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MESSAGE

The Pharmafest is an annually hosted, skill-showcasing platform for the students of the Department of Pharmaceutical Sciences of North South University that has always been something to look forward to. It is a potential game-changer, one that has established new standards in terms of unifying academics with extracurriculars that serve to commemorate, as well as ameliorate the intricate workways of the young, talented minds of this discipline.

A multifaceted program, the Pharmafest tends to outdo itself sequentially through fascinating poster presentations, the spirited Pharma Olympiad, captivating cultural nights, and other highly anticipated events. The free thinkers, the broad vision bearers, science enthusiasts, or even the remotely curious are free to contribute to the variance of the program itself, which simply enlivens as well as enriches the wide amalgamation of scientific viewpoints. These amalgamations, in turn, influence the students to aim further and bigger than ever.

The fervent dedication of the students in shaping the primary framework of the Fest all the way to sharpening the details to create a flawless depiction of a professional event will, as always, result in the initiation of a fine, ceremonious Fest. I would like to forward my deepest admiration and unhindered well wishes to the respected faculty members, North South University Pharmaceutical Club (NSUPC), and all the students for managing and organizing this magnificent event.

Major General Mohammad Yousuf
Director General
Directorate General of Drug Administration
Ministry of Health & Family Welfare
Health Services Division
Government of the People's Republic of Bangladesh

MESSAGE

North South University (NSU) is back again with another Pharmafest, organized by the Department of Pharmaceutical Sciences and North South University Pharmaceutical Club (NSUPC). Pharmafest 2022 brings in industry experts in the field of pharmaceutical science and healthcare at NSU. They give insight into pharmaceutical companies—how drugs are invented, developed, tested, mass-produced, and administered to the people.

NSU has an excellent pharmacy program that enrolls the sharpest 200 candidates after a rigorous screening. For these pharmacy majors, Pharmafest is an exceptional platform to have a deeper understanding of their prospects as pharmacists.

I would like to congratulate the organizers and the participants involved in making Pharmafest 2022 a great success.

Professor Atiqul Islam
Vice Chancellor
North South University

MESSAGE

I am gratified to celebrate one of the most anticipated events of North South University, Pharmafest 2022. Besides displaying vibrant talent, Pharmafest provides a platform for research, innovation, and exploration of fresh ideas that set out the potential for discovery and scientific breakthroughs in different branches of medicine. Such an event serves as a testimony of excellence in research and innovation for pharmacists.

This event includes the Pharma Olympiad, scientific Stall Exhibitions, scientific Poster Presentations, and the most intriguing cultural evening is always a pleasure to see. I am glad to announce that around 20 companies and 16 universities will showcase new ideas and projects at this event. This event will definitely serve as a bridge between industries, universities, students, and faculty members, which will promote the proficiency, confidence, and leadership qualities of the participating students. In addition, the interaction between pharmaceutical companies and future pharmacists through this festival lets them share their vision about quality products and their further improvement by implementing new functionalities. An immense thanks to everyone engaged with Pharmafest 2022, especially the students of North South University Pharmaceutical Club, for their efforts in establishing the event as a tremendously successful one.

Dr. M. Ismail Hossain
Pro Vice-Chancellor, Treasurer (in-charge) &
Professor
North South University

MESSAGE

I am delighted to know that the most-awaited Pharmafest is back on the NSU campus, organized by the North South University Pharmaceutical Club in collaboration with the Department of Pharmaceutical Sciences. As we all know, due to the COVID-19 pandemic, Pharmafest has been dearly missed for two consecutive years. Hence, I very much look forward to a gorgeous comeback of the Pharmafest 2022.

Over the years, Pharmafest has garnered a reputation for being an excellent networking event for pharmacy students and members of the pharmaceutical industry. Students have the opportunity to express their innovative ideas and showcase their creativity via Stall Exhibition, Poster Presentation, Pharma Olympiad, and more. Pharmafest is not only an event for enjoyment but also a platform for pharmacy students to interact with professional pharmacists to enrich their knowledge and help them be prepared for their careers. Participants and spectators alike will learn much about the latest advancements in the pharma and healthcare sectors. I highly encourage everyone to participate, enjoy, and make the most of this special opportunity.

I would like to extend my thanks to the organizers from the NSU Pharmaceutical Club, faculty members, and students of the Department of Pharmaceutical Sciences for making this event a grand success.

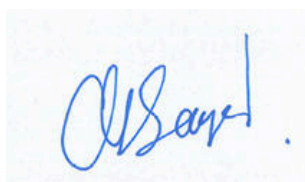
Prof. Dr. Hasan Mahmud Reza
Professor and Dean
School of Health & Life Sciences
North South University

MESSAGE

As the Chairman of the Department of Pharmaceutical Sciences, North South University, it has always been a pleasure to organize the annual Pharmafest, which has now become one of the grandest events of North South University. This would not have been possible without the people working behind the scenes, that is the members of North South University Pharmaceutical Club and the Department of Pharmaceutical Sciences.

The event mainly focuses on uniting the students of the department with renowned pharmaceutical companies. This gives the students the opportunity to showcase their talents in academics and other areas by taking part in Olympiads, Poster Presentations, Stall Exhibitions and much more. The students also have the opportunity to propose innovative ideas to the current leaders of the pharmaceutical industries which may have the potential to aid in medicine development.

I would like to express my gratitude to all the members of NSU Pharmaceutical Club, the Faculty Advisor, faculty members and the students for their consistent diligence in order to make this year's Pharmafest a grand success.



Dr. G. M. Sayedur Rahman
Professor & Chair
Department of Pharmaceutical Sciences
North South University

MESSAGE

North South University Pharmaceutical Club (NSUPC), in association with the Department of Pharmaceutical Sciences have worked diligently in the past years to make Pharmafest one of the grandest events at NSU. As the Director of Student Affairs, it has always been my pleasure to witness the students of NSUPC continuously striving for success in all events, and effectively working as a team in order to deliver awareness of various healthcare topics to the public.

Due to the halt in student activities during the COVID-19 pandemic, it is my utmost delight to see NSU premises enlivened once again through such important events. I am hopeful that Pharmafest will do the same and will emulate the success of previous years also. I extend my well wishes to the organizing members of this event, and await to witness its success.

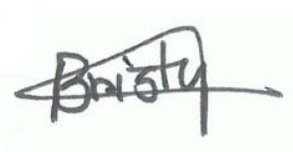
Dr. Gour Gobinda Goswami
Director, Office of Student Affairs
North South University

MESSAGE

As the newly appointed Faculty Advisor for the NSU Pharmaceutical Club, it has been a pleasure to guide, support, and work along the enthusiastic members of the club in arranging the Pharmafest 2022. The Pharmafest stands to be the most important event in the Department of Pharmaceutical Sciences, and one of the grandest in all of North South University.

Despite the pandemic preventing the event from taking place in recent years, Pharmafest is making a comeback through the hard work of the members of the NSU Pharmaceutical Club. This is an amazing opening for the students to put their academic knowledge into practical use to create fresh and innovative projects, along with having the opportunity to collaborate with their faculties and pharmaceutical industry professionals.

I extend my gratitude and encouragement to the executive body and the members of the Pharmaceutical Club for being so diligent towards arranging this wonderful event.



Anika Tabassum Bristy
Faculty Advisor
North South University Pharmaceutical Club

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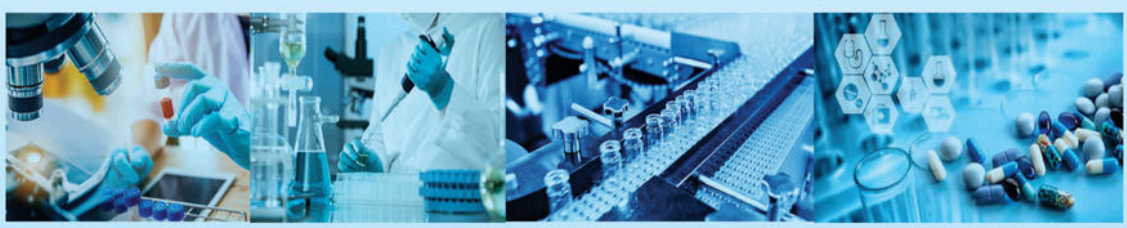

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EDITORIAL

After two long years of Covid-19 pandemic comes a reprieve of excitement and zeal in the form of Pharmafest 2022 brought to you by the North South University Pharmaceutical Club (NSUPC) in association with the Department of Pharmaceutical Sciences. This also provides an opportunity for the Publication Team to proudly present the annual magazine which contains records of student and faculty accomplishments along with highlights of important events hosted by the club and the department. The issue is published during the Pharmafest and acts as a testimony of the immense talent and brilliance which resides within the members of this department. Pharmafest is an important event bringing together university students, faculty members, professionals of the pharmaceutical companies and esteemed members of the pharmaceutical and health sector under one interactive roof.

This year, our theme "Pharmacists for the Healthier World", puts special emphasis on the integral role played by pharmacists all around the globe in warranting quality healthcare services for everyone. This was particularly evident during the pandemic where pharmacists have actively worked around the clock in ensuring sufficient supply of drugs, imparting drug information, providing medical consultation where needed and most of all in dispensing safe and efficacious drugs to patients.

Pharmafest is the flagship event of NSUPC, which has only gained popularity and support since its initiation years ago, as not only does it encourage students to participate and share their knowledge through various competitions but it also provides a collaborative network where students can interact and communicate with distinguished members of the pharmaceutical sector of our country. It is truly an honorable moment for us to be able to provide a platform in which students can display their innovative ideas with a creative twist as a testament of their scientific intelligence.

The publication of this magazine is a culmination of the diligence and dedication of the members of the Publication Team who have strived tirelessly for a fruitful outcome. We sincerely hope you enjoy this issue and indulge yourselves in the labor of the team.

Editors

Dr. Asim Kumar Bepari
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Department of
Pharmaceutical Sciences

Ramisha Anan Rahman
Publication Secretary
NSUPC

Sayema Salahuddin
Publication Secretary
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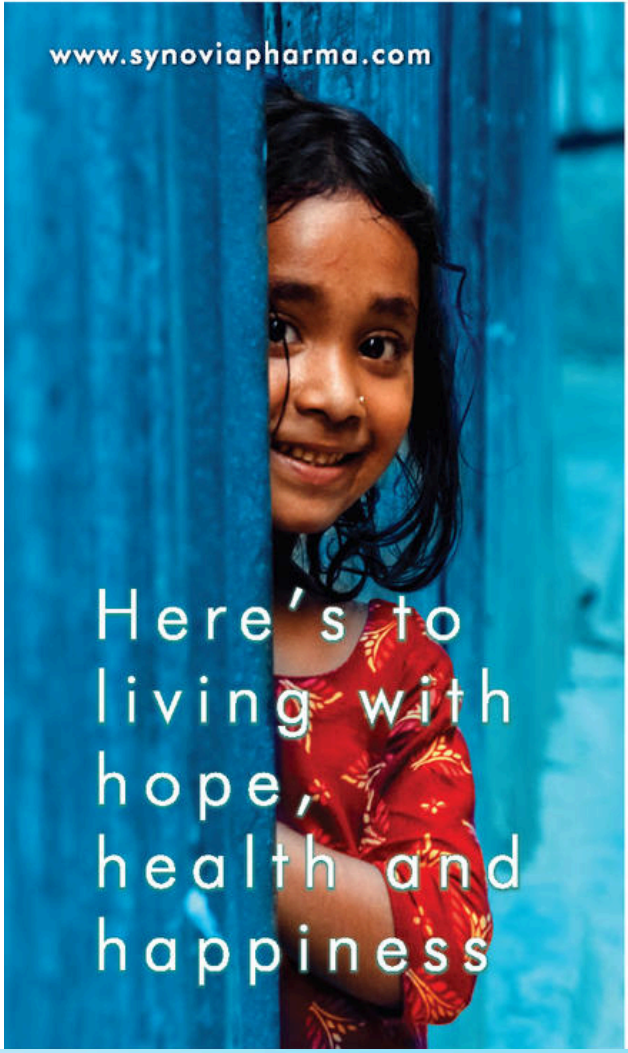
FOR THE DIGITAL VERSION



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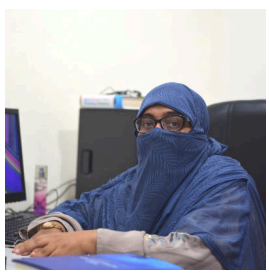

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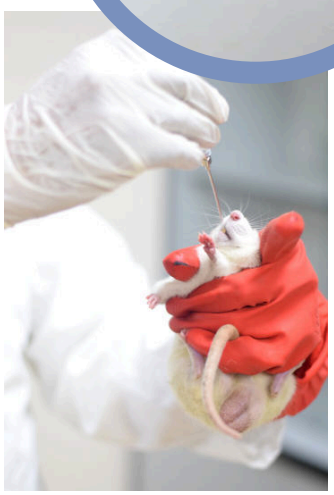

WELCOME TO THE CLUB!

The North South University Pharmaceuticals Club (NSUPC) is a platform which brings together students of all the batches currently studying in the Department of Pharmaceutical Sciences and our respected faculty members, providing a cordial atmosphere where creativity and talent of students are greatly encouraged and fully embraced.

The club, in close affiliation with the Department of Pharmaceutical Sciences, consists of respected executive and sub executive board members, and officers, working harmoniously with the guidance of the Faculty Advisor. Due to the hard work, dedication and efforts put forth each and every day for several years by the club members, the club continues to flourish and maintain its reputation as one of the most successful and respectable clubs NSU has to offer.

Club activities assist students in honing their skills and enriching their knowledge, both academic and general, by hosting many seminars and workshops. In addition to that, the club displays its expertise in planning and organizing through several events, namely Pharmafest, Annual Sports, Field Trips, etc. The club offers its very best and showcases their artistry in the much anticipated Pharmafest, taking place every year. All in all, NSUPC, in all their initiatives, aim to aid students in shaping and distinguishing themselves, allowing them to achieve new standards. Through their journeys in the club, students are able to create fond memories, cultivate a sense of unity and form deeper connections with people sharing similar interests.

NSUPC is not just a club but a place where students and faculty members are enticed to gather for all the fun activities and entertainment, where morale is lifted and the atmosphere is always friendly and cheerful.

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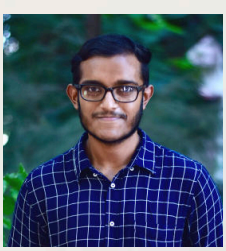
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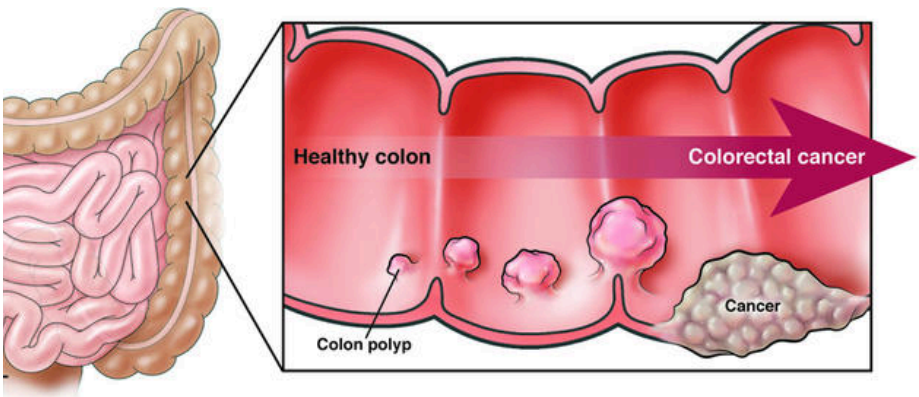
FACULTY ARTICLES

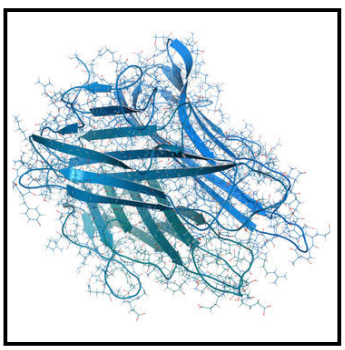
Md. Mazharul Islam Chowdhury, Ph.D.

Suppression of TNFα mRNA Expression by the Bioactive Protein Metabolite in Caco-2 Cells

Colorectal cancer (CRC) is the third most common cancer in both men and women in developed countries. The incidence of colorectal cancer is predicted to increase by more than 50% in men and 70% in women by 2030. There are several molecular and cellular pathways involved in colorectal carcinogenesis, and several genetic alterations have been identified that confer susceptibility to the development of colorectal cancer. Advances in understanding the molecular and cellular changes that lead to colorectal cancer have led to the development of new drug therapies for treating patients with colorectal cancer.

Increased expression of one of the inflammatory cytokines, tumor necrosis factor α (TNFα), is considered to be involved in the growth of colorectal cancer and has been shown to play an essential role in endorsing CRC invasion and metastasis. Microbiota-derived protein metabolites have been demonstrated to play a significant role in the development of colorectal cancer. On the other hand, few bioactive metabolites have been depicted to restrain colonic tumor growth in animal studies. However, to date, little work has been done to evaluate the effects of protein metabolites on the molecular mechanism of TNFα expression.





TNFα

My research focuses on controlling organ functions with the indole-3-acetic acid (IAA) synthesized by intestinal flora from tryptophan in dietary protein. Therefore, I performed the in-vitro studies to check the effects of indole-3-acetic acid on colorectal cancer cells (Caco-2). Caco-2 cells were plated and cultured on 35-mm dishes for 24 hrs with DMEM high glucose media supplemented with fetal bovine serum (FBS). After that, the medium was changed without FBS and the culture continued for 24 hrs. After 24 hrs of serum starvation, cells were treated with either DMSO or CH223191 (specific antagonist of AhR) or TAK-242 (specific antagonist of TLR4) for 1 hr and then incubated with DMSO or IAA for the next 48 hrs. The study was continued by changing the media every alternative day up to Day 8, considering the first antagonist application as Day 0 and medium. Sample dishes were collected on Day 2 and Day 8 for RNA extraction, and real-time PCR was done to quantify the gene expression of TNFα and CYP1A1. Results showed that IAA activates both AhR as well as TLR4 receptors and suppresses TNFα mRNA expression through TLR4 receptors, depending on the culture stages of Caco-2 cells. The outcome of this study also suggested the involvement of other receptors in regulating TNFα and mRNA expression by IAA.

This study demonstrates the advancements in our understanding of the molecular mechanism of IAA in regulating TNFα, and thus may offer new strategies for CRC management. However, further studies are required to explain the detailed mechanism of tryptophan-derivative IAA-induced TNFα mRNA expression regulation in Caco-2 cells.

Sabrin Islam Khan

Teachers During the Pandemic: Redefining Education

As we all know, the world has passed an incredibly challenging time for almost two years during the last Covid period. I still remember the day, 16th of March 2020, when the office sent us all home due to the worldwide pandemic. We received only one training about operating google classroom in the meantime. After about a month, NSU was the first to decide to start the online class. Initially, it felt unreal that students from Bangladesh would afford to join online classes, irrespective of where they were. I attended my first class with 100% student attendance, but it was filled with uncertainty about how it would actually work. I was personally a bit concerned about how to teach my students organic and physical chemistry online. After taking classes, I recall writing down reactions, reaction mechanisms, equation derivations and math on white paper, scanning and sending them onward. That was helpful a little in the beginning, but it did not bring complete satisfaction. This was the time most educators started exploring new techniques to address the emerging issues in everyday online teaching, and I was no exception.

Fortunately, we, husband and wife, are in the same profession, so together, we began exploiting effective options for better education; today, I will discuss a few. Installing and experimenting with available teaching apps helped us to get to know new techniques to teach. Note pens enabled us to write on the mobile screen just as a whiteboard. Later, the help of a Graphic Pad allowed us to write in a more advanced way online. During classes, we started highlighting books and PowerPoint notes and drawing figures on screens to clarify topics. It took significant time to get used to the online evaluation process and help students participate, but everyone got used to it eventually. As background sound was sometimes a problem, redecorating one room into an office room and placing an office desk, mobile holder, printer, and laptop helped us to get involved more dedicatedly in teaching. A good quality Bluetooth headphone that enhanced voice quality and nullified background sounds improved communication during classes. Joining classes from both laptop and mobile allowed us to highlight books and write on a pad simultaneously, ensuring immediate access to necessary media. These initiatives enhanced our digital skills, making lessons more understandable to students, and together, we could start developing a trustworthy system where we both felt satisfied and active at the end of the day.

It was still a challenge to keep students alert and enthusiastic throughout the online class. That is one limitation of virtual classes, which I better understood when I enrolled myself in a Quran Learning course as an online student. I realized how difficult it is to keep attention undivided when students join classes from home. This experience inspired me to make my lessons more interactive and get students more involved in class lessons and exercises. Although it's debatable how much we succeeded, the outcome was a lot more dependent on students' active participation, and it would vary from class to class. There is a lot to discuss about how online teaching has impacted the knowledge and skill of our students, but that can be addressed another day. What is important is that it was a different time, teachers and students were highly stressed, but they both tried to continue teaching and learning with a lot of patience, perseverance, motivation, and mutual cooperation, which is highly remarkable.

The future is uncertain, but I am grateful for what my past has taught me. I feel great that my teaching can now benefit any student from any corner of the country, even the world. I am active online and offline, most importantly without compromising my teaching quality. I believe today's online access towards education has enriched the world. NSU was the pioneer in bringing online education to reality in our country. Our teachers, with their hard work, effort and sincerity, had brought this institution to a new height. The support of our administration and IT department was tremendous. The use of CANVAS (an education technology company aimed to enhance the power of teaching) seemed difficult initially, but an organized arrangement of modules, assignments and files is tremendously benefitting our current traditional offline classes. Now we know that whatever the situation will be, there is always a way we can get moving, and we will stay connected anyway. Online classes have many limitations too, but I believe we can overcome these limitations only with improved digital skills and sincere student cooperation. Now, we all have lost our near and dear ones in this time, and many passed days with traumas and sicknesses, but we never stopped. I take this opportunity to thank all teachers today for their hard work and commitment. Days will pass, but the coming generations will proudly remember the leadership role of our teachers in keeping the knowledge flowing alive in the worst days the world has faced in hundreds of years.

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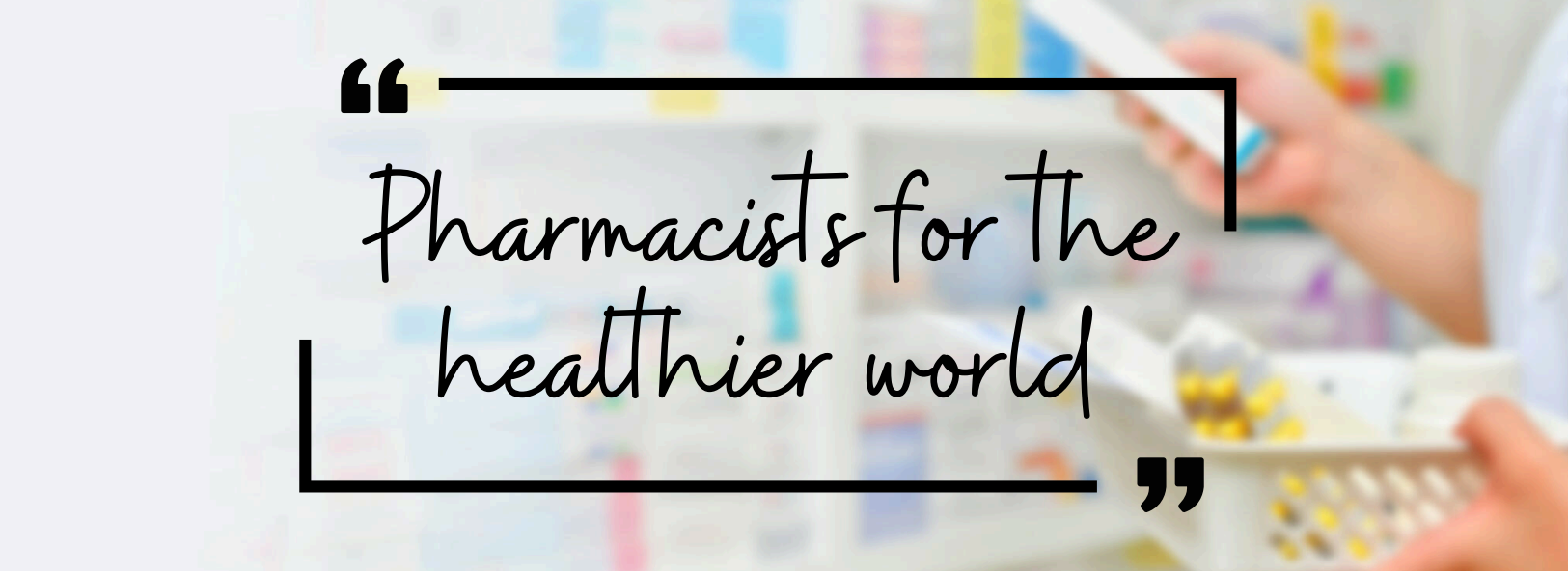

“Pharmacists for the healthier world”

The world has recently undergone a disaster of seismic proportions, as a virus too small to see by the naked eye wreaked havoc for years, claiming millions of lives. This unprecedented pandemic has been ruthless, looming over the efforts of medical professionals. This pandemic has also witnessed triumph, as COVID vaccines became the fastest vaccine to ever be developed, and the indispensability of the healthcare sector in curbing the damage done has become all the more prominent. As made obvious, the role of pharmacists for ameliorating the burden of a disease and their subsequent efforts to make the world heal is simply undeniable.

Awareness of safe medication use is instrumental to fighting any disease, and pharmacists have advocated for this constantly during the pandemic. Misinformation on use of medications and sharing a common prescription claiming to be applicable to all infected was predominant at the beginning of the pandemic, when people were increasingly agitated in a state of panic. The role of pharmacists in encouraging rational use of medication and unitedly working with healthcare professional and frontline workers enabled them to more efficiently tackle COVID cases.

Although made more evident during the course of the pandemic, pharmacists have been the unsung heroes of modern medicine for long. The magic pills that doctors prescribe are essentially the product of the pharmaceutical sector and their unwavering efforts. Essentially, pharmacists are employed at every stage of the healthcare system, from drug dispensing to patient counseling. Unfortunately, the integration of pharmacists at a few levels is not quite established in Bangladesh, making the talk of relaying the importance of pharmacists’ work more crucial.

While medication heals, medication can also kill. This seems rather contradictory at first glance, but those who have unfortunately fallen sick or even on a hospital bed due to adverse effects of medication are cognizant of this harsh truth. Pharmacists have years of knowledge on rational use of medication. The employment of pharmacists in sectors of patient counseling is therefore essential to save lives, and build up a healthier world aware of these prevailing issues.

It is an established fact that pharmacists are the backbone of the healthcare system, and without the provision of medication, the world would inevitably come to a standstill. Their efforts in developing new formulations, vaccine development, and exercising their knowledge for distinguishing patients based on their individual needs have directly uplifted the health of 7 billion people. They shall continue to be our protective heroes, working tirelessly to ensure a healthier world for all.

STUDENT ARTICLES

Sayema Salahuddin
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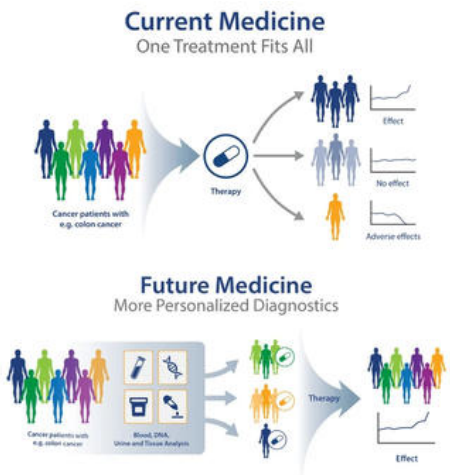
PERSONALISED MEDICINE - A STEP TOWARDS THE FUTURE

While the targeted action of medicines are predictable, various studies have accounted for thousands of unpredictable actions of medicines. In the early 1950s, patient's response to drug therapy was first observed to vary due to various factors such as age, lifestyle, environmental exposure, food habits, concurrent drug therapy and genetic variation. Approximately 0.1% of 3 billion bases of DNA differ from person to person and thus a patient's response to medications can also be altered by genes. This gives rise to a new era of scientific discipline called pharmacogenetics, which emerges from the convergence of pharmacology, genetics and biochemistry.

Personalized medicine (PM) is the latest field of applied research in pharmacogenetics, which quests for the molecular framework of drug response. It entails tailoring pharmacotherapy to each individual and ensuring its maximum safety and efficacy. PM will enable each and every patient to receive ideal treatments with close to zero side-effects and contraindications and eventually facilitate the improvement of the healthcare system.



The role of PM can be further demonstrated using the following example. Breast cancer requires multiple medications which possess various toxic effects. According to standard treatment guidelines (STG), doctors would prescribe a medication such as transtuzumab. However, no one really knows how an individual will react to a certain medication. There could be multiple terrible side effects or there can be none. The medicine might work and eradicate the cancer or it might not have any effect. This might cause the patient to visit the doctor countless number of times for dose adjustments or alternative drugs. This process of trial-and-error can lead to expensive hospitalizations, irreversible conditions or even death. PM will speed up the process and optimize the therapeutic plan. A simple blood test will show the patient's genetic profile, which can be utilized as a framework to design the best possible treatment plan for the patient.

PM can enhance the health care system by creating a profile of the patient's genetic variations, which can:

- guide the selection of the most optimum treatment plan.
- stipulate a patient's susceptibility to certain diseases long before they become affected, enabling the doctors to create a plan for monitoring and preventing the disease.
- enhance the market value of approved drugs with limited market share because of significant toxicity enabling doctors to identify and prescribe them to patients for whom they can be both effective and safe.

The evolution of PM is enabling the transition of emphasis in medicine from reaction to prevention and reducing the incidence of trial-and-error in prescribing. Some commonly prescribed drugs such as tamoxifen and warfarin consider pharmacogenomic testing as a pre-requisite to prevent adverse reactions. Though PM has demonstrated success for several conditions, the widespread benefits of PM for all should be studied further in order to establish it as a sustainable approach of providing pharmacotherapy to patients for optimum therapeutic outcome.

M M Shanjid Islam
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ANTIBIOTIC RESISTANCE BREAKERS

The discovery of antibiotics revolutionized the modern healthcare landscape, changed the therapeutic paradigm and by enabling significant medical interventions like surgeries, saved millions of lives. Unfortunately, the irrational use of these fundamental drugs is resulting in the emergence of antimicrobial resistance (AMR) which according to the World Health Organization (WHO), is one of the three most important public health threats of the 21st century and needs urgent attention.

There are four major mechanisms by which bacteria become resistant:

1. Increased drug efflux
2. Decreased uptake of drug
3. Modification or destruction of the drug
4. Mutation of the target site

To counter these mechanisms, an alternative strategy has been designed with the view to reduce the number of antibiotics used as well as to preserve the current antibiotics for the future. Antibiotic Resistance Breakers are chemical compounds that may or may not have direct antibacterial effect but can enhance the effectiveness of current antimicrobials by combatting the resistance mechanisms. The major classes of ARBs approved or currently under investigation include: -

Modifying Enzyme Inhibitors

β-lactamase inhibitors (BLIs)
These compounds work by inhibiting the β-lactamase enzyme produced by bacteria to break down the β-lactam rings present in β-lactam antibiotics such as Penicillin and Cephalosporins. Some widely used β-lactamase inhibitors are clavulanic acid, sulbactam, tazobactam, brobactum etc.
A novel penicillanic acid sulfone named AAI101 is being developed as a combination therapy with Cefepime by Allecra Therapeutics.
Metallo-beta-lactamase (MBL) is another growing antimicrobial resistance threat, rendering many β-lactam antibiotics including last resort antibiotics like carbapenem, ineffective. Potential MBL inhibitors like aspergillomarasmine A and the maleic acid derivative ME1071 are under development too.

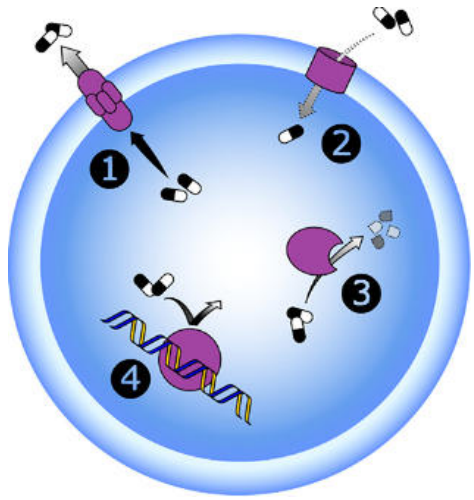

Figure: Mechanisms of Antimicrobial resistance

Aminoglycoside-modifying enzyme inhibitors
There are mainly three groups of aminoglycoside-modifying enzymes: aminoglycoside acetyltransferase (AAC), aminoglycoside nucleotidyltransferase and aminoglycoside phosphotransferase (APH). Several promising inhibitors of these enzymes are under development which include pyrazolopyrimidine compounds, bisubstrate analogues, bovine peptide indolicidin and its analogues.

Membrane Permeabilizers

Polymyxins and its derivatives
These compounds function by disrupting the outer membrane of Gram-negative bacteria.
Examples of such compounds currently under development include: Polymyxin B1, Polymyxin B2, Colistin A, Colistin B etc.

Efflux Pump Inhibitors

Bacterial efflux pumps are one kind of nano machine that pumps the antibiotic molecules out of the bacterial cells. Major classes of efflux pump inhibitors currently under investigation includes: Catechin gallates (obtained from green tea extracts), abietane diterpenes (isolated from Rosemary plant), methoxylated flavones (isolated from garden thyme), heterocyclic macrocycles (extracted from barberry), etc.

Antibiotic Resistance Breakers represent a promising avenue of research to counter the global health concern of antimicrobial resistance.

Alex Delson Boiragi
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“The new treatment derived from a banana protein works on all COVID variants”

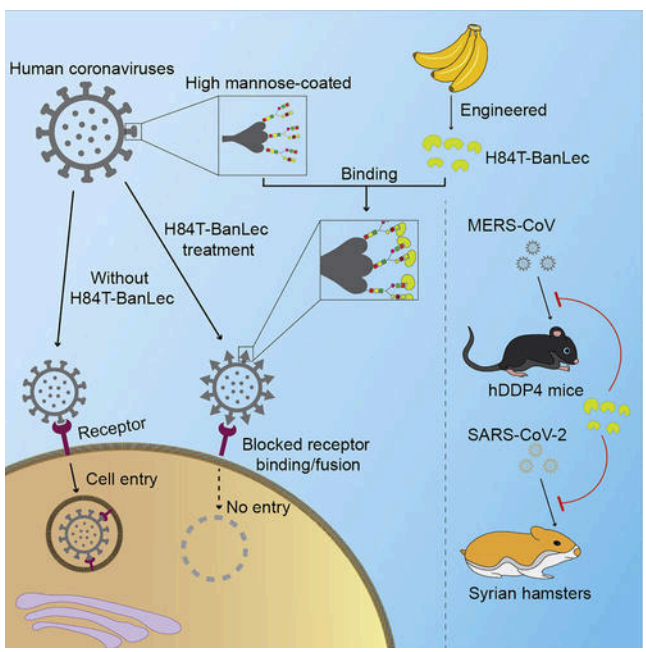
Coronavirus is a family of viruses that causes an infection in your nose, sinuses, or upper throat. The virus can cause pneumonia, respiratory failure, heart problems, liver disorders, and even septic shock and mortality. By October 22, 2022, the COVID-19 pandemic had resulted in the deaths of around 6.5 million people. Because of this, the World Health Organization (WHO) and researchers are collaborating closely with international authorities, nations, and partners to quickly advance scientific understanding of this novel virus.

There is potential for a novel coronavirus medication thanks to a ground-breaking new treatment made from banana protein. The substance "H84T-BanLec" is derived from lectins, which are proteins that bind to carbohydrates and were identified from banana fruit. It is effective against all coronaviruses and influenza strains. Prior to the pandemic, it was created to treat influenza, but it also worked on COVID-19.

H84T-BanLec is effective against all known human coronaviruses, including MERS, the original SARS, and SARS-CoV2, including the omicron form, according to a study published in Cell Reports Medicine. It binds to high-mannose glycans, polysaccharides that are typically found on the surface of viruses but very infrequently on healthy human cells, to achieve its amazing virus-blocking powers. Once bound, the virus is unable to infect cells. It was established through the use of atomic force microscopy and related techniques that H84T forms a number of robust bonds with the spike protein, which most certainly explains why the coronavirus is so hard to resist chitin.

Remdesivir, monoclonal antibodies, and also Paxlovid are only a few of the COVID-19 therapies that are currently available. However, many of these treatments have shown to be less successful due to their variable degrees of efficacy and adverse effects. The researchers believe that H84T-BanLec has a particularly promising future because it has no adverse effects in animal studies and is effective against all varieties of coronaviruses as well as influenza viruses.

The most challenging stage for the treatment, from an animal model to human testing, is what researchers are hoping to witness. In order to prevent or treat coronavirus and influenza infections during seasonal and epidemic circumstances, researchers are developing nasal sprays or drops. Since cancer cells have a large proportion of mannose glycans on their surfaces, similar to viruses, researchers also intend to investigate the potential of H84T-BanLec against cancer.



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POSTPARTUM DEPRESSION

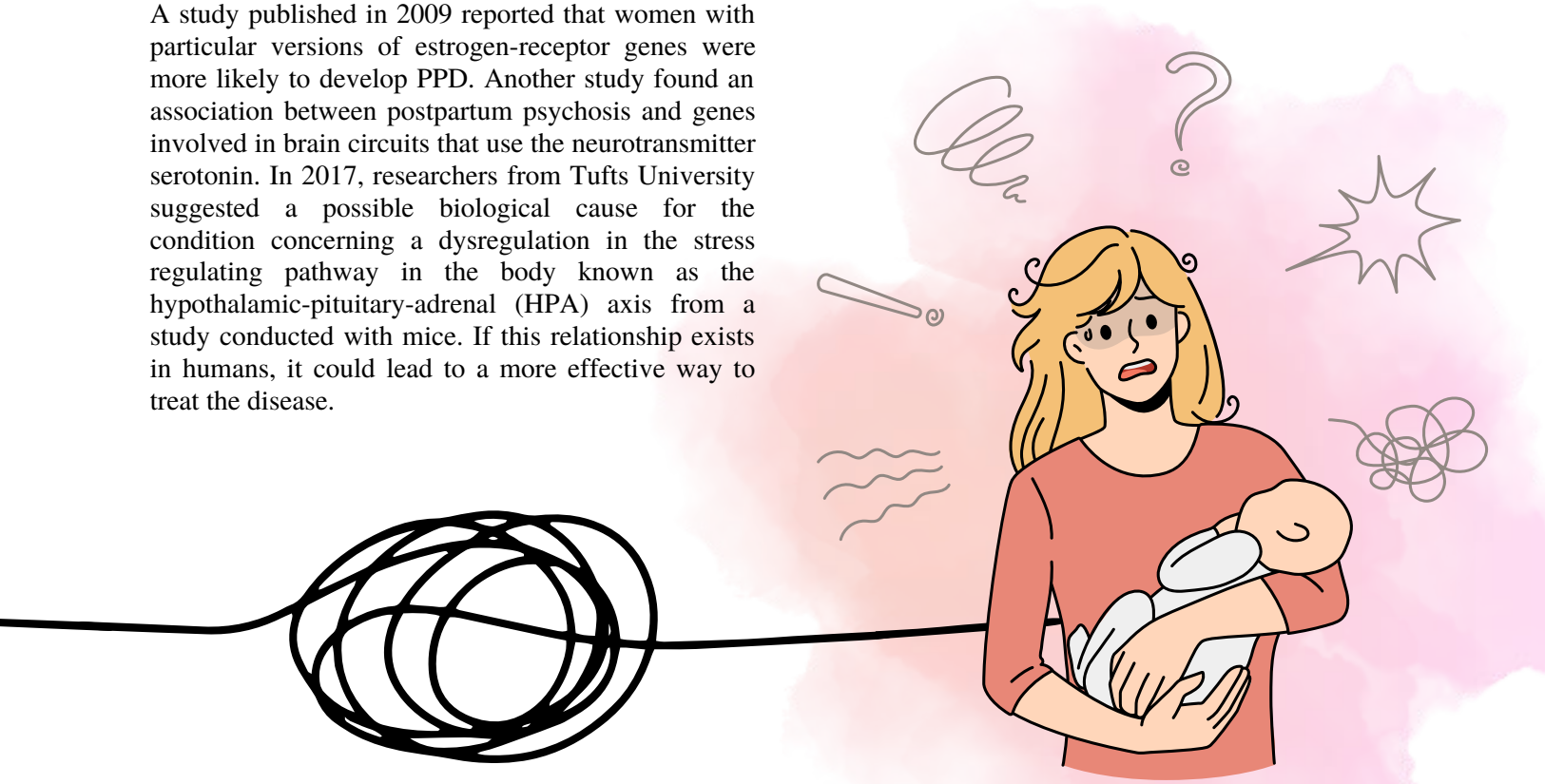
Having a baby often takes the mother on an emotional roller coaster ride. Thrilling moments of happiness are overshadowed by exhaustion, anxiety, anger, and sadness. Postpartum depression (PPD) is what they call it. It is a devastating condition affecting somewhere between 11-20 percent of women who have given birth. These women are almost always oblivious to their condition, and many do not receive a clinical diagnosis.

After childbirth, hormone levels in the body fall rapidly, bringing about chemical changes in the brain and triggering mood swings. In addition, many mothers are constantly sleep deprived, contributing to the symptoms of PPD. It can worsen into feelings of worthlessness, an inability to bond with the baby, and even suicidal thoughts.

Despite the growing incidence of this problem, there has been very little interest in solving it until recently. A study published in 2009 reported that women with particular versions of estrogen-receptor genes were more likely to develop PPD. Another study found an association between postpartum psychosis and genes involved in brain circuits that use the neurotransmitter serotonin. In 2017, researchers from Tufts University suggested a possible biological cause for the condition concerning a dysregulation in the stress regulating pathway in the body known as the hypothalamic-pituitary-adrenal (HPA) axis from a study conducted with mice. If this relationship exists in humans, it could lead to a more effective way to treat the disease.

In 2019, a drug was finally approved specifically for PPD, but not without a price. Brexanolone, sold under the drug name Zulresso, is marketed at $34,000 and is administered as a continuous IV infusion over a total of 60 hours. Another drug, Zuranolone, which is currently in development, shows promising phase 3 results. Both drugs target GABA receptors in the brain. These new treatment options may be a sign of change in the pharmaceutical industry's attitude towards women's postpartum mental health, which has long been ignored.

Now we know how important it is to be considerate towards new mothers. As soon as she delivers a child, we stop recognizing her as a separate human being. She hardly gets her space and freedom, and thus suffers silently trying to regain her old self. What we forget to realize is that sometimes a mother too needs some 'me' time. So help her in some way so she feels like she's not alone. Let her breathe, let her live.



Oyshi Chowdhury
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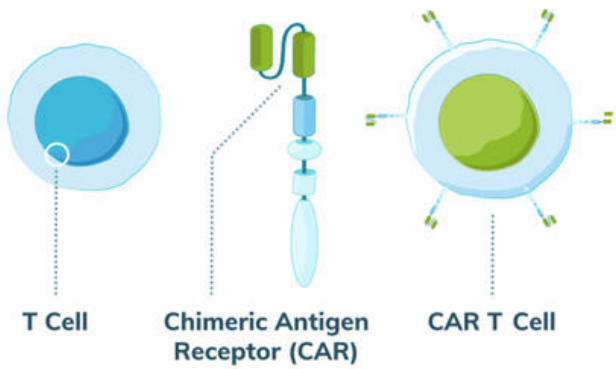
CAR T-CELL THERAPY: NEW HOPE FOR CANCER TREATMENT

"You have Cancer"- This simple phrase is enough to rob you of your peace of mind in mere seconds. The first thing that comes to mind at that moment is 'the fear of *death*'. Secondly, the last hope to live, which might end up with the painful chemotherapy, surgery, and radiotherapy. Although these remain as important therapeutic pillars, a new type of therapy has recently contributed to a change in the way cancer patients are being treated.



Chimeric antigen receptor (CAR) T-cell therapy is a complex yet possible way that has become a new hope for cancer patients. This therapy includes cell engineering. The immune cells of the patient's body, namely 'T Cells' can be changed in the lab so that it can attack the cancer cells. Basically, it is a cell-based gene therapy, where the genes of the T cells are altered and so the cells can recognize cancer.

At first, Leukapheresis procedure is done where the patient's white blood cells are removed from the whole circulatory system. The procedure reuires two IV lines where, from one line the blood is taken out to separate WBC and with another line, blood is given into the patient's body. The T cells are then altered, by adding the gene for specific chimeric antigen receptor (CAR) into them.

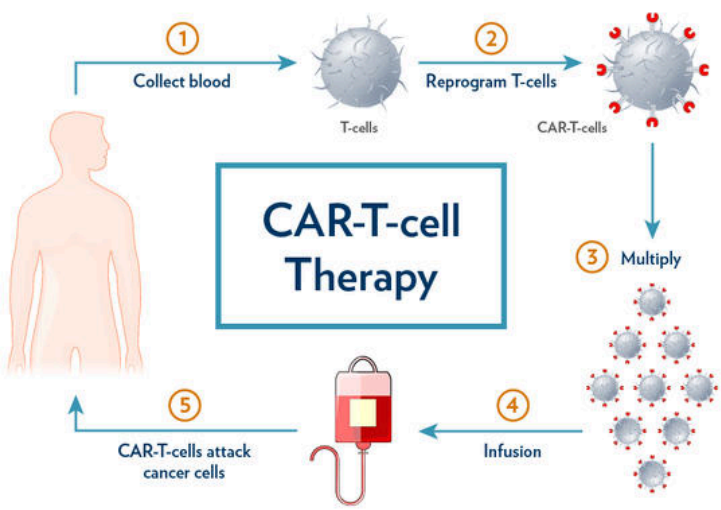
Finally, these CAR cells are grown and multiplied in the lab. As soon as the sufficient amount of CAR T cells are made, they are given back into the patient's body. Physicians suggest chemotherapy to keep the immune cells low in number, so that there ae still plenty of cancer cells present to fight back. Therefore, the CAR T-cells activate and attack the cancer. Whenever CAR T-cells are attached to cancer cells, their population grows. So, they can help eradicate more and more cancer cells.

Good news: FDA has approved CAR T-cell therapies for several types of leukemia, multiple myeloma and lymphoma. It is used after trying other types of treatments.

Some FDA approved CAR T-cell therapies:

- **Tisagenlecleucel:** For Leukemia
- **Axicabtagene ciloleucel:** For B-cell Lymphoma
- **Lisocabtagene maraleucel:** For B-cell Lymphoma
- **Idecabtagene vicleucel:** For multiple myeloma

Nevertheless, we have ongoing studies and we need more and more researches to reach the highest potential to treat other types of cancer as well.



Tanjina Jahan
1811709049

GENE THERAPY AS TREATMENT FOR OSTEOARTHITIS FOR WOMEN IN BANGLADESH

Osteoarthritis (OA) is a degenerative disorder in which articular cartilage degenerates due to trauma or old age, causing pain and lack of joint function. The disease prevails in women over 50, affecting postmenopausal women significantly more than men.
Most popular management of the disease include physiotherapy, pain management (pharmacological therapy with topical analgesics) and Joint Replacement Surgery (JRS). No cure is yet in the market. This article will discuss the need of further exploration for the cure for OA in Bangladeshi women, gene therapy as the possible cure, and its implications using viral and non-viral vectors.

Prevalence and risk in Bangladeshi Women

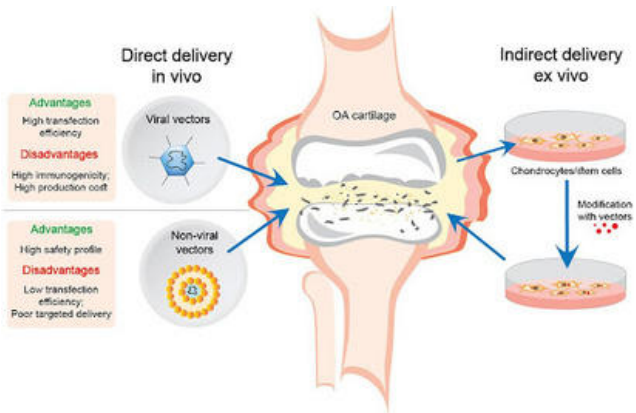
In 2021, World Bank published reports of women involvement in labor to be more than 30%. If the wage-earning women are counted, there still remains countless home makers of both urban and rural areas that stand at risk of developing arthritis after sixty from daily lifestyle. Given also that arthritis leads to inactivity which may lead speedily to diabetes, hypertension and cancer, it poses as a significant burden on the population.

Gene therapy of Osteoarthritis

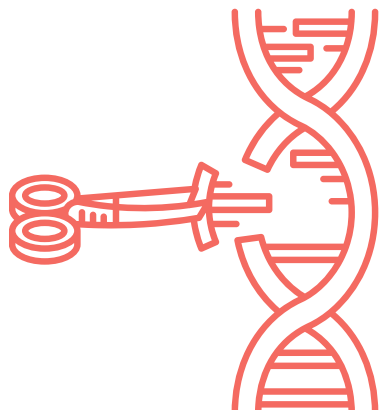
With the centuric leaps in medicine, gene therapy is a possible cure for diseases such as OA. Nearly 70 years ago, Nirenberg and co revealed that the nucleus contains both explanation and solution to all the changes of our body. If we trace OA back to the motherland of data (aka DNA), we find that more than 26 genes are associated with OA since the first connection investigated in 1941 (Stechner). Current research seeks to conclude whether delivery of genes required for the regeneration of the articular membrane into the joint can reverse the damage.

Complications; Use of Viral and Non-viral vectors in Gene Therapy

The delivery of the nucleotides may be viral (efficient) or non-viral (preferred to lessen risk of infection). The usual adenoviruses, herpes simplex viruses, and retroviruses are considered unsafe for direct delivery into the system. However, lipid-based systems and DNA-conjugates do not show the same efficiency of gene transference into articular chondrocytes.



To avoid direct delivery, cells collected from the synovial joint may be cultured with the loaded vector in vitro, and the cultured cells redeposited in the joint again. Increasing efficiency of gene transfer while lowering risk of possible viral infection, the ex vivo method is a safer alternative.
Though therapy with mesenchymal and pluripotent stem cells have in the past produced disappointing results, viral/non-viral methods may supply the required growth or transcription factors for differentiation into chondrocytes.
Larger and more detailed studies are required of the manifestation of OA in this population including bioinformatic and biostatistical data according to biodiversity and therapy specificity.



Sajidul Hoque
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ANTHRAX ATTACK - A TALE OF BIOTERRORISM

Bacillus anthracis, the bacteria that causes Anthrax, would be one of the deadly biological weapons most likely to be utilized in a bioterrorist strike. Biological agents are microorganisms that can infect or kill humans, animals, or crops.

Historical Perspective

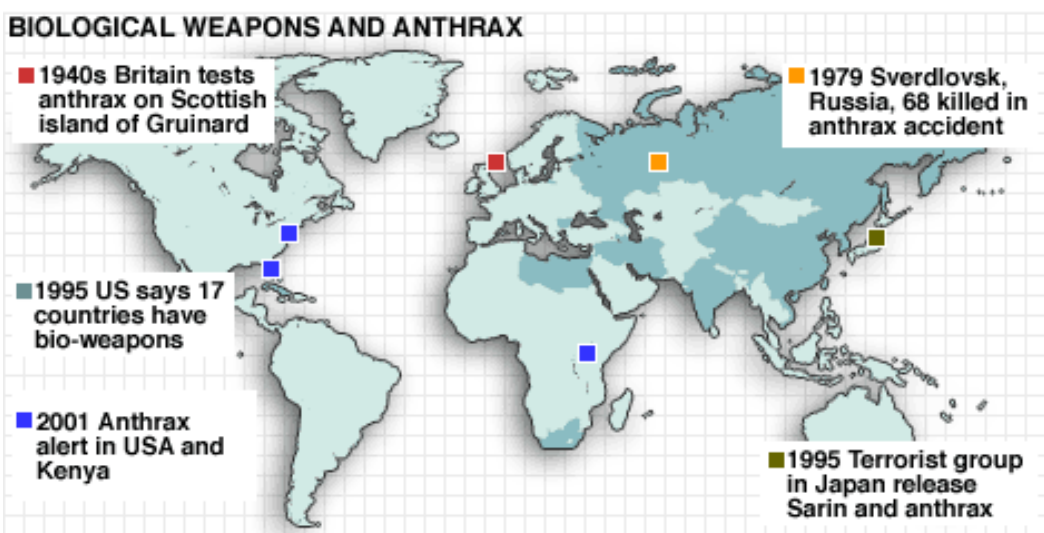
- First World War: There is confirmation that the German military employed anthrax to covertly contaminate livestock and animal feed that was supplied to the Allies by neutral parties. The infection of Argentinian animals meant for exchange with the allies in 1917 and 1918, which led to the death of 200 mules, is an illustration of this covert biological warfare.

- On Gruinard Island, Great Britain dropped anthrax bombs on 80 sheep to test the spread of the disease. The island was soaked in a solution of formaldehyde and seawater for a year before being deemed clean.

- A strange anthrax outbreak was reported in the Soviet city of Sverdlovsk in April and May of 1979. But it wasn't until the beginning of 1980 that news of this pandemic started to appear in Western media.

- Anthrax inhalation case reported in the US was in 1976, before 2001. Two U.S. Senators' offices and news organizations received envelopes containing a white powder containing anthrax spores following the 9/11 attacks.

There are new engineered strains that may be found in the underground lab of the world's superpowers. Anthrax spores are readily available in nature, may be created in a laboratory, and have a long shelf life. Given its ability to be quietly and covertly released, anthrax constitutes a potent weapon. The tiny spore could be added to foods, drinks, powders, and sprays. After contracting the virus, symptoms might start anywhere from a day to more than two months later. The skin form initially appears as a little blister with surrounding edema, which frequently develops into an ulcer with no pain and a black center. Shortness of breath, a fever, and chest pain are symptoms of the inhalation variant. In 1954, the anthrax vaccination for humans became accessible. Antibiotics and perhaps antitoxins are used to treat infections. To address the serious threat to public health and safety, it is named a Tier 1 BIOLOGICAL AGENT. The future of bio-terrorism can be greatly influenced by this type of easy-to-create devastating microorganism. It is a potential issue that may have devastating outcomes, and must thus be addressed.



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STRESS AS A TRIGGER FOR ALZHEIMER'S DISEASE

The fact that stress increases the likelihood of Alzheimer's disease may seem far-fetched to many of us, but new and past studies have shown that it is plausible. However, stress in itself is not bad, no matter how many times we might have heard our physicians advise us to stop 'stressing'. That is because the stress mechanism allows our body to respond to any dangerous situation and helps us to overcome it.

Nevertheless, growing evidence have begun to emerge that chronic stress and other related disorders like PTSD may cause dementia. One 35-year long longitudinal study showed that women who experienced psychological stress during their mid-life had higher chances of developing Alzheimer's disease later on in life. A similar study carried out on elderly clergy participants showed that people who experienced distress earlier in their lifetime were at risk of developing Alzheimer's disease and were observed to experience a ten-fold decrease in episodic memory.

It should be noted that there are several mechanisms by which chronic stress could be a risk factor. One mechanism is through the hypothalamus-pituitary-adrenal axis (HPA), whereby stress sets off a signal in the hypothalamus that in turn activates the anterior pituitary gland and adrenal cortex to release cortisol which controls cognitive and immune functions. Dysregulation of the HPA axis and increased cortisol have been linked with increased progression of Alzheimer's disease.

Furthermore, the underlying mechanisms by which increased level of cortisol may worsen Alzheimer's disease is vast. Animal rodent studies have shown that increased cortisol could directly increase accumulation of amyloid β and tau which are the hallmark features of Alzheimer's disease. Not to mention, increased cortisol level is also connected with hippocampal atrophy and synaptic deficits. Finally, it can increase neuro-inflammation through increased activity of microglia and subsequent production of cytokines, all of which leads to decline in cognitive function and Alzheimer's disease.

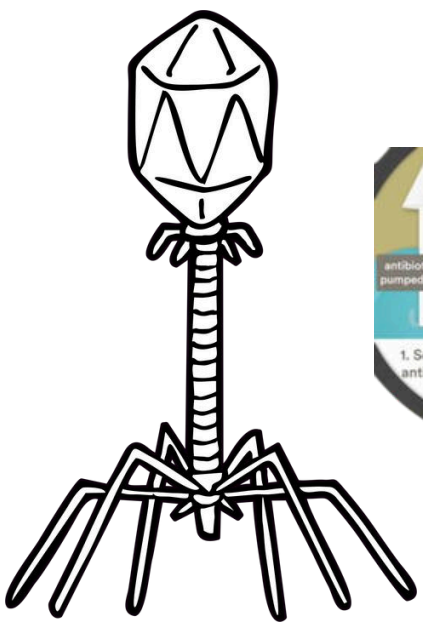
In conclusion, it should be mentioned that stress does not always lead to AD but may be one of the factors out of many that could determine whether AD symptoms will appear earlier or later, as noted by Dr. Irina Skyler-Scott, a clinical assistant professor of neurological sciences at Stanford University. However, as the saying goes 'Prevention is better than cure' meaning it would be wise to try and remain stress free as much as possible to help improve our chances against Alzheimer's disease.

Ahmmed Zunaed Rahman
1811871049

BACTERIOPHAGES IN ANTIMICROBIAL THERAPY AND VACCINE DEVELOPMENT

The prevalence of microorganisms that are resistant to antibiotics is correlated with higher mortality, morbidity, and health care expenses globally. Antibiotic resistance is one of the biggest threats to public health and global development according to the World Health Organization (Geneva, Switzerland). In order to accelerate the development of new treatments to combat resistant bacteria, WHO has revealed a global list of antibiotic-resistant microorganisms. This analysis shows that 60% of pathogenic bacteria have become resistant to most widely used antibiotics including carbapenems and third-generation cephalosporins.

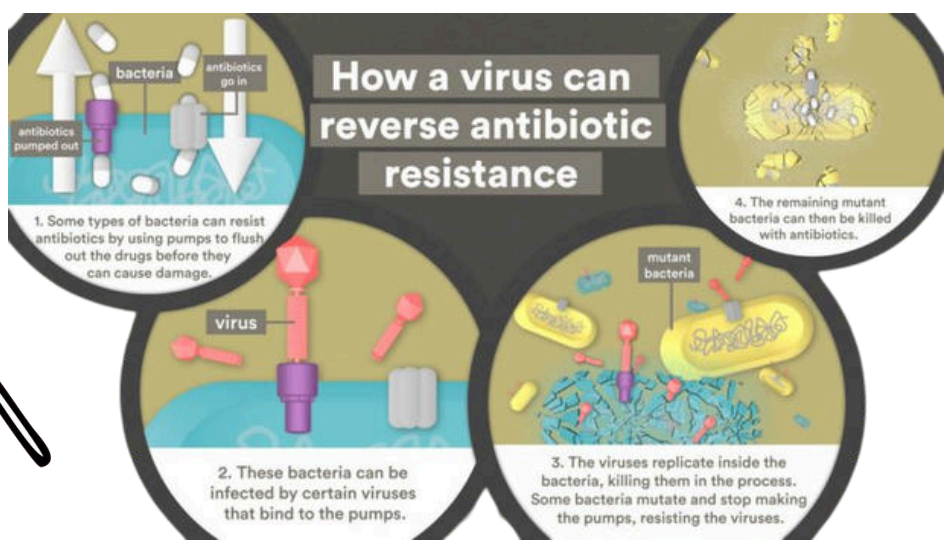
In this situation, it is necessary to introduce an alternative solution. Phage therapy can provide an alternative solution to the growing resistance of bacteria to antibiotics. This antibacterial technology has been known for 100 years and can be useful in treating infections related to film formation as well as against spore formers. Phage therapy is mainly based on lytic phages which obligately kill their bacterial host. Sometimes, this therapy can combine phages and antibiotics. Recent research also suggests that some people may benefit from personalized phage therapy for treating a range of resistant bacterial infections.



Furthermore, Phage vaccines can be a useful alternative to conventional vaccinations, as they are chemically stable, easy to store and transport, and inexpensive to create on a large scale. Phage vaccines have unique biological properties that make them ideal for the prevention and treatment of various bacterial strains (including those resistant to antibiotics), viruses, fungi, and parasites and also for battling cancer.

There are three basic types of phage vaccines: hybrid vaccines, phage-displayed vaccinations, and phage DNA vaccines. The eukaryotic expression cassette and a vaccine gene that encodes an antigen or mimics an epitope are incorporated into the phage genome to create phage DNA vaccines. Recombinant phages that exhibit antigenic peptides or proteins on their surface as a result of genetic fusion with phage coat proteins are what phage-displayed vaccines are made of. Phage-displayed vaccines and phage DNA vaccines, the first two forms of phage vaccines, are combined to create hybrid vaccines, the third type of phage vaccine.

In conclusion, Scientists and medical professionals are currently very interested in phage therapy, particularly as a result of successful attempts to treat patients for whom conventional antibiotic therapy has failed. Additionally, the applied therapy has no side effects and has no negative effects on the host's commensal (health-protecting) microflora.



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Photography

These pictures were taken on the travels of our honorable faculty
Dr. Shaki Mostaid
Assistant Professor
Department of Pharmaceutical Sciences

A Lone Lighthouse

The Sumatran Tiger, Indonesia

Beauty of Bangladesh; St. Martin's Island

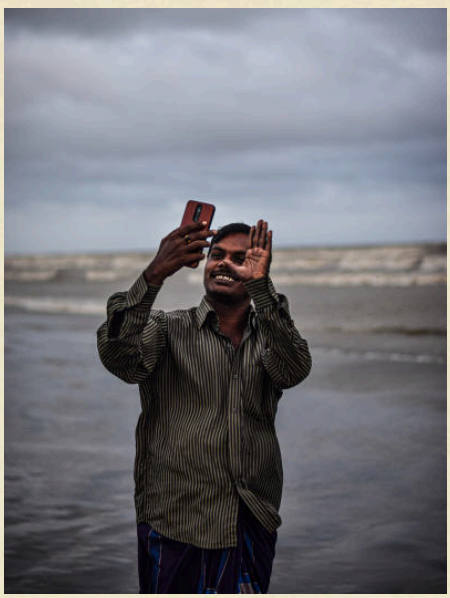
The Port of Melbourne

Sydney Fireworks Show

Amsterdam Canal Houses

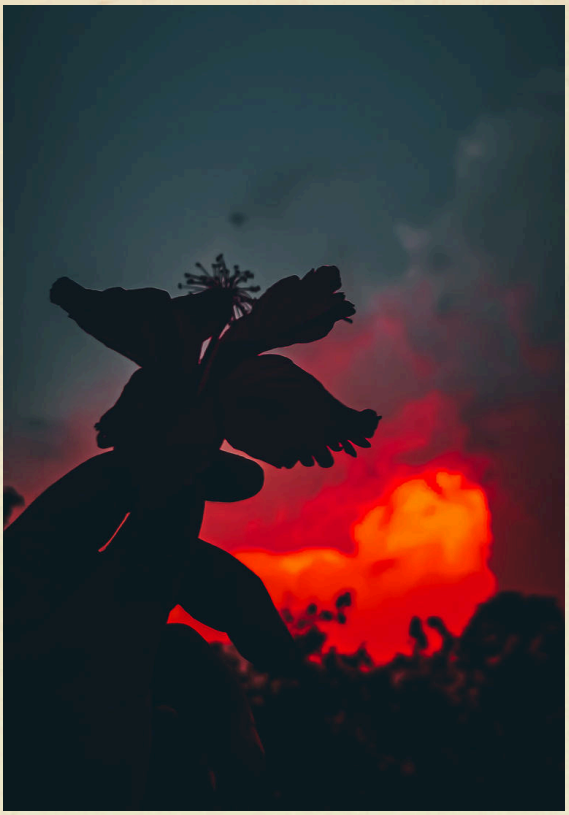
Photos taken by students of our department

Mesmerized by the magic of Mohamaya Lake.
by Kaniz Fatema Mitu

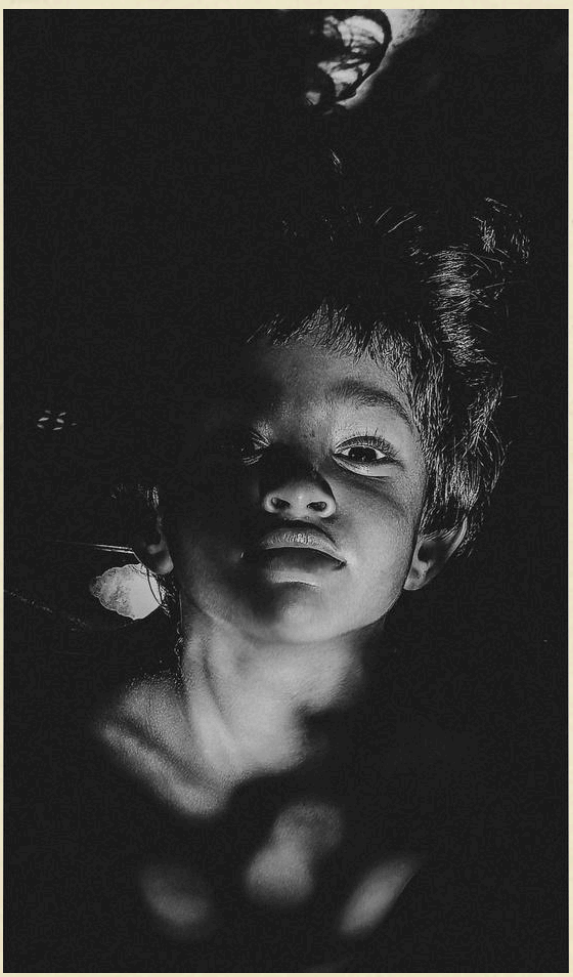


A smile is only a call away.
by Safayet Haque Sadbin

A mirror of water.
by Md. Sagar Mia



"I brought you the last flower of the day".
by Mehedi Hasan Swapnil



A summer of remembrance
by Mehedi Hasan Swapnil

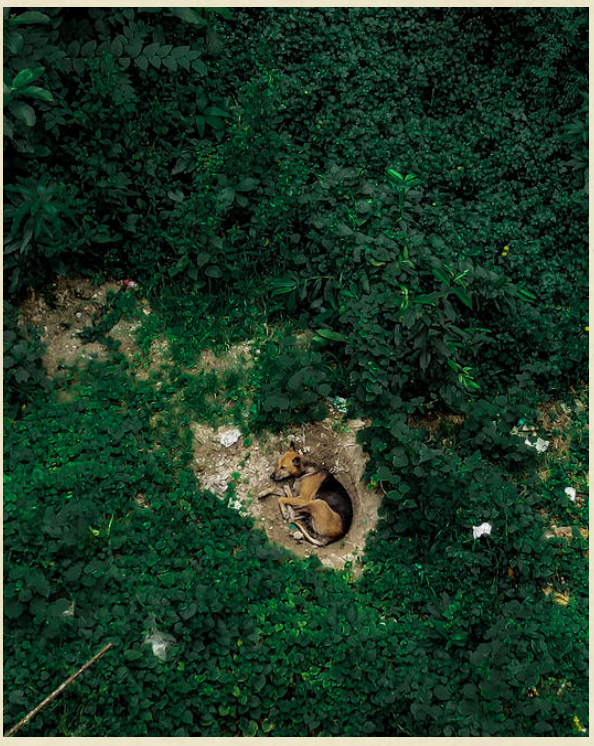
Silhouettes against the red sky.
by Abdullah Al Abir

The sand, the sea,
and the lone crow.
by Md. Sagar Mia

There's still a few remnants
of magic left in the world.
by Suplob Mandal

A token of love.
by Mehedi Hasan Swapnil

Peace lies within you.
by Kaniz Fatima Mitu



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PHARMA WORDLE

The grid below has eight words consisting of eight letters each. Each **ROW** has one **WORD** with its letters **REARRANGED**. Your challenge is to find all eight words, using the hints and the colour key below!

O	N	E	D	I	T	T	A
E	E	D	P	I	M	C	N
M	A	R	H	O	N	P	E
F	A	Q	E	E	I	E	N
W	N	R	A	R	A	I	T
N	O	R	X	N	D	E	A
P	N	F	I	R	A	M	C
T	H	A	Y	M	R	P	C

GREEN- The correct letter in the right place

GRAY- This letter is not in the word (just here to mislead you!)

HINTS:

1. You would need this if your enemies poisoned you
2. Any drug that is used to treat disease
3. Named after the Greek god of dreams
4. This common compound helps paracetamol work better
5. An anticoagulant fit for war
6. A long-acting NSAID
7. An antibiotic used to treat tuberculosis
8. The science behind medications. (The reason you are solving this right now!)

ANSWER:

Y	C	A	M	R	A	H	P
N	I	P	M	A	F	I	R
N	E	X	O	R	A	P	N
N	I	R	A	F	R	A	W
E	N	I	E	F	F	A	C
E	N	I	H	P	R	O	M
E	N	I	C	I	D	E	M
E	T	O	D	I	T	N	A

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Dr. Hasan Mahmud Reza
Dean of School of Health and Life Sciences

Journal published in the BMJ with an impact factor of 93.33!

“Why are vaccination rates lower in low and middle income countries, and what can we do about it? ” is a research that was conducted by **Dr. Hasan Mahmud Reza**, Dean of School of Health and Life Sciences. The research paper was published in the prestigious journal, The BMJ, which has a massive Impact Factor of 93.33. The paper's focus was to understand why vaccination rates are lower in low and middle income countries and what may be the possible solutions to it. Other authors of the paper were Vaishnavi Agarwal, Farhana Sultana, Razmin Bari and Ahmed Mushfiq Mobarak.

"Hasan Mahmud Reza and colleagues argue that access to vaccines enabled by predictable supply of vaccine doses and delivery to remote areas are critical for vaccine uptake in low and middle income countries"

"BMJ started out 180 years ago as a medical journal, publishing articles on stillborn children, amputation at the shoulder and the climate of the Isle of Wight. Their expertise extends from publishing and medical education to clinical decision support and events to enhance day to day decision-making and healthcare delivery." (https://www.bmj.com/company/our-journals/)

NSU BEST RESEARCHER 2021

Dr. Hasan Mahmud Reza, Dean of School of Health and Life Sciences and **Dr. Md. Ashraful Alam**, Associate Professor of Department of Pharmaceutical Sciences received the prestigious award "Best Researcher 2021" by NSU for outstanding performance in research.

MERCK PUBLICATION AWARD BANGLADESH

Honorable Dean of SHLS, **Dr. Hasan Mahmud Reza**, was an esteemed member of the Judging Panel.

Dr. Md. Mahbubur Rahman, Associate Professor of Department of Pharmaceutical Sciences, NSU, was the winner of Bangladesh MERCK Life Science Publication Award 2021.

Dr. Shazid Md. Sharker, Associate Professor of Department of Pharmaceutical Sciences, North South University placed the 2nd runner up.

Dr. Mohammad Hossain Shariare, Professor of Department of Pharmaceutical Sciences, placed the 4th runner up of Bangladesh MERCK Life Science Publication Award 2021.

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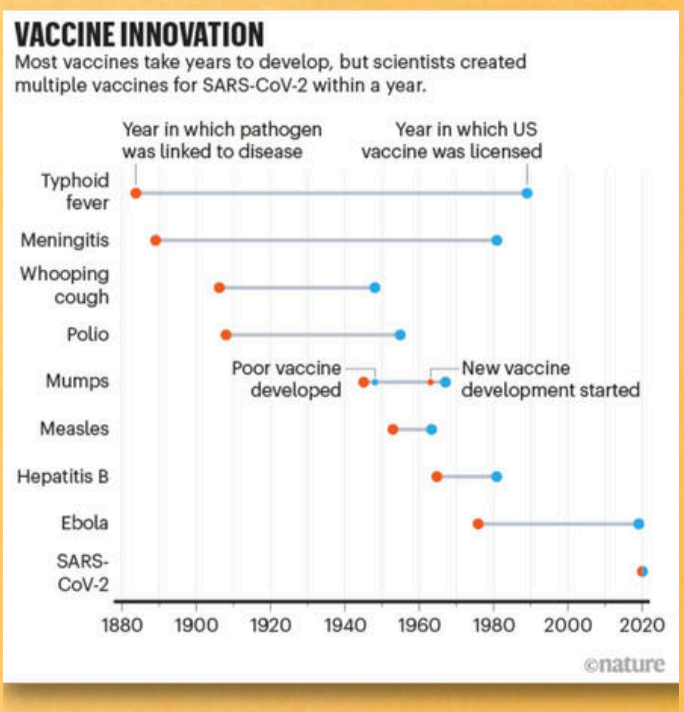


This infographics was taken from Springer Nature

Research conducted by our department on COVID

Dr. Hasan Mahmud Reza, Professor and Dean of SHLS

- "Impact of community masking on COVID-19: a cluster-randomized trial in Bangladesh"
- "Willingness to vaccinate against COVID-19 among Bangladeshi adults: Understanding the strategies to optimize vaccination coverage"

Dr. Mohammad Hossain Shariare, Professor

"The growing complexity of COVID-19 drug and vaccine candidates: challenges and critical transitions"

Dr. Md. Nurul Islam, Associate Professor

"Progression of Disease in COVID-19 Patients Evaluated by Chest CT Imaging and Correlated with Clinical Parameters"

MYTH BUSTED!

Myth: mRNA vaccine will incorporate into human DNA

Fact: The mRNA vaccine technology has been in use for decades and does not change your DNA in any way!

THE 2ND INTERNATIONAL CONFERENCE ON GENOMICS, NANOTECH & BIOENGINEERING 2022

ICGNB 2022

The 2nd International Conference on Genomics, Nanotech & Bioengineering (ICGNB) held at the premises of North South University (NSU) showcased a vast array of scientific research studies, all pertaining to advances in currently booming scientific fields. The 3-day long conference featured exemplary presentations by scientists from all over the world, including the United States, United Kingdom, Japan, Germany, Korea, Sweden, and Netherlands, among others. Starting off with great momentum in the Opening Ceremony on 26th June 2022, the Conference had a successful culmination on 28th June 2022.

The Opening Ceremony held on Day 1 of the event included an enlightening speech by Dr. Firdausi Qadri, Senior Scientist, International Center for Diarrheal Disease Research, Bangladesh (icddr,b). Plenary Speaker, Dr. Rita R. Colwell, Distinguished University Professor at the University of Maryland at College Park USA, spoke regarding the cholera epidemic, focusing on her research work spanning three decades. The second day of ICGNB witnessed participants of poster presentations from well-reputed educational institutions from every corner of the country, including NSU, University of Dhaka, Sharjalal University of Science and Technology and many others. The sessions included presentations of research work on the topic of Genetics & Genomics, Public Health & Epidemiology, and 7 others sectors. Many foreign dignitaries were present in the informative sessions, including Dr. Nasser B Alsaleh from King Saud University; Dr. Masashi Kawaichi, Professor at Nara Institute of Science and Technology (NAIST), Japan, amongst others.

The Closing Ceremony was graced with the presence of venerable Chief Guest, Professor Dr. ABM Abdullah, Personal Physician to Honorable Prime Minister & UGC Officer, BSMMU. The most intriguing topics presented during the Poster Presentation Session were awarded. Professor Dr. Hasan Mahmud Reza, Chair of ICGNB 2022 Organizing Committee declared the end of this edifying conference.

IMPORTANT EVENTS

CERVICAL CANCER AWARENESS SEMINAR

A seminar on “Cervical Cancer Awareness” was conducted on 2nd October, 2022 organised by NSU Model Pharmacy, sponsored by Incepta Pharmaceuticals Ltd. & Incepta Vaccine Ltd. Dr. G. M. Sayedur Rahman, Chair and Professor of the Department of Pharmaceutical Sciences shared his welcome speech. Dr. Nafisa Amin Khan, Associate Professor of Shahid Mansur Ali Medical College provided a comprehensive overview on cervical cancer and its prevention. ‘Papilovax’, a vaccine for cervical cancer, developed by Incepta vaccines Ltd. will aid in eliminating cervical cancer in Bangladesh. Chief guest Professor Atiqul Islam, Vice Chancellor of North South University, shared his valuable thoughts and Dr. Hasan Mahmud Reza, Professor and Dean of the School of Health and Life Sciences, requested the students to undergo screening tests & pap smear tests.

SEMINAR TITLED “SAY NO TO DRUGS”

Anti-drug Abuse Seminar 2022 was organized by the Department of Narcotics Control Bangladesh, under the Ministry of Home Affairs in association with Lion's Club Dhaka Platinum Unit. Mr. Benjir Ahmed, member of Board of Trustees, and Professor Atiqul Islam, VC of NSU were present as the Chief and Special Guests respectively. The speakers emphasized how everyone needs to work together for the prevention of drug abuse. Dr. Hasan Mahmud Reza, Professor and Dean of the School of Health and Life sciences, highlighted the impact of drug addiction on the addict’s families and society, and how education is vital to resolve this issue and the Department of Pharmaceutical Sciences would continue to play an active role in creating a drug abuse free society.

BADMINTON TOURNAMENT 2021

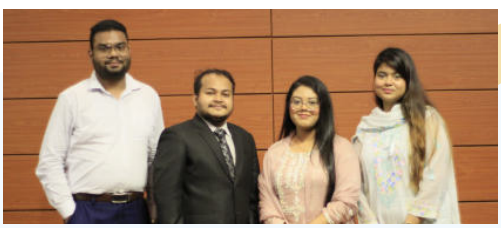
The NSUPC paves the way for various interactive sports activities for its students to hone their sports skills like the “Badminton Tournament 2021”. Sponsored by the MASCO group, this tournament featured three events: ‘Men’s Doubles', ‘Women’s Doubles’ and ‘Mixed Doubles’. Dr. G. M. Sayedur Rahman, Professor and Chair of the Department of Pharmaceutical Sciences, Dr. Hasan Mahmud Reza, Professor and Dean of the School of Health and Life Sciences along with other faculties presented the trophies to the winning teams.

WORLD PHARMACISTS DAY 2021

Just like every year, World Pharmacists Day 2021 was observed at NSU to pay tribute to pharmacists for their role in improving global health. The day was observed uniquely by merging a virtual webinar and a physical rally. The online webinar went smoothly with the constant support of Dr. Hasan Mahmud Reza, Dean of the SHLS and guidance of Dr. G. M. Sayedur Rahman, Chair and Professor of the Department of Pharmaceutical Sciences. It was a lively session made possible through the participation of faculty members and alumni. The physical celebration at the NSU campus was also a great success with the presence of faculty members, club members and selective volunteers maintaining COVID restrictions.

SUCCESSION CEREMONY

A succession event bid adieu to the much-loved Executive and Sub-Executive Bodies (2021 - 2022) of NSUPC. It was a bittersweet occasion as the dedication and perseverance of the previous panel members was commemorated and the reign was handed to the members of the new panel. After appreciating the former panel, Dr. G. M. Sayedur Rahman, Chair and Professor of the Department of Pharmaceutical Sciences, along with Professor Dr. Hasan Mahmud Reza, Dean of the SHLS, and Anika Tabassum Bristy, Faculty Advisor bestowed certificates and crests to the previous Executive Body.



SYNERGY SESSION

In an attempt to connect students in Bangladesh to reputed global institutions abroad, In2Synergy formulated a Synergy session in collaboration with NSUPC and the SHLS on 13th October 2022. Following Joydipa Chowdhury's (Sr. Executive, Business Development, In2Synergy) joyful expressions of nostalgia, the session aimed to inform the numerous educational opportunities and scholarships available at University of Portsmouth, as briefed by Amran Mofiz, Regional Adviser at UoP, as well as Nottingham Trent University, depicted by Md. Abu Al Nahiyan, Assistant Adviser at NTU. Furthermore, Anwar Naser, Country Manager at ETS elaborated various aspects of GRE, GMAT, TOEFL and IELTS.

WORLD PHARMACISTS DAY 2022

On 25th September 2022, a rally was organized to celebrate World Pharmacists Day. In line with this year's motto, "Pharmacy United in Action for A Healthier World," members of the Department of Pharmaceutical Sciences gathered for the event. Pro-VC, Dr. M. Ismail Hossian took great pride in the Department for creating awareness via events like this. Dr. Hasan Mahmud Reza, Dean of the SHLS, and Dr. G. M. Sayedur Rahman, Chair and Professor of the Department of Pharmaceutical Sciences highlighted the undervalued importance of pharmacists in Bangladesh.

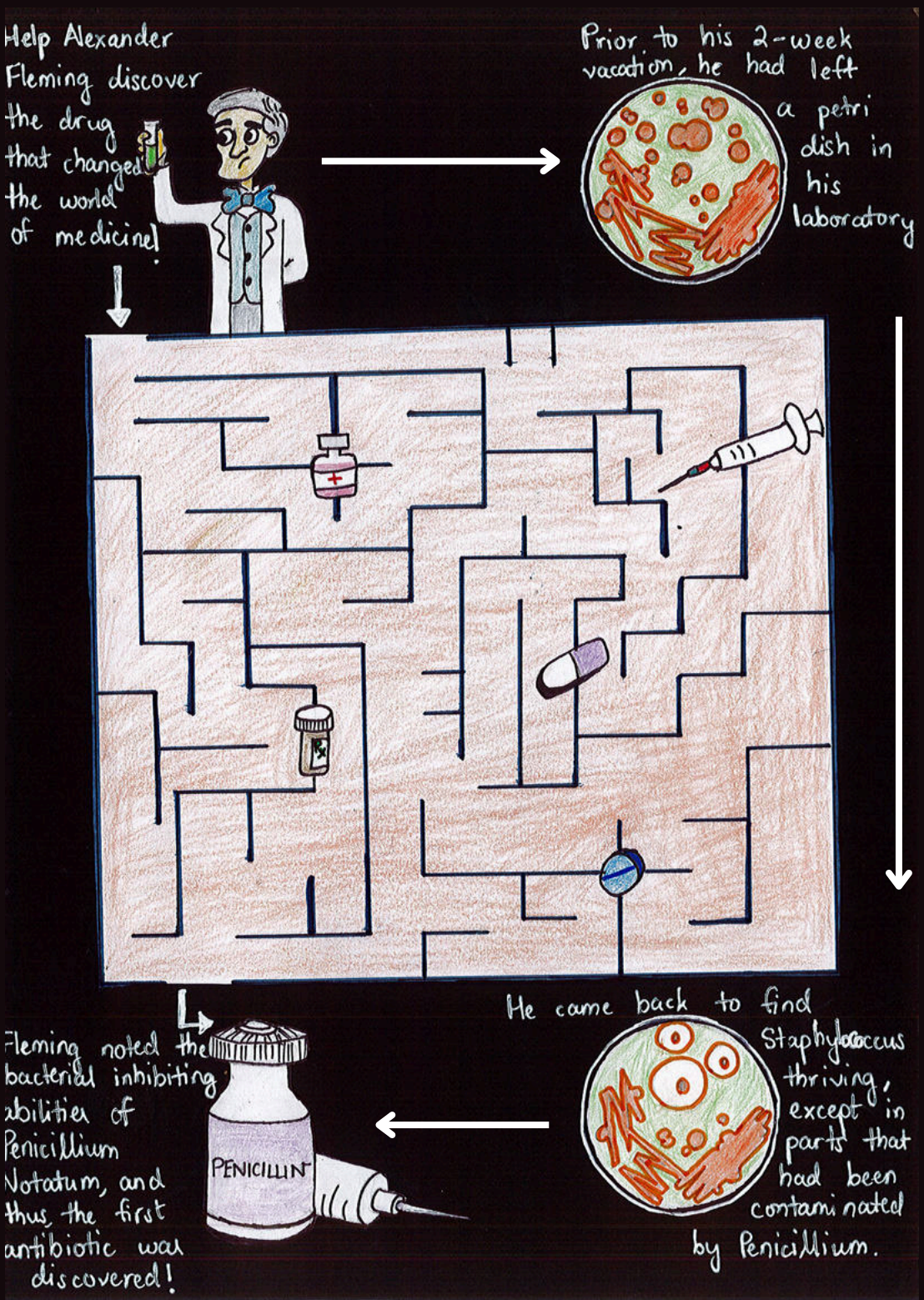
FIELD TRIP 2022

Every year NSUPC organizes a field trip in order to let the students escape from their hectic lives, which also serves as an opportunity to relax and spend quality time with the Department. This year's field trip took place on the 10th of March at Shilpikunjo resort, Gazipur, sponsored by SMC and CBL Munchee group. It was a one day event that included many activities which ended with a prize giving ceremony. The event also had a cultural segment where the students took part in dancing, singing and drama.

OPPORTUNITIES FOR HIGHER EDUCATION AT NAIST

On 29th June 2022, a special session about further education opportunities at the highly renowned Japanese institution, Nara Institute of Science and Technology (NAIST) was organized providing attendees insights on the NAIST campus, the different types of exciting research being done, and most importantly—how to enroll in the Masters, Doctorate, and Ph.D. programs. Professors at NAIST, Dr. Masashi Kawaichi (Head of the Division for Global Education at NAIST), Dr. Yasumasa Bessho, and Yuichi Sakumura, delivered their valuable speeches.

HELP ALEXANDER FLEMING DISCOVER PENICILLIN!



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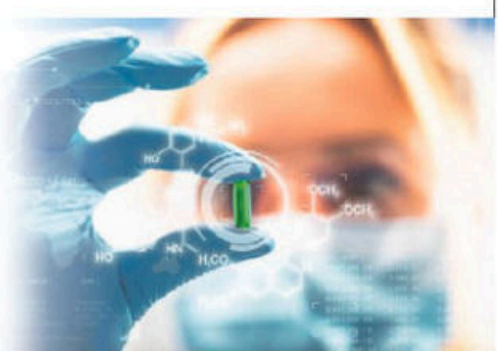

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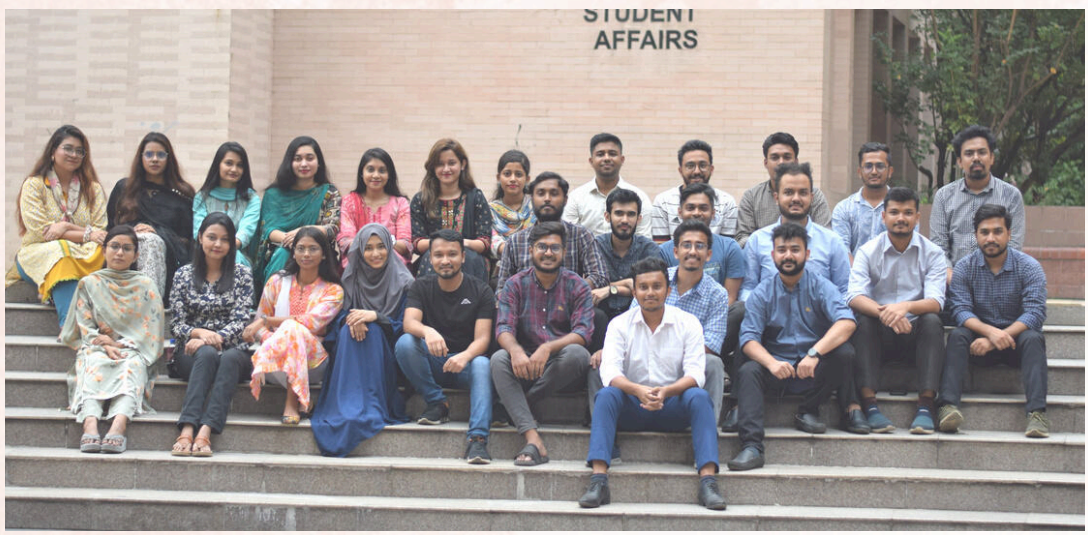

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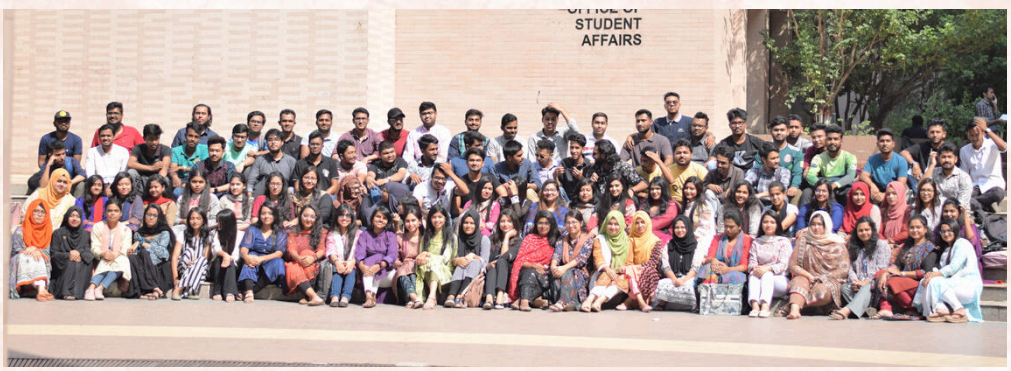

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Sohel Bin Azad is currently working as Post Graduate Research Fellow at Bangladesh Reference Institute for Chemical Measurements (BRICM), the first reference lab in Bangladesh under the Ministry of Science & Technology. At BRiCM he manages the Planning, Reaearch & International Affairs Division, and he also works in health & biotechnology division. He began his working life from his days as a student with a goal of improving our nation.

2012 : Managing Director of 29code films (production house)

2016 : Co-Founder & CSO, ASSEN (a 360 degree marketing, advertising, event agency;) www.assengroup.com)

2018 : Chairman of Moto Life Bangladesh Ltd. (authorized showroom owner of Japanese Brand SUZUKI & Honda motorcycle)

2020 : Health Aid 360 , multi-dimensional organization focused on health which started its operation launching a program named Covid Emergency Response Program (CERP) during COVID pandemic to aid persons affected by COVID

FROM THE OAT TO THE OFFICE

As I stared blankly at my faculty in OAT, my mind was planning my 4th successive career plan of the year. This time I was thinking about being a registered pharmacist in the USA. Before this, I had already planned to be a production pharmacist, international marketer and a researcher too! I suddenly realized that I was in my 4th year of BPharm and was yet to decide on which track I would embark on.

Why exactly is it important to take the decision early?
Firstly, if the specialization process is not initiated early, the result is a graduate who is a jack of all trades, master of none. The early decision about career results in singular focus on a specific track. This enables customization of one's preparations around his or her goal, while covering the standard curriculum.
In addition, this early call-to-action provides the edge which is necessary to ace in the cut-throat working world. The only way to stand out and thrive in the dynamic environment is to obtain skills which would single one out from others.
Finally, after joining the office, that little desk is life. We are on the job approximately 71% of every year of our lives. Waking up early in the morning, smiling at people you dislike to the core, listening to your superior's boring chatter, having to engulf triple espresso shots to stay awake in useless meetings are not exactly pleasant experiences. The only way to survive through these strenuous times is to have a job which is appealing, pleasing and fulfilling.

Now how does one prepare oneself?
The first step is to identify one's passion. It is not always what we think it is. One might think of oneself as having stage fright, but once he or she walks up to the podium, one might feel to be in complete control. We need to dig out our passions and strengths: ask ourselves, ask our peers, ask our teachers and so forth.
The next step is to take the corresponding preparation. For example, if one aspires to be a production manager, studying deeper about formulations should help. Similarly, online marketing courses for a potential marketer, engagement in research for an aspiring researcher, studying for GRE/IELTS for one who wants to go abroad, going through the registration syllabus for a future registered pharmacist, online training courses for the aspiring trainer, hospital pharmacy visits for the potential hospital pharmacist: all these are necessary in bolstering the skills and smoothening the career path.

The most important factor is to get out of the comfort zone and expose oneself to the challenges. Attending seminars, going to factories, interacting with alumni: nothing beats the hands-on experience, no matter how small that is. The journey is long and arduous after graduation and the path is tortuous. There needs to be a head start, and that too from day one!

Shoaib Ul Islam
Batch 091
Deputy Manager
Synovia Pharmaceuticals Limited

ALUMNI SPOTLIGHT

Benyamin Mashroor is very knowledgeable in his field of work regarding quality operations, which include quality control and quality assurance. He is currently working as a Manager in Quality Control at Novartis. He was also the former President of AANSUP, from 2016 - 2019.

Benyamin Mashroor

Mezba Ul Gaffar, current Director of Customer Engagement at Novo Nordisk possesses working experience in pharmaceutical industry with leading multinationals in different capacities of sales, marketing, CE, SFE, MCE and more.

Mezba Ul Gaffar

Nusrat Chowdhury is an aspiring molecular biologist, working as a Molecular Biology Manager at MedComp Sciences. She completed her Graduate studies from Florida A&M University and completed her Postdoctoral studies from Xavier University of Louisiana, where she was a Postdoctoral Research Associate and Adjunct Faculty.

Nusrat Chowdhury

Sinayat Mahzabeen pursued her MSc in Pharmacology from University of Oxford and completed her Ph.D. in Pharmacology at the University of Cambridge, fully funded by the Jameel Education Foundation and the Cambridge Trust. She has recently joined the Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford as Clinical Trial Coordinator.

Sinayat Mahzabeen

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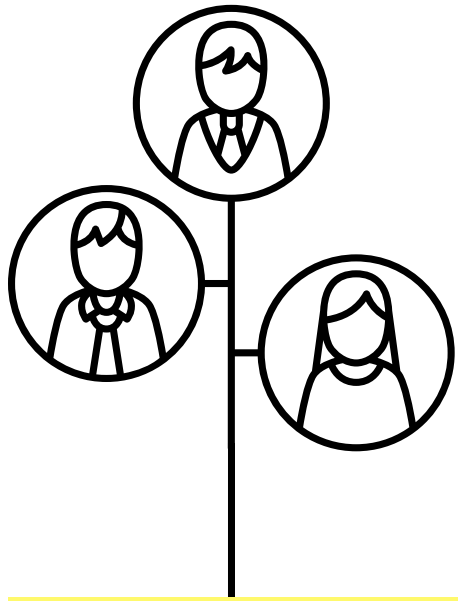

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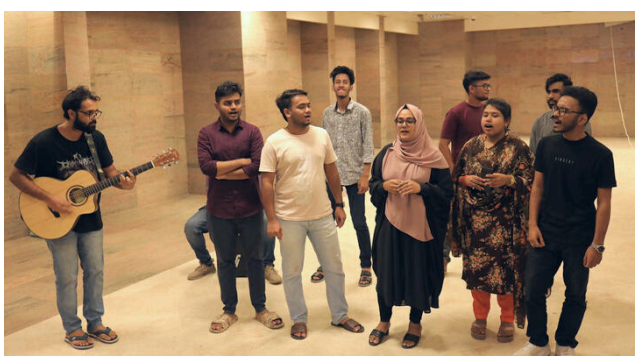

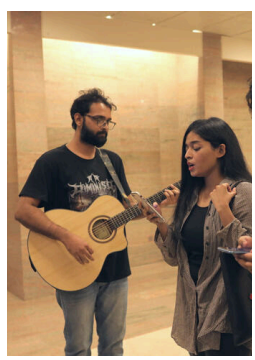

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