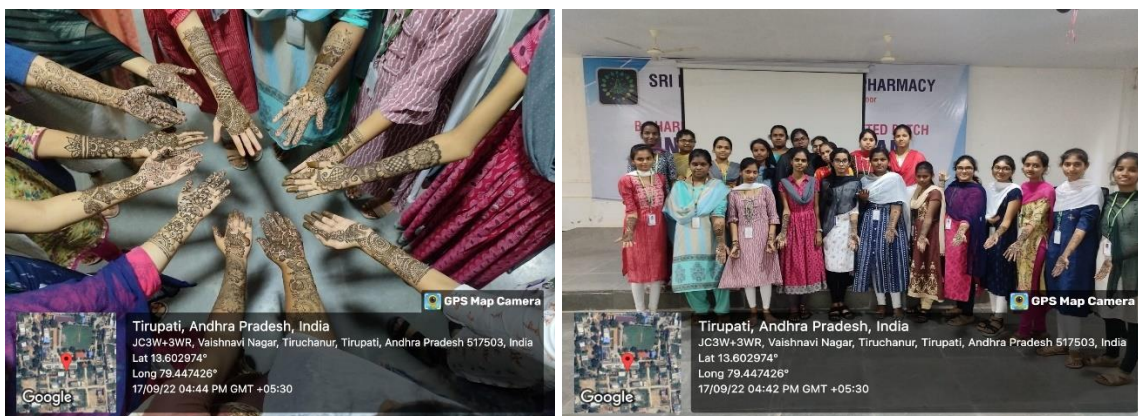


As a part of encouraging the girl students, The Cultural club of SWC of SPSP organised **Rangoli competition** on 10-09-2022. The program was started by Respected Chairperson of SPSP Smt. P. Sulochana Garu. A total of 45 girl students both from B Pharm and Pharm D participated in the event and made it a grand success. Rangoli were evaluated by Senior lady faculty Dr. P. Keerthi Sikha, Mrs. P. Lakshmi, Mrs. M. Himasaila and Winners were awarded.

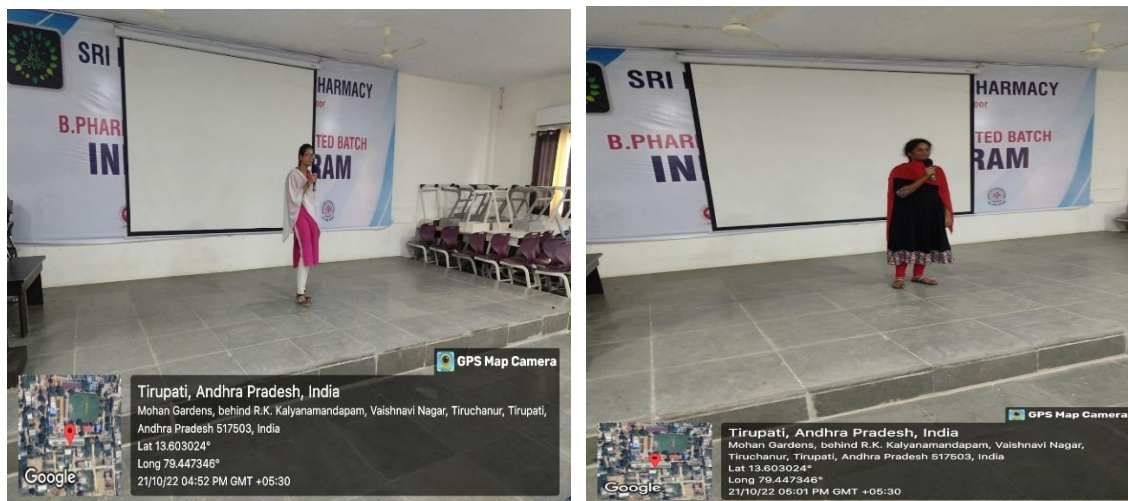


The Cultural club of SWC of SPSP organised **Mehandi competition** on 17-09-2022. The program was inaugurated by Lady Faculty of SPSP. A total of 20 girl students both from B pharm and Pharm D participated in the event and made

a grand success. It was Carried out under the supervision of Ms. H. Neelofar, Mrs. P. Lakshmi. 1st prize bagged by Shaik. Rifath, 2nd prize won by Chandrika Sravanthi and 3rd prize went for T. Mounika Winners were awarded.



- The Cultural club of SWC of SPSP organised singing competition on world Singing Day on 21-10-2022. Event was evaluated by Mrs. C. Sireesha, Cultural Advisor of SPSP, A total of 15 students participated in the competition from both B Pharm and Pharm D. 1st prize bagged by Chandrika Sravanthi, 2nd prize won by Rishitha. Winners were awarded with exciting prizes.



- The Cultural club of SWC of SPSP organized a skit on Discrimination against women & They provided Awareness on women and girls everywhere who are being subjected to significant discrimination, laws abiding to women discrimination and practices. It was the need of hour in present society.



- ✚ The Cultural club of SWC of SPSP organised hair dressing competition on 17-09-2022. A total of 15 girl students both from B pharm and Pharm D participated in the event and made a grand success under supervision of Mrs. P. Lakshmi and Ms. M. Bindhu Priya. Winners were awarded wherein Balam Vanitha stood first place, Shaik. Rifath in second place and Thingalur. Mounika in third place.



❖ Entrepreneurship news

- ✚ Entrepreneurship development cell initiated a program on the topic **“Inspire People around you”** on 28.10.2022 by **Mr.Y.Gopichand**. He has inspired students about the entrepreneurs who create opportunities where they can transform in to bigger part in contributing to nation wealth. And also gave crisp tips to the budding entrepreneurs. 41 students of Final year B.Pharm and 17 students of Final year Pharm.D attended the event.



❖ Soft skills programs organized on awareness of trends in technology

- ✚ The Sri Padmavathi School of Pharmacy came up with an idea to organize an event namely **“DATA MANAGEMENT AND QUERIES SKILLS”** to give the students’ knowledge about one of the most important pillars of success, which is communication and how to communicate while speaking in public. The workshop took place 12th August, 2022, 11 a.m. onwards in the College, Seminar Hall. There were around 65 students who took part in the workshop.



✚ The event was organized namely “SOFTWARE TOOLS IN PHARMACY” to give the students’ knowledge about software that were being used in the pharmacy field. The workshop took place 9th December, 2022, 11 a.m. onwards in the college seminar hall. There were around 78 students who took part in the workshop.

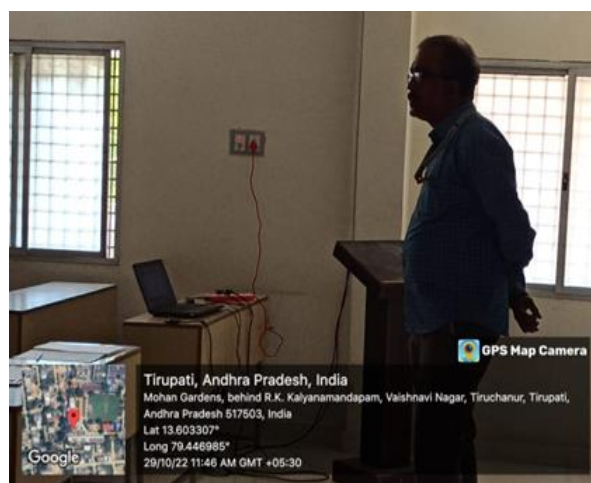


Soft skills programmes organised on language skills

The event was organized namely “WORKSHOP ON PUBLIC SPEAKING” to give the students’ knowledge about one of the most important pillars of success, which is communication and how to communicate while speaking in public. The workshop took place 8th July, 2022, 2 p.m. onwards in the college seminar hall. There were around 60 students who took part in the workshop.



“WORKSHOP ON MIND AND CONCEPT MAKING” was conducted to give the students’ knowledge about mind mapping and also about concept making. The workshop took place 29th October, 2022, 11 p.m. onwards in the college seminar hall. There were around 76 students who took part in the workshop.



Soft skills programmes organised on life skills

The event conducted on “STRESS MANAGEMENT” to give the students’ knowledge about how to overcome the stress during the education period and also how to manage the stress. The workshop took place on 22nd July, 2022, 2 p.m. onwards in the college seminar hall. There were around 60 students who took part in the workshop.



The event named “IMAGINATION AND CREATIVITY” was organised to give the students’ knowledge about mind mapping and also about concept making. The workshop took place 9th November, 2022, 2 p.m. onwards in the college seminar hall. There were around 74 students who took part in the event.



Programmes organised on Soft skills

The programme on Decision making and critical thinking was conducted to give the knowledge about how to make a decision and also awareness on critical thinking. The workshop took place 15th July, 2022, 2 p.m. onwards in the college seminar hall/ class room There were around 75 students who took part in the workshop.



The event on Problem solving and creativity was conducted to give the knowledge about how to make a decision and also awareness on critical thinking. The workshop took place 7-SEP, 2022, 11 a.m. onwards in the college seminar hall/ class room There were around 75 students who took part in the workshop.



FDA NEW DRUG APPROVALS 2022

S.No	New drug	Date of approval	Indication
1.	Daridorexant	07-01-2022	To treat insomnia
2.	Abrocitinib	14-01-2022	To treat refractory, moderate-to-severe atopic dermatitis
3.	Tebentafusp-Tebn	25-01-2022	To treat unresectable or metastatic uveal melanoma
4.	Faricimab-Svoa	28-01-2022	To treat neovascular (wet) age-related macular degeneration and diabetic macular edema
5.	Sutimlimab-Jome	04-02-2022	To decrease the need for red blood cell transfusion due to hemolysis in cold agglutinin disease
6.	Mitapivat	17-02-2022	To treat hemolytic anemia in pyruvate kinase deficiency
7.	Pacritinib	28-02-2022	To treat intermediate or high-risk primary or secondary myelofibrosis in adults with low platelets
8.	Ganaxolone	18-03-2022	To treat seizures in cyclin-dependent kinase-like 5 deficiency disorder
9.	Nivolumab And Relatlimab-Rmbw	18-03-2022	To treat unresectable or metastatic melanoma
10.	Lutetium (177Lu) Vipivotide Tetraxetan	23-03-2022	To treat prostate-specific membrane antigen-positive metastatic castration-resistant prostate cancer following other therapies
11.	Oteseconazole	26-04-2022	To reduce the incidence of recurrent vulvovaginal candidiasis (RVVC) in females with a history of RVVC who are not of

			reproductive potential
12.	Mavacamten	28-04-2022	To treat certain classes of obstructive hypertrophic cardiomyopathy
13.	Vonoprazan, Amoxicillin, And Clarithromycin	03-05-2022	To treat <i>Helicobacter pylori</i> infection
14.	Tirzepatide	13-05-2022	To improve blood sugar control in diabetes, in addition to diet and exercise
15.	Tapinarof	23-05-2022	To treat plaque psoriasis
16.	Vutrisiran	13-06-2022	To treat polyneuropathy of hereditary transthyretin-mediated amyloidosis
17.	Olipudase Alfa	31-08-2022	To treat Acid Sphingomyelinase Deficiency
18.	Spesolimab-Sbzo	01-09-2022	To treat generalized pustular psoriasis flares
19.	Daxibotulinumtoixna-Lanm	07-09-2022	To treat moderate-to-severe glabellar lines associated with corrugator and/or procerus muscle activity
20.	Deucravacitinib	09-09-2022	To treat moderate-to-severe plaque psoriasis
21.	Eflapegrastim	09-09-2022	To decrease the incidence of infection in patients with non-myeloid malignancies receiving myelosuppressive anti-cancer drugs associated with clinically significant incidence of febrile neutropenia
22.	Terlipressin	14-09-2022	To improve kidney function

			in adults with hepatorenal syndrome with rapid reduction in kidney function
23.	Gadopictlenol	21-09-2022	To detect and visualize lesions, together with MRI, with abnormal vascularity in the central nervous system and the body
24.	Oomidenepag Isopropyl Ophthalmic Solution	22-09-2022	To reduce elevated intraocular pressure in patients with open-angle glaucoma or ocular hypertension
25.	Sodium Phenylbutyrate/Taurursodiol	29-09-2022	To treat amyotrophic lateral sclerosis (ALS)
26.	Futibatinib	30-09-2022	To treat intrahepatic cholangiocarcinoma harboring fibroblast growth factor receptor 2 (FGFR2) gene fusions or other rearrangements
27.	Tremelimumab	21-10-2022	To treat unresectable hepatocellular carcinoma
28.	Teclistamab-Cqyv	25-10-2022	To treat relapsed or refractory multiple myeloma among adults who have received at least four specific lines of therapy
29.	Mirvetuximab Soravtansine-Gynx	14-11-2022	To treat patients with recurrent ovarian cancer that is resistant to platinum therapy
30.	Teplizumab-Mzww	18-11-2022	To delay the onset of stage 3 type 1 diabetes
31.	Olutasidenib	01-12-2022	To treat adults with relapsed or refractory acute myeloid leukemia with a susceptible isocitrate dehydrogenase-1 (IDH1) mutation

32.	Adagrasib	12-12-2022	To treat KRAS G12C-mutated locally advanced or metastatic non-small cell lung cancer in adults who have received at least one prior systemic therapy
33.	Lenacapavir	22-12-2022	To treat adults with HIV whose HIV infections cannot be successfully treated with other available treatments due to resistance, intolerance, or safety considerations
34.	Mosunetuzumab-Axgb	22-12-2022	To treat adults with relapsed or refractory follicular lymphoma, a type of non-Hodgkin lymphoma

PHARMA NEWS 2022(JULY TO DECEMBER)

- **A milestone in AI predictions**



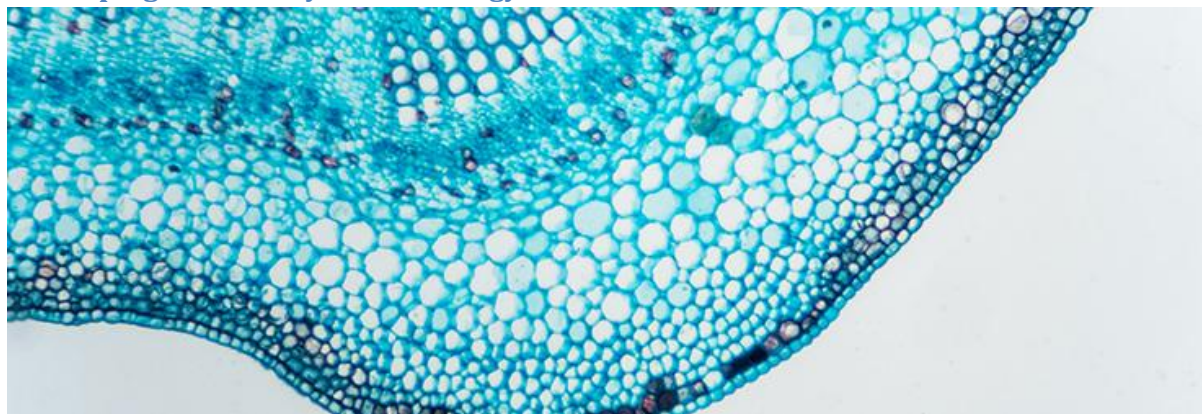
For decades, the scientific community has chased a greater understanding of relationships between protein functions and 3D structures. In July 2022, Deep Mind revealed that the folded 3D structure of a protein molecule can be predicted from its linear amino-acid sequence using AlphaFold2, RoseTTAFold, and trRosettaX-Single algorithms.

The algorithms predictions reduced the number of human proteins with unknown structural data from 4,800 to just 29. While there will always be challenges with AI, the ability to predict

protein structures has implications across all life sciences. Key challenges in the future include modeling proteins with intrinsic disordered properties and those that change structures by post-translational modifications or to environmental conditions. Beyond protein modeling, AI advancements continue to reshape workflows and expand discovery capabilities across many industries and disciplines.

S.Kavya, Pharm D IV year

Developing trends in synthetic biology



Synthetic biology has the potential to redefine synthetic pathways by using engineered biological systems (i.e., microorganisms, for which a large part of the genome or the entire genome has been designed or engineered) to manufacture a range of biomolecules and materials, such as therapeutics, flavors, fabrics, food, and fuels. For example, insulin could be produced without pig pancreas, leather without cows, and spider silk without spiders. The potential in life sciences alone is unbelievable, but when applied to manufacturing industries, synthetic biology could minimize future supply chain challenges, increase efficiency, and create new opportunities for biopolymers or alternative materials with more sustainable approaches. Today, teams use AI-based metabolic modeling, CRISPR tools, and synthetic genetic circuits to control metabolism, manipulate gene expression, and build pathways for bioproduction. As this discipline begins to cross over into multiple industries, the latest developments and emerging trends for metabolic control and engineering challenges are showcased in a 2022 Journal of Biotechnology article.

Himasree, Pharm D IV year

Single-cell metabolomics set to soar



While much progress has been made in genetic sequencing and mapping, genomics only tells us what a cell is capable of. To have a better understanding of cellular functions, proteomic and metabolomic approaches offer different angles for revealing molecular profiles and cellular pathways. Single-cell metabolomics gives a snapshot of the cellular metabolism within a biological system. The challenge is that metabolomes change rapidly, and sample preparation is critical to understand cell function. Collectively, a series of recent advancements in single-cell metabolomics (from open-sourced techniques, advanced AI algorithms, sample preparations, and new forms of mass spectrometry) demonstrates the ability to run detailed mass spectral analyses. This allows researchers to determine the metabolite population on a cell-by-cell basis, which would unlock enormous potential for diagnostics. In the future, this could lead to the ability to detect even a single cancerous cell in an organism. Combined with new biomarker detection methods, wearable medical devices and AI- assisted data analysis, this array of technologies will improve diagnosis and lives.

NITHYA SREE, PHARM D V YR

New catalysts enable greener fertilizer production

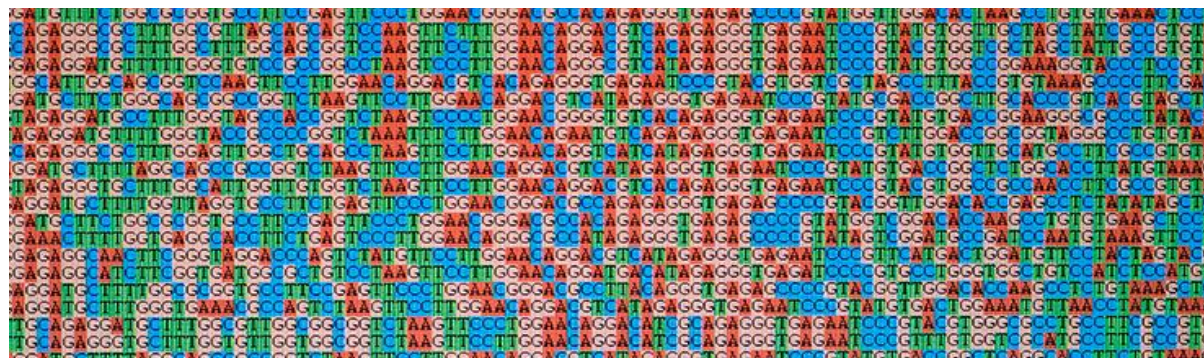


Every year, billions of people depend on fertilizers for the ongoing production of food, and reducing the carbon footprint and expenses in fertilizer production would reshape the impact agriculture has on emissions. The Haber-Bosch process for fertilizer production converts nitrogen and hydrogen to ammonia. To reduce energy requirements, researchers from [Tokyo Tech](#) have developed a [noble-metal-free nitride catalyst](#) containing a catalytically active transition metal (Ni) on a lanthanum nitride support that is stable in the presence of moisture. Since the catalyst doesn't contain ruthenium, it presents an inexpensive option for reducing the

carbon footprint of ammonia production. The La-Al-N support, along with the active metals, such as nickel and cobalt (Ni, Co), produced NH₃ at rates similar to conventional metal nitride catalysts.

TRIVENI , PHARM D IV YR

Advancements in RNA medicine



While the application of mRNA in COVID-19 vaccines garnered lots of attention, the real revolution of RNA technology is just beginning. Recently, a new multivalent nucleoside-modified mRNA flu vaccine was developed. This vaccine has the potential to build immune protection against any of the 20 known subtypes of influenza virus and protect against future outbreaks. Many rare genetic diseases are the next target for mRNA therapies, as they are often missing a vital protein and could be cured by replacing a healthy protein through mRNA therapy. In addition to mRNA therapies, the clinical pipeline has many RNA therapeutic candidates for multiple forms of cancers, and blood and lung diseases. RNA is highly targeted, versatile, and easily customized, which makes it applicable to a wide range of diseases.

VISHNU PRIYA, PHARM D IV YR

Rapid skeletal transformation

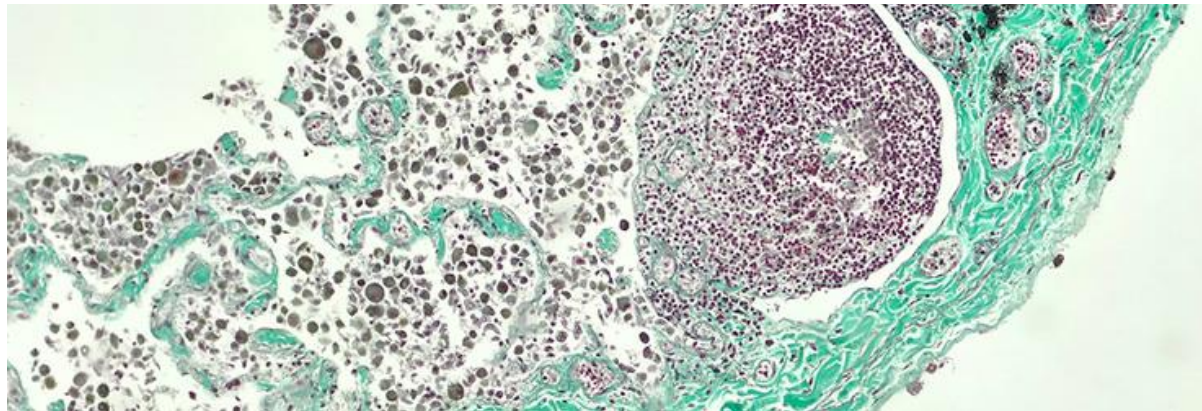


Within synthetic chemistry, the challenge of safely exchanging a single atom in a molecular framework or inserting and deleting single atoms from a molecular skeleton has been formidable. While many methods have been developed to functionalize molecules with peripheral substituents (such as C-H activation), one of the first methods to perform single-atom modifications on the skeletons of organic compounds was developed by Mark Levin's group at

the University of Chicago. This enables selective cleaving of the N–N bond of pyrazole and indazole cores to afford pyrimidines and quinazolines

NAVEEN, PHARM D IV YR

Advancing limb regeneration



Limb loss is projected to affect over 3.6 million individuals per year by 2050. For the longest time, scientists believed the single biggest key to limb regeneration is the presence of nerves. However, work done by Dr. Muneoka and his team demonstrated the importance of mechanical load to digit regeneration in mammals and that the absence of a nerve does not inhibit regeneration. The advancement of limb regeneration was also achieved by researchers at Tufts University who have used acute multidrug delivery, via a wearable bioreactor, to successfully enable long-term limb regeneration in frogs. This early success could potentially lead to larger, more complex tissue re-engineering advances for humans, eventually benefiting military veterans, diabetics, and others impacted by amputation and trauma.

HARATHI, PHARM D IV YR

DO U KNOW????????? FACTS....

