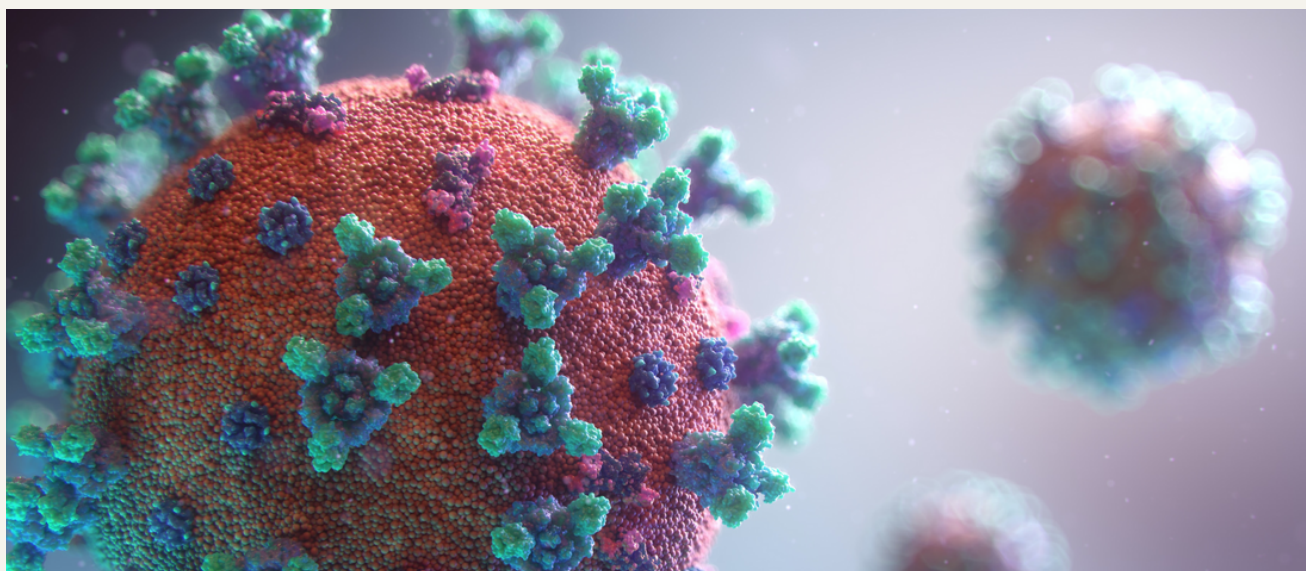


VOLUME 12 | ISSUE 6 | AUGUST 2023

# RHO<sup>Rx</sup>CHI *post*

St. John's University College of Pharmacy & Health Sciences



## THIS ISSUE'S FEATURED ARTICLE:

THE USE OF  
NITRIC OXIDE  
NASAL SPRAY IN  
MILD COVID-19  
INFECTIONS

NATIONWIDE ALBUTEROL SHORTAGE: HOW  
PATIENTS, HEALTHCARE SYSTEMS, AND  
PHARMACEUTICAL MARKETS HAVE BEEN  
AFFECTED

IS ORGANIC FOOD REALLY WORTH IT?

WEIGHTWATCHERS ENTERS THE OBESITY  
DRUG MARKET UPON ACQUISITION OF A  
DIGITAL HEALTH PLATFORM

THE FDA'S ACCELERATED APPROVAL OF  
LECANEMAB FOR ALZHEIMER'S DISEASE

## About the Rho Chi Post

The Rho Chi Post was developed by the St. John's University Rho Chi Beta Delta Chapter in October 2011 as an electronic, student-operated newsletter publication with a team of three student editors and one Editor-in-Chief. Today, our newsletter boasts 12 volumes, over 90 published issues, and more than 600 unique articles to date with an editorial team of first to sixth year student pharmacists, as well as returning PharmD graduates.

The newsletter is distributed by St. John's University College of Pharmacy and Health Sciences to more than 1,500 students and faculty members. Our monthly electronic mailing list continues to extend readership far beyond campus.

## Mission

The Rho Chi Post is an award-winning, electronic, student-operated, faculty-approved publication that aims to promote the pharmacy profession through creativity and effective communication. Our publication is a profound platform for integrating ideas, opinions, and innovations from students and faculty.

## Vision

The Rho Chi Post aims to become the most creative and informative student-operated newsletter within St. John's University College of Pharmacy and Health Sciences. Our newsletter continues to be known for its relatable and useful content. Our editorial team continues to be known for its excellence and professionalism. The Rho Chi Post sets the stage for the development of individual writing skills, collaborative team work, and leadership.

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## **A Message from the Editor-in-Chief, Isabelle Lim**

As August comes to an end, I hope everyone had a great summer and enjoys what is left of the break. As we approach the start of the 2023-2024 academic year, I am proud to introduce a newly redesigned Rho Chi Post! In this issue, you will find seven more articles consisting of student interviews, news updates, and clinical evaluations. I excitedly anticipate what our authors and editors will come up with for the issues to come. As we prepare for the 2023 Fall semester, the Rho Chi Post team is looking forward to hosting events in collaboration with the Rho Chi Honor Society. We hope to engage with more of the student body to promote student writing. We wish everyone a happy and successful semester as they continue on their academic journey!

## **Frequently Asked Questions**

### **Who can write for the Rho Chi Post Newsletter?**

Anyone can write for the Rho Chi Post! Our newsletter is not exclusive to St. John's University students. The Rho Chi Post accepts articles on a daily basis!

### **How do I submit an article?**

You can submit an article by creating an account on our website! Go to [www.rhochistj.org/RhoChiPost](http://www.rhochistj.org/RhoChiPost), click the login button from the upper menu bar, and click register. Upon making an account, you will be able to submit articles to our author inbox.

### **Who determines article topics?**

You are free to choose an article topic of your choice. Take a look at our Author Guidelines for ideas.

### **What happens after I upload my draft article on the Rho Chi Post website?**

Our Editor-In-Chief (EIC) will either edit the article directly or assign the article to a staff editor. If any revisions are needed, the editor will upload the article back to the portal, notifying the author via email. The author can then download the edited article, make the suggested revisions, and reupload the draft back to the portal. Additional drafts will be reevaluated by our copy editors and then EIC, repeating this process. Once no further revisions are needed, the article is accepted for publication.

### **Is there a deadline for authors to send revisions?**

There is no deadline to submit revisions for an article. However, the quicker revisions are made, the quicker the article can move through our editing process. Once an article is accepted for publication, it will be moved into a queue to be placed into an upcoming issue.

## Nationwide Albuterol Shortage: How Patients, Healthcare System, and Pharmaceutical Markets Have Been Affected

By: Celestine Van Sertima, PharmD Candidate c/o 2027

### Addressing the Issue

As the spring season leads the way to respiratory challenges, there have been growing concerns over the shortage of respiratory medications which have raised many problems for people's health. Specifically, a lack of albuterol metered-dose inhalers (MDIs) has heavily impacted the asthmatic community. Albuterol is a life-saving drug that became available in 1972 to treat early forms of asthma.<sup>1</sup> In light of the recent dilemma, what impact could the albuterol shortage have on developing forms of chronic lung diseases, efficiency in the pharmaceutical markets, and quality of healthcare in hospitals and clinical settings?

### Albuterol Impact on COPD and Health-Related Diseases

Albuterol is one of many bronchodilators, specifically an adrenergic bronchodilator. It works to relax the smooth muscles of the bronchial tubules in our lungs.<sup>2</sup> Albuterol is a beta 2-adrenergic agonist and is known as a rescue or quick-relief inhaler used to relieve bronchospasm, shortness of breath, chest tightness, and coughing.<sup>3</sup> Beta 2 agonists are bronchodilators that improve airflow in cases of lung disease, like chronic obstructive pulmonary disease (COPD).<sup>3</sup> COPD is a chronic inflammatory lung disease involving obstruction to airflow and breathing-related health. Albuterol products commonly used by patients include Accuneb, Proair Respiclick, Proventil, Proventil HFA, Ventolin, and Ventolin HFA.

Albuterol is typically administered as an

aerosol powder, aerosol solution, or nebulizing solution. Proair Respiclick is a dry-powder formulation taken orally by adults and children 2 years and older. Proair, Proventil, and Ventolin are MDIs that provide 90mcg of albuterol per pump. Accuneb is a liquid solution that is inhaled by mouth using a jet nebulizer machine that vaporizes the solution. The typical frequency for use of an inhaler is 3 to 4 times a day.<sup>3</sup> Albuterol medication, despite its form, should be used appropriately by patients who actively adhere to the dosage amount prescribed by doctors. Each inhaler provides 60 to 200 inhalations and is discarded once the number of inhalations is complete. The specific measures that attain the proper use of albuterol demonstrate its impact and constant need and supply to patients.

### Shortage of Albuterol Metered-Dose Inhalers

Since October 2022, albuterol has been on the Food and Drug Administration (FDA) medication shortage list. According to the American Society of Health-System Pharmacists (ASHP), it was significantly limited in June 2022.<sup>4</sup> Individuals with asthma and breathing-related issues commonly use albuterol; however, the introduction of coronavirus disease-2019 (COVID-19) in early 2020 has recently increased medication consumption. It is widely used to mitigate the impacts of respiratory-related COVID-19 symptoms.

Akron Operating Company, LLC., a significant production factory in the United States (U.S.) shut down production in February 2023,

# ALBUTEROL SHORTAGE

significantly reducing the supply and distribution of medication being supplied to hospitals and clinics.<sup>5</sup> Nephron Pharmaceuticals, another U.S. manufacturer, is facing an increase in demand for albuterol medication which it is unable to meet due to manufacturing and production issues.<sup>5</sup>

According to the American Lung Association, the most prevalent complication concerning the albuterol shortage is its effect on people who have respiratory issues and are at risk of developing chronic lung disease.<sup>5</sup> Hospitals across the country have been monitoring and maintaining their supply chain by making appropriate protocols, stock inventory, compounding, and knowing who their suppliers are. They fear that the recent shortage can affect discharging patients or require patients to visit the emergency room due to the lack of access to medication.

## Impact on the Pharmaceutical Market

While medication shortage has the most drastic impact on patients, they have also been shown to hurt pharmaceutical companies. Since several major manufacturing plants and pharmaceutical factories have shut down, there has been a significant impact on hospital medication shortages. The most prominent reasons for a company's drug shortage are price, quality regulations, or drug unavailability. During the height of the COVID-19 pandemic, pharmaceutical companies could not effectively reach the unexpected growing demands, resulting in the capacity exceeding the control costs.

Stakeholders across the pharmaceutical world, healthcare providers, and the legal system have hinted at a new innovative approach to relieving shortages. This concept includes the cooperation of generic and brand

medication manufacturers to increase the production and availability of drugs. In addition, the pharmacy benefit managers (PBMs) model has also received some attention as it will provide pharma with excellent access while maintaining business objectives.<sup>6</sup> PBMs can help address medication shortages by working with drug manufacturers, wholesalers, and pharmacies to identify alternative sources of medication treatments and manage inventory to ensure that medications are available when needed. Further-more, through the collaboration of different sectors and groups within the healthcare system, pharmaceutical markets can be restored, and the impact of the albuterol shortage can be minimized.

## The Prospective Outlook of Albuterol and Its Significance

Albuterol is an essential drug for many patients and the idea of it being on shortage is daunting. While the recent shortage of albuterol has drastically impacted the productivity of hospitals and clinics already, the pharmaceutical market has shown the appropriate actions to address these types of changes previously. Thus, we must remain hopeful for the success of managing and treating patients with lung diseases despite this setback.

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## Interested in writing for the Rho Chi Post?

Go to <http://rhochistj.org/RhoChiPost> and click on the login option from the menu bar to make an account! With an account, you'll have access to the article submission portal where you can submit your writing for publication in an upcoming issue!

**Remember, you do NOT have to be a member of Rho Chi, a member of the editorial team, or a student of St. John's to write for our newsletter!**

If you have any questions, feel free to email us at [rhochipost@gmail.com](mailto:rhochipost@gmail.com)!





## Rho Chi Talks: Transitioning To a PGY-2 Pediatric Pharmacy Residency

Featuring: Nicole Cernaro, PharmD, PGY-2 Pediatric Pharmacy Resident

By: Urooj K. Malik, PharmD Candidate c/o 2024

Nicole Cernaro is a PGY-2 Pediatric Pharmacy Resident at St. Peter's University Hospital located in New Brunswick, New Jersey. She recently completed her PGY-1 pharmacy residency from St. Peter's University Hospital as well. Nicole earned her Doctorate in Pharmacy from St. John's University College of Pharmacy and Health Sciences in May of 2022. During her time at St. John's, Nicole was involved in numerous organizations such as the Student Society of Pediatric Pharmacy and Relay for Life which led her to find her career path within the pediatric patient population.

### Why did you choose to pursue a PGY-2 residency in pediatrics specifically?

For me personally, I've always loved pediatrics. I came into school knowing I was interested in working with this patient population. When I was a freshman in college, I volunteered at a few children's hospitals, which really sparked my interest in pediatrics. Also, throughout pharmacy school, I always felt more interested learning the pediatric topics that were covered in our curriculum. I continued to love all my pediatric rotations during my APPEs in my final year of school and similarly enjoyed the pediatric rotations going into my PGY-1 residency as well. I wanted to pursue a PGY-2 where I trained in pediatrics specifically because I felt it would be very beneficial for my professional career development and my career goals to get extensive training in pediatrics. This training will expand my critical thinking skills and clinical knowledge in pediatrics. Ultimately, I do want to become a pediatric pharmacist, and this will put me

on the best track to achieve that goal.

### How has the transition been from ending your PGY-1 residency and starting your PGY-2 residency?

As of now, I am currently still in the orientation period for my PGY-2. But if I were to compare the transition from entering as a student in pharmacy school to starting a PGY-1 residency versus the transition from ending a PGY-1 residency to a PGY-2 residency, the transition has been a whole lot smoother and a little bit easier. This is because in the initial stages, there has been a lot less stress for me, especially because I stayed at the same program for both my PGY-1 and PGY-2. So, for me, I'm already familiar with the EMR, my team, and the preceptors' expectations. I'm also not tasked with doing a lot of the additional onboarding requirements. Since I am staying the same program in the same state, I am not required to take any additional licensing exams at this time. I'm already a licensed pharmacist and have gone through a

year's worth of experiences as a pharmacy resident. My confidence is a lot higher now than when I was coming in as a PGY-1 resident after graduating. Overall, I would say the transition is going well during the orientation period.

### **What are some similarities and differences between applying for a PGY-1 residency versus a PGY-2 residency?**

In terms of similarities, the process and timeline when it comes to deadlines for application is mostly all the same. The PGY-2 application process follows the same format as PGY-1 applications and uses the same system but essentially, you're adding on your PGY-1 experience. A difference worth noting is that a PGY-1 residency is typically more general but when applying for a PGY-2 residency, you are picking a specialty of interest. Due to this, I would recommend making sure your CV, letter of intent, and other experiences during your PGY-1 all reflect the specialty you are applying for if possible.

### **Summarize your time as a PGY-1 resident at St. Peter's University Hospital.**

I recently had a reflection week at the hospital for my PGY-1 and was told to name three key words to describe my year as a resident. I described my year as tiring, rewarding, and collaborative. I feel those three words sum up my time as a PGY-1 accurately. I felt as though my residency had a good balance and I was able to get a vast number of experiences. I partook in clinical rotations but also had the opportunity to be involved in special projects if they came up such as procurement of a drug or managerial and leadership projects. I had the opportunity

to be debriefed on each specific situation at hand which I felt was a really great experience. I had a well-rounded year between working on two research projects, going on the scheduled PGY-1 rotations, and gaining great management experience.

### **What would you say was your biggest achievement as a PGY-1 resident?**

My biggest achievement during my PGY-1 residency was presenting my case-controlled study research project for Pharmacy Research Day and winning the research competition. I then had the opportunity to compete against the entire hospital during our Hospital Research Day. My research was about identifying risk factors for urinary tract infections secondary to extended spectrum beta-lactamases in the pediatric population.

### **What does a typical day in the life look like for you as a PGY-2 resident?**

As I mentioned earlier, I am still in the orientation period of my PGY-2 but can describe what a typical day looks like at this time. In general, your typical day, whether you're a PGY-1 or PGY-2 resident is similar. Specifically, for me, orientation is a little different because I'm currently training in the NICU satellite pharmacy right now. So essentially, my mornings are reserved for staying there and training. I'm currently learning about order entry, compounding, and TPN order entry. Then usually in the afternoons, I'm either still NICU training or I'm in different orientation meetings. Also, because I was previously here for my PGY-1, I am participating in the PGY-1 orientation and helping the new residents orientate in certain areas. My afternoons would consist of any of these three responsibilities in addition to other projects I am currently working on,

beyond orientation. Once the orientation period is over and I begin clinical rotations. Mornings will start with doing patient workups before rounds. Then, I would meet with my preceptor, and we'd go over patients together before going to rounds that take place mid-mornings to early afternoons. Later in the afternoon is typically reserved for any patient follow-ups, meetings, and other projects and assignments that need to be completed.

### **What do you love most about your job?**

The people I work with. I feel as though I work in a very supportive environment. I know this especially because I've already spent a whole year here as a PGY-1. My preceptors are all so supportive and really allowed me to develop so much in my first year. So, I know they're only going to continue to support me in my growth as a pediatric pharmacist. Another thing I love about my job is the patient population. The pediatric population is so special and a unique population to work with. I never had experience working in the NICU and now training in the NICU satellite pharmacy is giving me a crash course on the NICU patient population and their medications, which I think is so interesting to learn about.

### **What advice do you have for pharmacy students trying to pursue a career pathway as a PGY-2 resident?**

I believe you have to find what you're passionate about because doing both a PGY-1 and a PGY-2 is not easy. I think finding what you're passionate about helps in the long run when it comes to mental health and career fulfillment. Another piece of advice I have is that as a PGY-1, you will be extremely busy. So, if you plan on pursuing a PGY-2, be sure to

start your preparation early! Remember, you are balancing your workload and rotations as a PGY-1, preparing for midyear, and working on your PGY-2 application all at the same time!

### **What did you utilize or wish you utilized more during pharmacy school that you would advise others to as well if they wanted to pursue a PGY-2 residency in pediatrics?**

I do want to mention that there really is no "one size fits all" to any of this because there are a multitude of different pathways to take to become a resident and to specialize. But one thing I didn't do during pharmacy school that I think could have been a good experience was being more involved in organizations on a national level. Though I was involved in the Student Society of Pediatric Pharmacy organization at the university, I wish I tried to become more involved in the national organization also known as the Pediatric Pharmacy Association. I would also recommend getting involved in a publication whether that'd be a newsletter or collaborating with faculty on a project. This is a great way to strengthen your professional medical writing skills. Lastly, if you're interested in conducting research, get involved as early as you can!

**On behalf of the Rho Chi Post, we would like to thank Nicole for sharing her residency experience with our newsletter!**

## Is Organic Food Really Worth It?

By: Sairah Sheikh, PharmD Candidate c/o 2024

In a world where people are becoming increasingly health-conscious, organic food is of interest to many. It is often seen as the pinnacle of healthy food, although may not be affordable for all. Those who can afford it spend thousands of dollars a year on organic food and see it as a worthy investment in their health. The global organic food market is worth billions of dollars, and its sales grow steadily every year.<sup>1</sup>

A large prospective study conducted in the United Kingdom (UK) followed over 623,080 women for 9.3 years to determine if organic food consumption reduced cancers like soft tissue sarcoma, breast cancer, non-Hodgkin lymphoma and other common cancers like colorectal cancer, lung cancer, and stomach cancer. The researchers of the study placed the women into three groups: those who never ate organic food, those who sometimes ate it, and those who usually/always ate it. The study found no decrease in cancer risk for the women who adhered to an organic diet, except for non-Hodgkin lymphoma, which was found to decrease in women who consumed mainly organic food. For instance, 8.65% of the women who usually/always ate organic food developed cancer, 8.54% of the women who sometimes ate organic food developed cancer, and 8.81% of the women who never ate organic food developed cancer.<sup>2</sup> Therefore, this study indicates that organic food has no effect on cancer development.

A systematic review published in the National Library of Medicine analyzed disease outcomes in people who ate organic food versus people who did not. Overall, the authors did

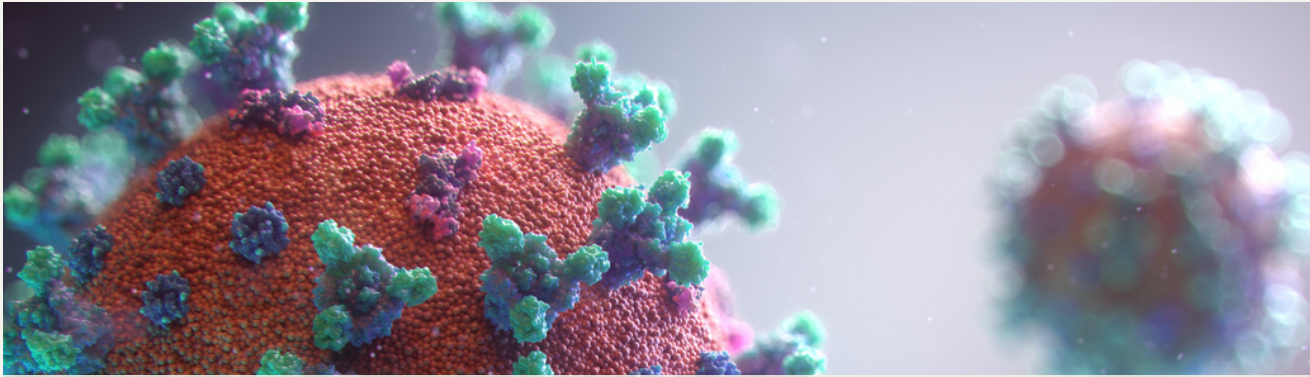
not find any significant difference between diseases. Some studies in the systematic review showed no significant difference between organic and non-organic foods in terms of levels of beta-carotene and lycopene in tomatoes, carotenoid concentrations in carrots, and levels of antioxidant, glucose, and cholesterol generally. In addition, those who consumed organic and non-organic apples had similar uric acid levels.<sup>3</sup> Other studies in the review reported some differences between those who eat organic foods and those who do not. For example, a study was conducted in Italy and had people eat a Mediterranean diet with non-organic food, followed by the same diet with organic food. They found significant differences in the organic group, which included increased antioxidant effect, decreased body weight, and decreased inflammatory biomarkers such as interleukin (IL)-1, IL-6, high-sensitivity C-reactive protein (hs-CRP), and homocysteine compared to the non-organic group.<sup>3</sup> Additionally, in a study of 35,107 mothers of male infants in Norway, it was seen that mothers who ate organic vegetables “often” or “mostly” had a lower risk of preeclampsia than those who reported “never/rarely” or “sometimes” eating organic vegetables.<sup>3</sup> Furthermore, the Nutri-Net Santé group found that high organic food scores were negatively associated with the overall risk of cancer, with a specific decreased risk of developing non-Hodgkin lymphoma and postmenopausal breast cancer.<sup>3</sup> However, it is important to note that people who consume organic food more often tend to also have healthier lifestyle habits,<sup>3</sup> which may decrease the risk of getting cancer.

The Mediterranean diet is an excellent option for those looking for affordable food choices with improved health outcomes, as it has been proven to lower the risk of disease. The diet consists of lots of fruits, vegetables, beans, and lentils; a moderate amount of fish and dairy; healthy fats like extra virgin olive oil; poultry instead of red meat; and little to no sweets or sugary drinks.<sup>4</sup> A study of nearly 26,000 women found that those who followed the Mediterranean diet had a 25% reduced risk of developing cardiovascular disease over 12 years.<sup>5</sup> With heart disease being a leading cause of death worldwide, this information is important. Additionally, the antioxidant-rich Mediterranean diet has been found to keep telomeres at long lengths. Telomeres are parts of deoxyribonucleic acid (DNA), and longer telomeres are associated with a lower risk of developing chronic diseases and a higher life expectancy. A Nurses' Health Study done on 4,676 healthy middle-aged women observed that the women adhered to the Mediterranean diet and were found to have longer telomere lengths. Another Nurses' Health Study following over 10,000 women ages 57 to 61 examined the association between the Mediterranean diet and aging. They defined healthy aging as "living to 70 years or more, and having no chronic diseases (e.g., type 2 diabetes, kidney disease, lung disease, Parkinson's disease, cancer) or major declines in mental health, cognition, and physical function."<sup>5</sup> The study found that the women who followed the Mediterranean diet were 46% more likely to "age healthfully". Another study done on nearly 7,800 pregnant women found that following the Mediterranean diet closely was associated with a 21% lower risk of developing an adverse pregnancy outcome such as pre-eclampsia, gestational hypertension, gestational diabetes, preterm birth, or stillbirth.<sup>6</sup>

In conclusion, although organic food is found to have some added nutritional benefits, there is little evidence to suggest it reduces the risk of disease. The minimal benefits of organic food do not appear to justify its cost. A Mediterranean diet has been proven to reduce disease risk while being affordable.

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## The Use of Nitric Oxide Nasal Spray in Mild COVID-19 Infections

By: Isabelle Lim, PharmD Candidate c/o 2024 and Hadeel Aldasooky, PharmD Candidate c/o 2024

As the threat of coronavirus disease 2019 (COVID-19) continues to loom over the healthcare world, there is still a need to uncover new treatment options for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection. The COVID-19 Treatment Guidelines Panel's current recommendation for the primary management of mild to moderate COVID-19 in all nonhospitalized adults includes symptomatic relief with over-the-counter (OTC) medications. For those who are at a high risk of developing severe COVID-19, it is recommended that Paxlovid™ (ritonavir-boosted nirmatrelvir) or Veklury® (remdesivir) is utilized, with ritonavir-boosted nirmatrelvir being preferred as an oral formulation versus remdesivir, which is administered intravenously. If either of these medications cannot be used, another option for preventing progression to severe COVID-19 is Lagevrio™ (molnupiravir).<sup>1</sup>

### Nitric Oxide Nasal Spray

One alternative to the aforementioned COVID-19 treatments is nitric oxide nasal spray (NONS), a formulation that is not available in

the United States (U.S.) but has been studied and used internationally. SaNOTize, a Canadian research and development company, manufactures NONS which is marketed as VirX™ in Thailand, Singapore, Hong Kong, South Africa, Malaysia, Cambodia, and Germany; enovid™ in Israel and Indonesia; and FabiSpray in India.<sup>2</sup> Currently, only gaseous inhaled nitric oxide (iNO) products are approved in the U.S.; in contrast, NONS is based on a liquid formulation. SaNOTize's NONS uses the company's patented NO-releasing solution (NORS™), a product that releases NO gas in therapeutic concentrations with each spray.<sup>3</sup>

### Nitric Oxide's Antiviral Mechanism of Action

NO is a free radical that plays a significant role not only in vasodilation, neurotransmission, and angiogenesis but in innate immunity as well.<sup>4</sup> The ability of macrophages and lipopolysaccharides to kill bacteria and tumors is attributed to their production of NO.<sup>5</sup> In COVID-19, NO was seen to suppress levels of SARS-CoV-2 via two different mech-

# NITRIC OXIDE NASAL SPRAY

anisms of action. The first method involved decreasing palmitoylation of newly expressed spike proteins, which is a critical step in the virus's ability to bind to angiotensin-converting enzyme 2 (ACE2) receptors. The inability to bind to this receptor ultimately inhibits the virus from being able to enter the host cell and replicate its viral DNA. The second mechanism of action involves the inhibition of the early stages of viral RNA replication. This is hypothesized to be due to the effect that NO can have on cysteine proteases that are encoded by SARS-CoV-2.<sup>6</sup> Recent clinical studies concerning the use of NONS as treatment in COVID-19 infection have further supported the use of the novel product in ill patients.

## Literature Review

In a randomized, double-blind, placebo-controlled, phase IIb clinical trial conducted in the United Kingdom, researchers evaluated the clinical efficacy of NONS in patients with mild COVID-19. Patients were eligible for the study if they were between the ages of 18 and 70 years and had mild COVID-19 infection confirmed by a SARS-CoV-2 reverse transcriptase polymerase chain reaction (RT-PCR) test within 48 hours of randomization.<sup>7</sup>

80 patients with mild, symptomatic COVID-19 were randomized in a 1:1 ratio to receive either NONS 120-140 microliters of solution/spray or a placebo nasal spray for 9 days. Many of the patients included in the study completed in India were vaccinated as well, which may be another contributing factor to the lack of hospitalization observed. Still, the ratio of vaccinated to unvaccinated was maintained in both the intervention and the placebo group. The nasal sprays were initiated within 4 days of symptom onset and self-administered as 2 sprays per nostril 5 to 6

times a day. Nasal and throat swabs were conducted by the patients themselves on days 1, 2, 4, and 6 before administration of the sprays to evaluate the patients' SARS-CoV-2 RNA levels during the treatment period. Participants were also instructed to fill out a daily questionnaire throughout the duration of the study, in which they self-reported their symptoms, compliance, and treatment tolerance. Follow-up self-reporting continued for 18 days after the study ended.<sup>7</sup>

The primary endpoint of this study was the decrease in log<sub>10</sub> SARS-CoV-2 RNA concentration. It was seen that there was a significant decrease in the concentration of viral RNA in the NONS group compared to the placebo group 2 days (difference -1.21; 95% confidence interval [CI] -2.07 to -0.35; p = 0.01) and 4 days (difference -1.21, 95% CI -2.19 to -0.24; p = 0.02) after treatment initiation. The authors of this study also noted that there was a 95% reduction of SARS-CoV-2 RNA observed within 24 hours of the study and a 99% reduction after 72 hours in the NONS treatment group. Based on the daily questionnaire, 46.7% of the NONS respondents reported feeling better while only 8% of the placebo group reported similarly. On average, patients in the NONS treatment group reported feeling better by day 2 to 4 of treatment while those receiving the placebo reported feeling better after day 5.<sup>7</sup> There were no serious adverse effects reported in either treatment arm, and no additional information was provided on the nature of milder adverse effects, if any.<sup>7</sup> Overall, the use of NONS in patients with mild, symptomatic COVID-19 was found to be safe and effective in reducing viral load, as well as decreasing symptoms.

An additional study that was completed in

India was a randomized, double-blind, parallel-group, multicenter phase III clinical trial. The primary analysis of the study assessed the efficacy of NONS in nonhospitalized, high-risk patients with mild COVID-19. Individuals were considered high-risk patients if they were older than 45 years, had 1 or more comorbidities, or had not been vaccinated against SARS-CoV-2 at the time of the trial. Adult patients between 18 and 70 years with symptomatic COVID-19 indicated by a positive rapid SARS-CoV-2 antigen test received either NONS or placebo nasal spray within 3 days of symptom onset. Participants were later excluded from the primary analysis if the results of their RT-PCR test returned as negative up to one day after randomization. Pregnant or lactating patients and those with a creatinine clearance (CrCl) less than 30 mL/min<sup>2</sup> were also excluded from the study.<sup>8</sup>

Participants were randomized in a 1:1 manner with a total of 306 participants at the beginning of the study. Day 1 marked the baseline visit during which qualitative and quantitative RT-PCR tests were conducted and subject diaries were allotted to participants. Patients were instructed to self-administer 2 sprays of either NONS 0.45 mL/spray or a placebo nasal spray in each nostril 6 times a day for the next 7 days. Participants also documented their health status, COVID-19-related symptoms, adverse events, and adherence daily.<sup>8</sup>

The primary efficacy endpoint of the study was the mean SARS-CoV-2 viral load change from baseline throughout the study period. The results reflected a mean change of -2.62 log<sub>10</sub> copies/mL in the intervention group and -2.10 log<sub>10</sub> copies/mL in the placebo group on day 8, yielding a statistically significant mean

treatment difference of -0.52 log<sub>10</sub> copies/mL (95% CI -0.92 to -0.12;  $p = 0.010$ ).<sup>8</sup> The second efficacy endpoint assessed the virucidal activity of NONS dictated by the presence of a negative SARS-CoV-2 RT-PCR result on days 2, 3, 4, or 8, where time to achieve a negative RCT-PCR result was measured using the Kaplan-Meier method and log-rank. The Kaplan-Meier curve demonstrated that the median time to attain a negative RT-PCR conversion in the intervention group (3 days after treatment initiation [day 4]) was significantly shorter compared to the placebo group (7 days after treatment initiation [day 8]) (hazard ratio [HR] 1.354; 95% CI 0.949 to 1.932;  $p = 0.044$ ). In the NONS group, 53 subjects (82.8%) became RT-PCR negative by day 8 in comparison to 46 subjects (66.7%) in the placebo group (difference 16.1%; 95% CI 0.2 to 32.1;  $p = 0.046$ ).<sup>8</sup> There were no serious adverse effects reported in this study. The most common adverse effect observed in the NONS group was nasal discomfort, which was categorized as a mild effect.<sup>8</sup>

## Conclusion

These studies have provided evidence of a faster reduction in viral load, quicker recovery from infection, and minimal adverse effects when NONS is used in patients with COVID-19 when compared to the placebo. It is evident that NONS has potential as a form of therapeutic management of COVID-19 in most patients, including those considered “high-risk,” when administered around 6 times a day for 7 days. All in all, the U.S. should consider NONS as adjunctive therapy in cases of mild COVID-19 to prevent progression to severe COVID-19.

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## WeightWatchers Enters the Obesity Drug Market Upon Acquisition of a Digital Health Platform

By: Geraldine Ciaccio, PharmD Candidate c/o 2025

The personalized weight-loss program WeightWatchers took a significant step into the newly popularized obesity drug market. As one of the leading weight-loss programs in the United States, WeightWatchers customizes diet plans according to individual health goals. To expand its weight management platform into clinical settings, the company agreed to acquire Sequence, a telehealth platform that connects patients with obesity specialists. Sequence providers can prescribe weight management medications such as Wegovy, a glucagon-like peptide-1 agonist.<sup>1</sup>

WeightWatchers announced its agreement to acquire Sequence for \$132 million in its latest press release on March 6th, 2023.<sup>1</sup> Sequence was founded in late 2021 in San Francisco. The telehealth platform has gained 24,000 active members since its establishment. Members have praised the quality of care they receive from Sequence clinicians and the ease of obtaining insurance approvals. Members receive an initial consultation with a provider via video or message for \$99 per month, as well as a platform where they can manage their treatment, ask questions, and practice healthy habits.<sup>2</sup> WeightWatchers' rationale for expanding to the clinical field is based on their mission to "help members achieve their weight management goals in a healthy, sustainable way consistent with the latest science."<sup>2</sup> The purpose of this merger is to provide a direct-to-consumer standard of care that delivers clinical care services as an adjunct to nutritional and behavioral change. Only certain patients are eligible for the Sequence and WeightWatchers clinical

weight-management program. Patients must be at least 18 years old, have commercial insurance, and have a body mass index (BMI) greater than 30 or a BMI greater than 27 with a qualifying condition, such as high blood pressure.<sup>3</sup> In addition, pregnant or breastfeeding mothers, along with patients with a family history of medullary thyroid cancer are ineligible.<sup>3</sup>

The new clinical weight management program is advertised on WeightWatchers' website as a "first-of-its-kind solution."<sup>3</sup> It allows potential new members to join a waitlist for the upcoming service. This page stresses the idea that chronic weight management medications should not be used in place of healthy eating. Pairing these medications with WeightWatchers' lifestyle and diet program aims to sustainably manage chronic obesity. New pharmacological interventions for the treatment of chronic obesity have been approved by the Food and Drug Administration (FDA). These medications include Wegovy, a once-weekly semaglutide injection approved by the FDA in June 2021 for chronic weight management in obese adults.<sup>4</sup> In order to be considered for Wegovy, patients must have one weight-related condition, such as high blood pressure, high cholesterol, or type 2 diabetes. As per the FDA's approval and guidelines, Wegovy is to be used in conjunction with a healthy diet and increased exercise.<sup>4</sup> Representatives from both Sequence and WeightWatchers have emphasized this important condition. Remi Cossart, co-founder and CEO of Sequence, affirmed that "patient behavior

change with medically appropriate clinical solutions is more powerful and more sustainable than clinical alone.”<sup>1</sup> Similarly, the CEO of WeightWatchers, Sima Sistani, stated in the press release that with WeightWatchers’ “science-backed lifestyle program and Sequence’s tech platform, this is an unmatched opportunity to create an integrated product offering.”<sup>1</sup> Together, both organizations will provide holistic solutions for patients living with obesity.

The transaction for the acquisition of Sequence by WeightWatchers is expected to close in the second quarter of 2023.<sup>2</sup> As this date draws near, the company is working on creating an individualized plan for members who are eligible and eager to attempt to clinically manage their obesity. The integration of clinical expertise from Sequence with tailored healthy eating habits from WeightWatchers aims to provide effective care to patients all on one platform.

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## 6th Year Perspective: Conducting Research Projects and Attending Midyear

Featuring: Urooj K. Malik, PharmD Candidate c/o 2024  
By: Isabelle Lim, PharmD Candidate c/o 2024



Urooj is a sixth-year pharmacy student at St. John's University. Throughout her time at St. John's Urooj has held positions in organizations like the American Association of Psychiatric Pharmacists, Phi Lambda Sigma, International Society of Pharmacoeconomics & Outcomes, Lambda Kappa Sigma, and Rho Chi Post. She has also been involved in research projects focusing on the idea of provider status for pharmacists in collaboration with Dr. Rajesh Nayak, a professor at St. John's University College of Pharmacy and Health Sciences. Her first project focused on investigating pharmacists' involvement in COVID-19-related services during the pandemic and the implications for the expansion of the scope of practice within New York State (NYS). Upon the completion of her first project, Urooj got to present her results at the Midyear Clinical Meeting in 2022. Following the completion of this study, Urooj went on to focus on pharmacy students where she evaluated the awareness and knowledge of NYS pharmacy students regarding provider status and the implications this might have for post-graduation planning. Now, Urooj is working with Dr. Nayak to evaluate institutional readiness for utilizing provider status to its maximal potential.

### What does it mean to conduct research as a pharmacy student and how did you go about it?

Conducting research as a pharmacy student can have a multitude of definitions as there are so many paths students can take based on their individual interests. In other words, depending on the thesis of your research, the entire experience of how you conduct research can vary drastically. Also, people have varying methodologies that work for them to organize their thoughts and find evidence to back it — so what worked for me might not for someone else. Subsequently, the way that I approached my research was in different steps and stages as it is very impor-

tant to have a structured approach or you can easily get lost in keeping track of your thought process. First and foremost, I would start with the ideation phase of just putting down what I know from first- or second-hand information that I have gathered over the years being in pharmacy school. Then, I would identify the key talking points or evidence that support my overall thesis based on the information that I know. Next, I would start collecting data points as well as expanding my initial talking points to see if there are any more supporting arguments I can use to solidify my logic behind the proposed thesis; this part of the process would entail accessing important research platforms, reviewing peer-reviewed journals,

and analyzing any and all articles related to my subject matter. After I have collected enough data and conducted sufficient research on relevant and accessible documents, I would start putting forward a preliminary draft. An important thing to note here is that whenever conducting research of any kind, it is imperative to have a team of co-authors or editors to ensure your research piece is logically sound and concise without any grammatical errors. Lastly, with multiple rounds of reviews and edits by a group of credible individuals, it would be time to put pen and paper down and go through the submission process. As with any process in the world, there were unanticipated complications and challenges, however, this is an oversimplified version of what I had to do to conduct my research. As mentioned earlier, this is a process that worked for me but it might not work for everyone. Consequently, the best advice to counter that is to first figure out your method of working best and then begin your research.

### **Why did you want to pursue research?**

I always wanted to pursue research because I greatly value the potential that pharmacy-related research can have when it comes to making significant advancements in healthcare and improving patient outcomes. My interest in research first sparked when I learned about provider status during my Pharmacy Law course. Dr. Nayak was the professor teaching that course at the time and I reached out to him wanting to learn more about provider status and why it isn't being implemented in NYS. I also personally had a distinct interest in policy and advocacy within the pharmacy profession. After expressing interest to Dr. Nayak, we came up with the idea of conducting research on this topic as a team.

### **How did you feel going into your research projects and what did you get out of it?**

Initially, being a pharmacy student alone can be quite a daunting task, and to imagine conducting lengthy research on top of that would certainly seem like an impossible challenge. I can attest that it does increase the workload but compared to the learning experience, it most definitely pays off. I believe that conducting research has helped me gain a deeper understanding not only of the pharmacy industry but of myself as a future pharmacist as well. There are non-analytical elements within every research project that will help you with developing your time management skills, learning to organize your priorities to stay ahead of deadlines, and getting familiar with situations where you have multiple projects to work on. In terms of analytical development, taking part in any research in whatever capacity you can helps with honing your critical thinking skills, learning how to navigate through industry-used databases, and structuring your analytical process similar to how a practicing pharmacist would. Overall, I would not sugar coat and say that it is easy to undertake a research project, however, with proper management and oversight, it can be instrumental in helping you develop as a professional.

### **What is the Midyear Clinical Meeting and why did you decide to attend?**

I always wanted to pursue research because I greatly value the potential that pharmacy-related research can have when it comes to making significant advancements in healthcare and improving patient outcomes. My interest in research first sparked when I learned about provider status during my

Pharmacy Law course. Dr. Nayak was the professor teaching that course at the time and I reached out to him wanting to learn more about provider status and why it isn't being implemented in NYS. I also personally had a distinct interest in policy and advocacy within the pharmacy profession. After expressing interest to Dr. Nayak, we came up with the idea of conducting research on this topic as a team.

### **What did your timeline look like for completing your project and submitting an abstract for Midyear?**

I do want to mention it's important to note that the specific timeline can vary based on the nature and complexity of a project. For my project, the summer prior to the Midyear conference was when Dr. Nayak and I identified the topic of interest and determined the objectives. We also spent the remainder of the summer conducting literature reviews on provider status. In my case, the survey and data were already collected prior to the start of my project thanks to Dr. Elsen Jacob and her affiliation with the Coalition for the Advancement of Pharmacy Practice (CAP) who was also involved in this project. But typically, the next steps are to collect and analyze data. Moving into the start of the Fall semester was when we started drafting the abstract to submit to ASHP as the deadline to submit was October 1st. This deadline can change in the future so it's important to check the ASHP Midyear conference website for the most up-to-date information on abstract submission. Once the abstract was submitted we did have a waiting period of a couple weeks so that the abstract could be reviewed and evaluated. Near the end of October was when I received an acceptance notification from ASHP with

further instructions regarding presentation details and any additional requirements. From the point of acceptance to the start of the conference which was at the beginning of December, we were preparing for the presentation and drafting the poster that was going to be displayed at the conference. We aimed to have everything completed and printed a week prior to the conference, concluding our project.

### **What was the biggest challenge you faced in terms of carrying out your project and getting it ready for Midyear?**

The project I worked on for Midyear was my first project ever in terms of conducting research. Because of this, I would say my biggest challenge on this project was learning the typical workflow and timeline for carrying out a project like this. For instance, with the research design, I struggled a bit initially when it came to determining the appropriate study design and selecting a feasible research question. However, these challenges were not insurmountable, especially with the guidance I received from Dr. Nayak as well as other experienced colleagues I collaborated with on this project. With their assistance, I was able to navigate through this project successfully.

### **What did you enjoy most about the entire process?**

Personally, in this process, I would say the part I enjoyed the most was presenting my findings at the Midyear Clinical Meeting. I was really grateful for the opportunity to present my project at such an esteemed conference. Seeing all the work my faculty mentor, colleagues and I put in for the past 6 months come together was very rewarding. I also really enjoyed interacting with the pro-

## 6TH YEAR PERSPECTIVE

professionals who stopped by at my poster presentation and valued the feedback I was given as I still implement the advice given to me after this project and will continue to do so in the future. Overall, I felt this was a great learning experience for me.

### **What advice would you give students that are looking to do a research project?**

I would say not to feel hesitant to reach out to your professors about research. I myself was a little reluctant to ask about research opportunities but it's important to remember to make the approach with the right mindset and preparation to increase your chances of success. Especially if you are taking a course with a professor and there's a certain topic being covered that you're interested in, don't be afraid to take a chance and ask. Another

piece of advice I would give is to manage your time wisely. Research projects often have strict timelines and deadlines that need to be reached. Especially when working on a project during the school year, taking courses and working, it can be difficult to manage multiple tasks.

**On behalf of the Rho Chi Post, we would like to thank Urooj for sharing her experience with research and Midyear with our newsletter!**

### **Interested in attending Midyear?**

The 2023 Midyear Clinical Meeting will be held between December 3rd to 7th in Anaheim, CA.

Register by October 20th to get the Early Bird Registration discount!

For more information about Midyear, please visit their website:  
<https://midyear.ashp.org/>.

## The FDA's Accelerated Approval of Lecanemab for Alzheimer's Disease

By: Imaan Sekhery, PharmD Candidate c/o 2025

On January 6, 2023, the United States (U.S.) Food and Drug Administration (FDA) approved Eisai's Leqembi (lecanemab), an alternative treatment for Alzheimer's disease (AD). The creation of the drug depicts a significant advancement within the small field of AD treatments. This disease state is known to begin with memory loss, progressively leading to further unresponsiveness in an individual.<sup>1</sup> Before the approval of lecanemab, cholinesterase inhibitors and N-methyl-D-aspartate (NDMA) antagonists were the main available treatment options for patients with AD.<sup>2</sup> Lecanemab is under the class of monoclonal antibodies and intends to target the fundamental pathophysiology of AD.<sup>3</sup> Lecanemab specifically targets amyloid beta plaques and neurofibrillary tangles, where the monoclonal antibody selectively binds to destroy amyloid-beta aggregate.<sup>4</sup> This affects an individual's ability to remember and think coherently. Consequently, the medication would be recommended to patients within the first or mild stages of AD to obtain maximal benefit. This will aid in reducing the damage done by amyloid beta plaques, slowing down the path to dementia and deterioration.

The final push for the FDA to approve lecanemab using the Accelerated Approval Program was Eisai's phase 3, eighteen-month, double-blind, placebo-controlled trial. This study was conducted with patients ranging from the ages 50 to 90, involving 1,795 patients with early AD.<sup>4</sup> Of the 1,795 patients, 898 were given lecanemab 10mg/kg twice a week while 897 were given placebo. The study was conducted in over 200 sites across North

America, Europe, and Asia. The primary endpoint was the change in Clinical Dementia Rating Sum of Boxes (CDR-SB) score from baseline at 18 months. To further assess lecanemab's functionality, changes from baseline in amyloid burden on Positron Emission Tomography (PET), AD Assessment Scale: Cognitive Subscale 14 (ADAS-cog142) score, AD Composite Score (ADCOMS) and AD Cooperative Study-Activities of Daily Living Scale for Mild Cognitive Impairment (ADCS-MCI-ADL) score. Higher CDR-SB, ADAS-cog142, and ADCOMS scores indicated greater impairment whereas the opposite was true of ADCS-MCI-ADL scores.<sup>4</sup> As seen in Figure 1, after 18 months, the use of lecanemab was shown to slow the rate of worsening AD within the beginning stages of the disease as compared to a placebo. There was an approximately 27% slower decline compared to the patients on placebo (CDR-SB difference: -0.45; 95% confidence interval [CI] -0.67 to -0.23;  $p < 0.001$ ). Lecanemab demonstrated consistency in efficacy across the other predefined subgroups as well. Even so, minor side effects arose, such as infusion-related reactions and amyloid-related abnormalities, occurring in 26.4% and 12.6% of the patients, respectively. Additionally, a previous phase 2b trial utilizing a Bayesian design proposed that the drug may be able to slow the rate of mental deterioration by 2.5 to 3.1 years while improving the quality of life of patients in early stages of AD along with the people surrounding them.<sup>5</sup> The results from these studies are what led the FDA to accelerate the approval of this drug.

Although the FDA has only just approved



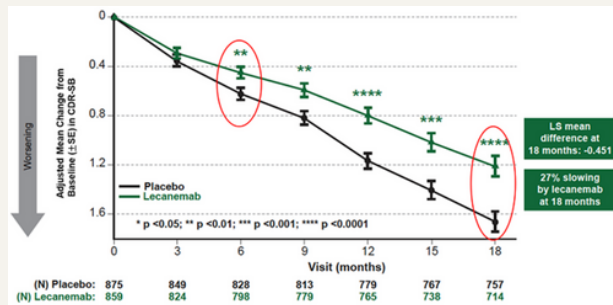


Figure 1. Primary Endpoint: Change in CDR-SB Score Over 18 months<sup>4</sup>

lecanemab, there has already been controversy surrounding the price that the AD medication will be marketed. Alongside came “Eisai’s Approach to U.S. Pricing,” which took the societal value of medicine into account for the new price of the drug.<sup>6</sup> The price of the drug was determined based on a wholesale acquisition cost goal of no more than \$26,500 a year for the average patient, weighing 75kg and receiving 10mg/kg IV weekly of lecanemab.<sup>6</sup> Eisai also addressed that once this medication become covered by insurance, approximately 91% of patients will be covered for this medication. The other 9% would have Medicare without supplemental insurance and would become responsible for 20% of the \$26,000 cost or \$14.50 a day.<sup>6</sup> This pricing approach seems reasonable for the medication’s value in the U.S.

The accelerated approval of lecanemab for AD by the FDA seems promising, despite the shocking price tag attached. In 2020, over 5 million Americans were living with AD, which is suspected to triple by 2060.<sup>1</sup> While also assisting health system sustainability, lecanemab would improve the quality of life of AD patients and their loved ones. Lecanemab will surely change the world of AD therapy for the better.

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## Meet the 2023-2024 Team Members



### Editorial Team & Production



**Isabelle Lim**  
**Editor-in-Chief**

The Rho Chi Post serves as a platform for students and faculty to collaborate in sharing their knowledge and ideas with the pharmacy community while offering a unique experience to develop writing skills outside of the classroom. As future pharmacists, it is important that we keep ourselves updated as well as voice our opinions on healthcare matters. I am honored to be a part of the Editorial Team and look forward to serving as this year's Editor-in-Chief!

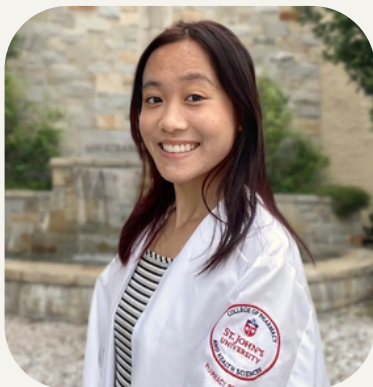
**John Ortiz**  
**Senior Content-Focused Copy Editor**

Rho Chi Post is an opportunity for students to foster their writing and investigative skills concerning the pharmacy practice. Through Rho Chi Post, students are also exposed to novel information and perspectives that are present in the pharmacy community and in our own student body. By honing our understanding of new innovations and developments in pharmacy, we will be better adept at providing accurate information to readers and maintaining the continuous education expected of pharmacists.



**Joanne Fung**  
**Senior Content-Focused Copy Editor**

To me, Rho Chi is a great opportunity for all pharmacy students to advance themselves. This society offers something to everyone, whether you are a member of the society, a part of the newsletter staff, or a student taking advantage of the resources offered by Rho Chi. The effort put forth by every person affiliated with Rho Chi is amazing, and I will always appreciate this society's mission and values.



# MEET THE TEAM



**Maliha Akter**  
**Content-Focused Copy Editor**

In my pursuit of becoming a knowledgeable and skilled pharmacist, I remain committed to staying informed about disease treatment and public-health policy. Being a part of Rho Chi Post provides an excellent platform for continuous education and knowledge-sharing with peers. Engaging with individuals from diverse backgrounds fosters critical viewpoints and discussions, all focused on enhancing patient-centered care. Additionally, the newsletter enables me to nurture my lifelong passion for writing while staying updated on the latest healthcare developments. As I embrace this transformative journey, I am dedicated to adapting, learning, and making a positive impact on patient well-being as a compassionate and competent pharmacist.

**Bao Qi Chen**  
**Content-Focused Copy Editor**

The Rho Chi Post is a bridge between students and the world we will soon enter once we graduate. My ambition is to promote intellect, values, and opportunities that not only allow students to be heard but also impact the pharmacy profession as a whole. I am honored to be a part of the Rho Chi Post's editorial team and work with colleagues who share this ambition. I am excited and grateful for this opportunity, and I look forward to working with everyone!



**Warda Basher**  
**Content-Focused Copy Editor**

Joining this esteemed team excites me with the opportunity to gain invaluable experience and insights into the latest trends in pharmacy. I am eager to expand my professional network and make significant contributions to the field. As a member of the editorial team, I'll be at the forefront of disseminating the most current news and knowledge, effectively impacting pharmacy professionals worldwide with timely and relevant information.

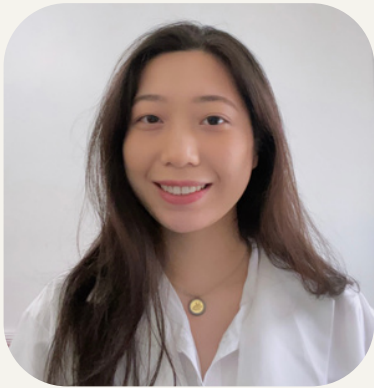


**Kristen Joy Mathew**  
**Content-Focused Copy Editor**

Being a part of the Rho Chi Post is a rewarding experience where I can work with other students and colleagues to bring forth educational and pertinent information in a renowned newsletter publication. This is a rewarding experience to express my passion for pharmacy and spread awareness of current issues. Collaborating with other students, faculty, alumni, and professionals, it is an incredible experience to continually learn from numerous perspectives and incorporate such experiences into a publication. Working as a Content-Focused Copy Editor, I am happy to be alongside this wonderful team in producing well-researched articles in a respected and widely read newsletter.



# MEET THE TEAM



**Mandy Zheng**  
**Senior Graphics-Focused Copy Editor**

The Rho Chi Post allows pharmacy students the opportunity to be well informed about the amazing contributions in the field of pharmacy. It is a great platform for students to report current advancements in healthcare. My passionate for writing began at a young age as I began to understand just how powerful words can be to communicate. I look forward to being a part of the editorial team and to share new information to my peers. I am so excited to be a part of the Rho Chi Post team.

**Ruksabha Zaman**  
**Senior Graphics-Focused Copy Editor**

It is an honor to be able to contribute to the Rho Chi Post, a publication that promotes intellect, values, and inclusivity in order to allow student voices to make an impact not only in our school but in the pharmacy profession as a whole. The role of pharmacists is constantly evolving and it is more important than ever for us to not only be aware of the changes and new discoveries that are occurring in our field of practice but to be able to collaborate with other professionals on our team as well. The Rho Chi Post serves as a bridge between students, faculty, pharmacists, and other healthcare professionals outside of the classroom. I look forward to gaining new knowledge on current events from my peers and providing my own insight to further the excellence of this newsletter.



**Celestine Van Sertima**  
**Graphics-Focused Copy Editor**

When applying to the Rho Chi Post, I was initially fascinated by their goals of providing the highest quality of information to the St. John's community through a student operated newsletter that cultivates both student spirit and expansion of knowledge. Through my passion for writing and health care, combined with my experience in graphic designing, I look forward to what I can contribute to the Rho Chi Post.



**Nalisha Xu**  
**Graphics-Focused Copy Editor**

By becoming a part of the Rho Chi editorial team, I wish to learn more about the pharmacy field and community by gaining insight through our publications. This position will not only allow me to broaden my views on the profession of pharmacy, but also explore topics related to the medical field as a whole. Through Rho Chi's team, I will utilize this experience to grow professionally, develop leadership skills, and be more involved in our community to improve my confidence and professionalism on my journey to becoming a pharmacist.



# MEET THE TEAM



**Zainab Masood**  
**Graphics-Focused Copy Editor**

Being part of Rho Chi Post, which provides information on discoveries and research to others, is an honor. Taking insight from professionals and peers to educate others is a rather significant effort in the expanding and evolving role of pharmacists. I look forward to collaborating with the team in pushing this effort further while also learning from them.

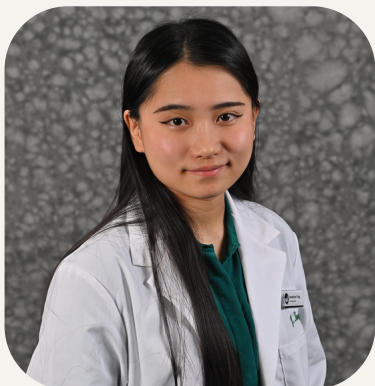
**Sana Ahmed**  
**Senior Staff Editor**

I believe Rho Chi Post is a means to serve the university and impact its professional and health-oriented student community through its various stories. With exposure to a myriad of areas of the healthcare field throughout my work experience, I have secured much knowledge from assisting a diverse array of patients. I will prioritize staying up to date and aiding student writers in presenting the latest pharmaceutical and medical advancements. Through Rho Chi Post, I intend to promote the pharmacy profession through creativity and effective communication. I am honored to serve as a Staff Editor for this organization and hope it will facilitate meaningful connections with my peers.



**Jennalynn Fung**  
**Staff Editor**

I am thrilled to have the opportunity to express my creativity, critical thinking, and research skills through contributing to the Rho Chi Post. The mission to promote intellectual discourse and showcase diverse perspectives aligns with my values; I look forward to putting my writing and editing experience to use in each issue, and hope that my involvement can ensure that future cohorts will also have this valuable platform available to them.



**Paulina Maczko**  
**Staff Editor**

As pharmacy students, I believe we have an obligation of staying informed on current healthcare topics, topics that the Rho Chi Post sheds light on. To be part of such a team is an honor, as students are granted the opportunity of a creative outlet, whether that is by writing the articles or organizing the newsletter. As a copy editor, I look forward to seeing first-hand how students voice their opinions, thoughts, and academic learnings. I'm grateful to be part of a team that allows students to understand what they are capable of, and simultaneously advance their writing, comprehension, and communication skills.



# MEET THE TEAM



**Shakhzoda Rakhimova**

**Staff Editor**

As a staff editor for the Rho Chi Post, I am thrilled to have the opportunity to be part of a team that is dedicated to providing high-quality and thought-provoking content that is relevant to pharmacists, healthcare professionals, and the broader public. I am excited to bring my skills and knowledge to the table as we work together to create meaningful and impactful content for our readers.

**Natalia Turowska**

**Staff Editor**

Joining the Rho Chi Post is an opportunity I am immensely grateful for! I am very excited to be a part of an award-winning publication that promotes the pharmacy profession through creativity and effective communication like the Rho Chi Post.

In being a Staff Editor, I look forward to reading about ideas, opinions, and innovations, as well as seeing these topics blossom into articles for others to enjoy. I know that throughout holding this position, I will grow in terms of professionalism, teamwork, and creativity, which are all key attributes in the pharmacy world!



**Sharupa Azmal**

**Staff Editor**

The Rho Chi Post serves as a notable forum for pharmacy students who wish to expose themselves to medical journalism. Being a staff editor of the Rho Chi Post means amplifying the voices of our writers and educating our readers regarding current events in healthcare. This role provides me with the opportunity to present insightful stories that are relevant to the pharmacy community and contribute to the advancement of the profession through writing.



**Nimra Gul**

**Staff Editor**

My name is Nimra Gul and I am currently entering my 6th year of the pharmacy program at St. Johns. Being involved in a cause that serves to educate those pursuing a career in the healthcare field allows me to contribute to the knowledge that these very people will utilize in practice. I hope that my time with the Rho Chi Post Editorial Team will be memorable with much to contribute!



# MEET THE TEAM

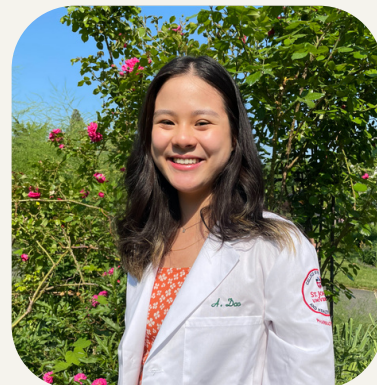


**Nancy Yousry**  
**Senior Staff Writer**

It was such an amazing opportunity to become part of Rho Chi Post's Editorial Board last year, and I am really excited to continue being a part of Rho Chi Post this year! I believe one of our responsibilities as Student Pharmacists is to be aware of the current events impacting our profession as well as the critical and unique role Pharmacists play in a variety of healthcare settings. As a Staff Writer and Engagement & Outreach Manager, I look forward to bringing these current events to light and to serve as an educational resource for passionate readers and writers alike.

**Ashley Dao**  
**Senior Staff Writer**

Rho Chi Post is an opportunity for students to be involved in publication regardless of their year or interest. I have always had an interest in writing and research, and I was afraid I would lose these skills in pharmacy school. Being part of Rho Chi Post has allowed me to continue writing and learning beyond the classroom!



**Sairah Sheikh**  
**Senior Staff Writer**

Ever since I was little, writing has always been a passion of mine. As a senior staff writer for Rho Chi Post, I am excited to merge the knowledge I have gained in pharmacy school with my love for writing to create thought-provoking pieces for our community to read. Since pharmacy is an ever-evolving profession, it is important for our community to stay informed on the latest events in our field and I am looking forward to playing a part in that as a member of the incredible Rho Chi editorial team,



**Urooj K. Malik**  
**Staff Writer**

The Rho Chi Post is a valuable platform that connects students and faculty with the most up-to-date information within the pharmacy profession. The field of pharmacy is constantly expanding with vital developments, so it is important for us to stay informed in the world of healthcare. The Rho Chi Post serves as a creative outlet for student pharmacists to voice their various perspectives and ideas for others to utilize as an educational resource. As a staff writer, I hope to channel my passions and interests through this newsletter in an effort to impact those around me.



## MEET THE TEAM



**John Ortiz**  
Staff Writer

Rho Chi Post is an opportunity for students to foster their writing and investigative skills concerning the pharmacy practice. Through Rho Chi Post, students are also exposed to novel information and perspectives that are present in the pharmacy community and in our own student body. By honing our understanding of new innovations and developments in pharmacy, we will be better adept at providing accurate information to readers and maintaining the continuous education expected of pharmacists.

**Anureet Kaur**  
Staff Writer

Professional writing is a powerful tool. As pharmacists, amongst many other things, we can use our writing to advocate for our profession, to summarize new guidelines, and to spread the word about novel drugs. Thus, being a part of the Rho Chi Post 2023-2024 Editorial Team will help me strengthen the skills I need to be a capable pharmacist in the future. I am very excited to contribute to RCP!



**Enjelique R. Adams**  
Staff Writer

Being a member of the Rho Chi Post will qualify and enable me to branch out to network and connect with others who are older than me and are a part of the Rho Chi Honor Society and others who are a U1, U2, or P1 who have an interest in writing. This opportunity that was blessed and given to me can expand my passion and love for writing to another level. Writing for this post can grant me the chance to learn more about my level of pharmacy through a different scope by reading about current events on insurance, Big Pharma, the FDA, and new medications coming out but also use the knowledge I have from my classes and working at an independent community pharmacy and apply it to my work. Rho Chi Post is an additional additive to the list of organizations and extracurriculars that I partake in; however, this is a new step to a new beginning for my P2 year that I cannot wait to take on.



**Holly Nguyen**  
Staff Writer

A symbol of great diligence and academic advancement, The Rho Chi Post is truly an inspirational newsletter supported by a network of talented students, faculty, and alumni. Previously a 2021-2022 Content-Focused Copy Editor, I provided crucial revisions to articles ranging from novel pharmaceutical products to real-time anecdotes in the field. Each writer carries a unique voice and a key message, from which I was able to ensure the writer's personal empowerment to the highest professional standards. Returning to the Rho Chi Post as a Staff Writer, I am thrilled to bring on my own take of creativity and communication in alignment with my interests post-graduation. I hope to stir at least one meaningful conversation by building upon catalogs of medical research and emphasizing the indispensable value of the PharmD.





# MEET THE TEAM



**Bhojranie Brahmanand**

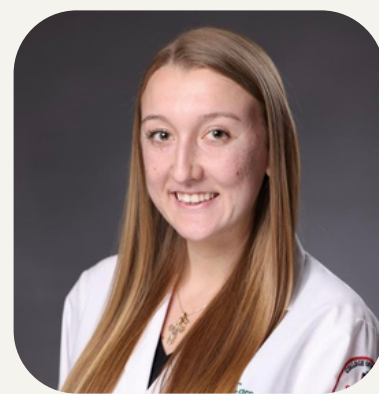
**Staff Writer**

The Rho Chi Post uses its platform to spread knowledge of groundbreaking discoveries that are changing the standard of care for society. It delivers a creative and innovative scope of the pharmacy world. As a school of pharmacy, it is pivotal to become aware of healthcare matters. In turn, we can strengthen our understanding of the field and become more competent pharmacy practitioners. I am excited to be joining the team this year as a staff writer. I look forward to working alongside like-minded individuals in cultivating writing pieces that will share the importance of this profession.

**Giavanna Carr**

**Staff Writer**

Rho Chi is a society with members who all have the same goal, which is to excel in their academic careers. As a member of this society, we use our skills and knowledge in order to better our education as well as assist our peers in the process. Being part of this society has been so rewarding thus far, and I look forward to further developing Rho Chi in my time with the organization!



**Sheena Nagpal**

**Staff Writer**

As the world is constantly changing in the world of medicine, it can be difficult as a pharmacy student to keep up. The Rho Chi Post is a way for students, educators and practitioners to stay up to date with new developments, discoveries and research. Thus, I am excited to be joining the Post as a new Staff Writer and to be a voice in the community to integrate new ideas and innovations so that we may advance as future pharmacists!



**Ariella Zadrina**

**Staff Writer**

As a pharmacy student and future pharmacist, I believe it is a quintessential duty to educate ourselves on current media regarding the medical field and continuously adapt to the new ideas we may face as we enter the pharmacy profession. With topics from emerging diseases to scientific advances made, it is important to be accustomed to new ideas that pertain to our potential responsibilities as a pharmacist. As a Rho Chi Staff Writer, I hope to discuss matters that will inform not only pharmacy students but the St. John's community as a whole on topics that have to do with general health and scientific developments. With my interest in writing and the pharmacy field, I hope to touch upon subjects passionate to me that can benefit our community and inspire our readers to integrate themselves into the ever-growing profession of pharmacy.



## MEET THE TEAM



**Ashley Medina**  
**Staff Writer**

It is an honor to be welcomed as a new member of a prestigious team of students contributing to the pharmacy profession through its publications that reach an audience beyond our campus. The Rho Chi Post has provided students with an opportunity to express themselves creatively and fosters professionalism through impactful communication. Joining the team will allow me to give back through writing that will embody the ideas and ambition that house my passion for the pharmaceutical profession. I am looking forward to providing relevant and up-to-date information to my audience and am eager to operate with fellow students to provide high-quality content that is devoted to the advancement and encouragement of our student body.

**Sandra Jojo**  
**Staff Writer**

Hi everyone, I am excited to join Rho Chi Post's team as a staff writer. As a P4 student who has read many of the articles published throughout my college career, I am motivated to write articles that inspire conversation among students. The Rho Chi Post gives students the freedom to research and learn about topics beyond the classroom setting. I am looking forward to conveying knowledge about new developments to other rising healthcare professionals in efforts to advance patient care.



# MEET THE TEAM

## Social Media & Outreach



**Anjali Thykattil**  
**Engagement & Outreach Manager**

I am beyond grateful for this opportunity, and I am excited to have the honor of serving on the Executive Board as the Engagement and Outreach Manager. The Rho Chi Post is not only a creative outlet for students, but also one that is invariably relevant to the ever-changing world of healthcare. In this position, I aim to further expand the growth of the Rho Chi Post among pharmacy students here at St. John's. Let's not forget, it is us students who will become the healthcare leaders of tomorrow.

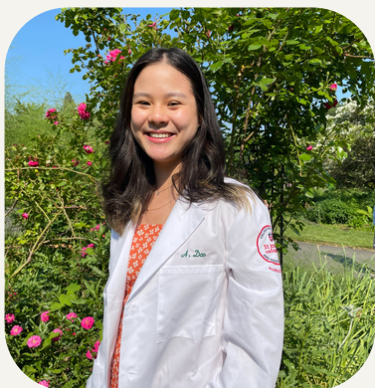
**Nancy Yousry**  
**Engagement & Outreach Manager**

It was such an amazing opportunity to become part of Rho Chi Post's Editorial Board last year, and I am really excited to continue being a part of Rho Chi Post this year! I believe one of our responsibilities as Student Pharmacists is to be aware of the current events impacting our profession as well as the critical and unique role Pharmacists play in a variety of healthcare settings. As a Staff Writer and Engagement & Outreach Manager, I look forward to bringing these current events to light and to serve as an educational resource for passionate readers and writers alike.



**Ashley Dao**  
**Engagement & Outreach Manager**

Rho Chi Post is an opportunity for students to be involved in publication regardless of their year or interest. I have always had an interest in writing and research, and I was afraid I would lose these skills in pharmacy school. Being part of Rho Chi Post has allowed me to continue writing and learning beyond the classroom!



## Advisors



**Dr. Elsen Jacob**  
**PharmD, MS, BCPS, BCGP, CPPS**

As the faculty advisor for the Rho Chi Society and Rho Chi Post, I've had the opportunity to work closely with exceptional students who have a genuine passion for learning, service, leadership, and innovation. I look forward to what Rho Chi will accomplish this year!

**Dr. Joseph Etzel**  
**BS Pharm, PharmD**

Dr. Etzel has currently serves as the Rho Chi Honor Society's and Rho Chi Post's interim faculty advisor, and has been doing so since the 2022-2023 academic school year. Dr. Etzel is not new to our organization, as he has previously served as the faculty advisor for the Rho Chi Honor Society. He has been a huge influence to the success of Rho Chi in the past, and we look forward to continue working with him!



**Dr. Mohammad Rattu**  
**PharmD, BCOP, BCPS, BCGP**

I am thankful to have been the 2012 editor-in-chief of the Rho ChiPost newsletter, as well as on the 2019 alumni honor roll of the national Rho Chi organization. This is one of the most successful longitudinal projects at my alma mater, as evidenced by its decade-long persistence and teams of highly-motivated students. I remain available for professional support and assistance with the new year's initiatives.



# The Rho Chi Society

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## Executive Board



**Geraldine Ciaccio**

**President**

The Rho Chi Society prides itself on fostering intellectual achievement and cultivating professional development. It provides opportunities for students, faculty, alumni, and colleagues to expand their knowledge of pharmacy practice. Through events, seminars, and fundraisers, Rho Chi allows pharmacy students to develop leadership skills that are vital to the profession. I have learned valuable lessons about pharmacy and myself from Rho Chi thus far, and I am honored to be able to give back to the organization. I am humbled to hold such a position and work with a dedicated executive board.

**Javeria Amir**

**Vice President**

The Rho Chi Society is an organization that contributes to the development of intellectual leaders in pharmacy. Through this, Rho Chi Society fosters collaboration and initiatives to advance learning in the field of pharmacy. Being part of this organization has allowed me to reach out for help when needed, and continuously improve my skills as a future pharmacist. To be a part of the executive board that will continue to uphold these initiatives is an honor and responsibility I take on with pride. Wishing all a wonderful and successful academic year ahead of us!



**Anjali Rana**

**Secretary**

Being a part of Rho Chi has provided me with invaluable opportunities for professional development, connection, and mentorship. The society's commitment to academic excellence and ethical pharmacy practice has inspired me to strive for continuous improvement in my studies and future career. Serving on this year's executive board, provides a sense of belonging among a supportive and inclusive community.



**Giavanna Carr**

**Treasurer**

The Rho Chi Honor Society encourages and recognizes intellectual achievements, stimulates critical inquiry in order to advance the future of pharmacy, provides its members with the ability to develop into intellectual leaders, promotes high ethical standards for its members, and fosters collaboration. Through being a member of Rho Chi, we are able not only to grow ourselves, but to help uplift our colleagues and allow them the chance to excel academically through the events we provide. Rho Chi has been a great influence on my studies during my time in this program and being given the opportunity to serve on the executive board allows me to become the influence for the younger students in our program. I'm inspired by every member of this year's executive board and can't wait to see all we're able to accomplish together this year!



# The Rho Chi Society

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## Executive Board



**Christine Mauceri**

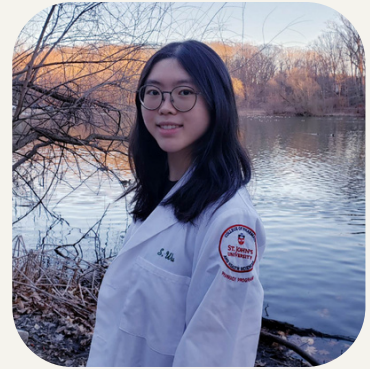
**Historian**

Rho Chi is an amazing organization that encourages leadership and support among its members. Not only does it offer a space where all pharmacy students can help each other academically, but the opportunities for networking and professional growth are endless. I am proud to be a part of an organization that has helped me immensely throughout my studies, and I am excited to give back to my pharmacy community!

**Sammi Wu**

**Development and Outreach Coordinator**

The Rho Chi Society is committed to the development of future pharmacists that excel in both areas of professional expertise and acts of service. It forms a community for pharmacy students to motivate each other's academic growth and provide support within a challenging degree program. It also keeps students informed on news related to breakthroughs in drug therapy and patient care. I am honored to accept my position on the executive board for this upcoming academic year and I hope to fulfill my duties so Rho Chi can continue to have its positive impact on the pharmacy profession!



**Daya Biju**

**Academic Committee Chair**

The Rho Chi Honor Society is a distinguished academic organization that recognizes excellence in pharmaceutical studies. It promotes ethical conduct, leadership, and research in pharmacy education. With chapters across the United States, Rho Chi fosters a sense of community and offers valuable networking and mentorship opportunities. Members actively engage in service projects to improve public health awareness. I am truly honored to serve this esteemed organization and embrace the opportunities it offers for personal and professional growth.



**Angel Gao**

**Academic Committee Chair**

Rho Chi fosters a community where students can collaborate with each other, upholding the core principles of service and professional development. Being a part of this supportive community is an honor, and I take pride in contributing to the culture of excellence that Rho Chi cultivates.



# RHO<sup>Rx</sup>CHI post

St. John's University College of Pharmacy & Health Sciences

## AUGUST

SUN	MON	TUE	WED	THU	FRI	SAT
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	<b>30</b>	31		

## SEPTEMBER

SUN	MON	TUE	WED	THU	FRI	SAT
					1	<b>2</b>
3	<b>4</b>	5	<b>6</b>	<b>7</b>	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

**Aug 30:** First day of classes

**Sep 2:** No classes

**Sep 4:** Labor Day - University closed/No classes

**Sep 6:** Last day to add/drop classes

**Sep 7:** Org Fair @ 12PM

**The Rho Chi Post wants to wish everyone a great start to the semester!**

## Interested in writing for the Rho Chi Post?

Go to <http://rhochistj.org/RhoChiPost> and click on the login option from the menu bar to make an account! With an account, you'll have access to the article submission portal where you can submit your writing for publication in an upcoming issue!

**Remember, you do NOT have to be a member of Rho Chi, a member of the editorial team, or a student of St. John's to write for our newsletter!**

If you have any questions, feel free to email us at [rhochipost@gmail.com](mailto:rhochipost@gmail.com)!