

# RHO<sub>Px</sub>CHI POST

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A student-operated newsletter by the St. John's University Beta Delta chapter

RHOCHISTJ.ORG

## SINGLE-LINE STORIES

- October is American Pharmacists Month! Know your MEDICINE. Know your PHARMACIST.
- Our Rho Chi 2011 Annual Chapter Report was submitted earlier this year. It is now online at <http://rhochi.org>
- After the General Body Meeting, sweatshirt designs have spurred some discussion. Vote for your favorites on Facebook.
- Mock Residency Interviews will be held later this month. Stop by and receive feedback on your techniques.
- Healthy Halloween is a great teaching opportunity for all students. Contact any of the pharmacy organizations for details.
- The second-annual "Who Wants to be a PharmD?" game is coming in November 2011. Start forming teams and win big!
- This year, the ASHP Midyear Clinical Meeting is in New Orleans, Louisiana. It will take place from December 4<sup>th</sup> to 8<sup>th</sup>.

## A MESSAGE FROM THE PRESIDENT



On behalf of the Rho Chi Honor Society Beta Delta Chapter, it is with immense pleasure that I present to you our monthly newsletter publication, Rho Chi Post. The Rho Chi Honor Society, which is the only national pharmacy honor society of its kind, works to create and recognize lifelong intellectual leaders in pharmacy. The society aims to instill the desire to pursue intellectual excellence and critical inquiry to advance the profession. Rho Chi Post is aimed at serving as a method for achieving this ultimate goal.

I welcome you, our pharmacy community at St. John's University, to experience a one of a kind monthly newsletter that will serve as a source of information and knowledge to broaden your perspectives beyond the classroom: Rho Chi Post.

Rho Chi Post will provide you with up-to-date information on local events, current pharmacy news (including but not limited to new drug shortages, medication, clinical studies, and reported adverse effects), individualized interviews with faculty and students, crossword puzzles, letters to the editors, polls, and much more. Rho Chi Post will also serve as an excellent platform for professional dialogue between students and faculty members. Simply, there are endless benefits for our readers.

Our current editorial team consists of devoted students and faculty, all who are fueled by a passion to serve their profession and a drive to make our readers become the leaders of tomorrow. I encourage you to enthusiastically read and to feel free to contact us for any further information.

You can email us at [rhochis@gmail.com](mailto:rhochis@gmail.com) or visit our chapter website at <http://www.rhochistj.org>. Of note, our Letters to the Editor section allow readers to voice their opinions and bring up pertinent issues!

Lastly, we aim to publish and distribute Rho Chi Post during the first week of every month. We will also maintain an archive for all of our publications on our website.

Thank you for your time, and keep reading!



Mohamed Dungersi  
President of the Rho Chi Honor Society Beta Delta Chapter

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## FACULTY SPOTLIGHT: DR. PARNALI CHATTERJEE BY: EBEE P. SOMAN



Meet Dr. Parnali Chatterjee, a new faculty member in our St. John's University family. I had the opportunity to meet Dr. Chatterjee at the doctoral seminar hosted by Dr. Lin Mantell entitled, "Drug Metabolism and Pharmacokinetics in Drug Discovery and Development."

I was introduced to Dr. Chatterjee through Dr. Frank Schanne, and had the wonderful opportunity to speak to her about her professional background and her vast experiences in industrial pharmacy. What better way to welcome the new Assistant Professor in the Department of Pharmaceutical Sciences than to be featured in Rho Chi Post?

Dr. Chatterjee is a pharmacist from the University of Mumbai. She attained her PhD in Pharmaceutical Sciences from the University of Louisiana at Monroe. She majored in Natural Products and Medicinal Chemistry. Dr. Chatterjee began to focus on isolating and identifying metabolites derived from bacteria and fungi. She worked at the University of Utah as a post-doctoral research associate, focusing on drug-drug interactions, especially in the pediatric patients. She joined Hoffmann-La Roche in 2003 where she started her first industry job in the Non-Clinical Drug Safety Department as a Drug Metabolism (DM) project representative and worked in her research role developing *in vitro* - *in vivo* correlations for various compounds. Dr. Chatterjee then joined Celgene Corporation in 2006, and continued her work in Drug Metabolism and Pharmacokinetics (DMPK) and bioanalysis of drug metabolites.

Soon afterwards, she worked for one semester at Kean University to familiarize herself with the academic field and to see if it was something that interested her. Dr. Chatterjee then joined MPI Research, Inc in 2009, where she worked together with numerous scientists to ensure the ADME (absorption, distribution, metabolism, and excretion) profile of avanafil, a phosphodiesterase type 5 inhibitor similar to sildenafil (Viagra®, Pfizer).

She joined St. John's University in August of 2011 to continue her role as a professor while pursuing DMPK research in her own lab.

Recently, I asked Dr. Chatterjee some questions regarding the pharmaceutical industry.

**Q: You were a Principal Scientist at Hoffman-La Roche. What did that position entail?**

*A: In the industry, titles do not mean anything, it is the actual job content or the work you are doing that matters. With titles and positions, you tend to have more responsibility such as project manager and lab head and people working under you but in the end, you are cooperating with various groups, departments, and fellow researchers on a specific project. Every company has its own bureaucratic layers so you can expect to find different organizational structures with varied work environment but it's your specific project that matters. In a big company, work is more structured and the researchers are very focused on their own specific work. It is very normal for a researcher to spend 37 years doing only *in vitro* to *in vivo* correlation for compounds.*

**Q: What is the drug development phase like in the industry?**

*A: In any given time, a company is working on a vast array of studies for a staggering amount of drugs. For a small to medium sized company, it is perfectly normal to spend \$100-\$200 million dollars on drug development and of course this figure will change for the bigger companies. For a clinical candidate to be selected by a company, it generally takes 3-4 years with numerous scientists working on various phases of the project.*

**Q: Are there any developing trends in the industry for drug discovery?**

*A: Companies are now starting to "outsource" this phase of drug development to contain costs. They are mostly letting third parties carry out bioanalytical work and the initial preclinical selection of a compound from vast array of natural or untested compounds. This is simply due to the time constraints, the length of time it takes to find an adequate candidate for further DMPK studies and later for clinical studies. The outsourcing is actually more cost effective for companies in the long run.*

**Q: How are *in vitro* - *in vivo* correlations made for a specific compound?**

*A: We use an *in vitro* system, specifically animal models, to attain data sets in the preclinical stage. We use the hepatocytes from five different species such as rats, dogs and other animals to identify the metabolites and PK parameters of the drug. We use one rodent species like a rat, one non-rodent or non-human primate species like monkey or dog and the human cell types. The models that are somewhat similar to the human hepatocyte data with regards to the metabolites produced and PK parameters are chosen for generating safety data.*

**Q: What made you switch between companies and eventually to become a faculty member?**

*A: I wanted to branch out and work on new challenges. This is why I joined Celgene Corporation in 2006, a company famous for the thalidomide drug that was withdrawn during the 1960s*

for teratogenicity. This company was a great opportunity for me because I was able to set up the DMPK and bioanalysis operations for the company. Bioanalysis refers to the quantitative measurement of drugs and their metabolites and biological molecules in biological fluids. Going from the industry to faculty was a big jump for me because I did not teach before; however, the lab work is the same.

**Q: Can you discuss anything particular you are working on in your lab?**

A: In the lab, we are looking mainly at DMPK related studies including drug-drug interactions and transporter drug-excipient interactions. Many times, we have drug formulations with excipients in them and we are not sure what their effects are. We are looking to see how the excipient reacts with the drug, if it has any effects on the body, and if it can cause any adverse effects. We are also interested in improving the bioavailability of certain water-insoluble drugs using excipients that are solubility and bioavailability enhancers.

**Q: You mentioned drug development as an expensive process. Can you comment on the need to balance the patent rights of companies with the need to make cheaper drugs available to the poorer nations in this world?**

A: This is a very good question. I remember that we (industry) used to fight for patent rights. When I was at La Roche, the company was fighting with Cipla for enfuvirtide (Fuzeon®, Trimeris and Genentech) patent rights. This is a very complicated issue. Cipla is doing a great job of providing drugs cheaply for people who cannot afford them, and it is a great humanitarian gesture. However, someone has to make the drugs and it is not a cheap process. Drug development and new treatment procedures will begin to lag behind. Already we are seeing a big shift in drug discovery and the development paradigm, with a big push for cost containment. Companies are realizing that the traditional models for research and development are no longer profitable. We are seeing smaller companies working on preclinical research and developing a drug candidate and letting the bigger companies do the clinical trials. If companies lose the patent rights, they are not able to recoup the money. The companies lose millions in failed tests to find a single drug candidate that can pass a Phase II trial. So, without the patent to guarantee that they will recoup

such costs, companies will not have incentives to develop a new drug.

**Q: We have seen a drop in Research and Development (R&D) during the past decade. Can you suggest an alternative to the traditional R&D model that might work better?**

A: I think if academia works together with industry for the drug discovery and development phases, we can make a difference in the R&D process. Already, academia is involved with research that deals with specific drug targets and mechanisms of action in disease models. The basic research is already done at the university level. So, if the collaboration between academia and industry can be strengthened, we can reduce the upfront drug development costs. We can select better drug candidates that are more tailored to a disease model with specific drug targets. It will reduce some of those initial costs, as the drug discovery process will be streamlined.

**“... if academia works together with industry ... we can make a difference in the R&D process...”**

**Q: What advice, if any, would you give pharmacy students regarding the industry setting?**

A: Try to understand what it is like to work in the industry. It is very different from the traditional roles as a pharmacist. I highly recommend that students do rotations in the industry and perhaps obtain a summer internship or job at the industry. As I discussed above, it involves much focused work and it is better to have an idea of how that will be like before you graduate.

You can find Dr. Parnali Chatterjee in the same office as Dr. Frank Schanne in St. Albert's Hall, 2<sup>nd</sup> floor. She is interested in working with students who would like to learn more about Drug Metabolism and Pharmacokinetics research. Please stop by her office and inquire about working in her lab if you are interested. Additionally, you may email her at [chatterp@stjohns.edu](mailto:chatterp@stjohns.edu)

**Do you have something to say?**  
**Write to our editors at**  
**[rhochis@gmail.com](mailto:rhochis@gmail.com)**  
**and we will feature your**  
**response in our next edition!**

## RHO CHI POST (RHOCHISTJ.ORG)

### EVENT SPOTLIGHT: RHO CHI GENERAL BODY MEETING BY: MARIE HUANG

On September 22<sup>nd</sup>, members of Rho Chi gathered in Sullivan Hall Room 306 for the first **General Body Meeting** of the semester. As President Mohamed Dungersi stepped to the front of the room and reintroduced the executive board, students quietly helped themselves to scrumptious, hot slices of Domino's Pizza, and retreated to their seats. What was the main focus of this meeting? Upcoming events! With **Pharmacy Organization Day** on October 20th in the CVS Lounge, what better time is there than now to get involved?

This month, Rho Chi is hosting a series of **Mock Residency Interviews** on October 26th. If you're looking to polish those interpersonal communication skills in time for the ASHP Midyear Clinical Meeting, this event presents the perfect opportunity. Held in St. Albert's Hall, these interviews will last approximately five minutes and will be led by St. John's very own faculty members! These personal mock sessions will serve as great practice for the real deal; participants can expect to receive one-on-one feedback and advice on ways to improve their techniques.

Of course, the last week of October would be no fun if it weren't for Halloween! Annually, student pharmacists and organi-

zations across campus unite to teach elementary school children (from St. John the Baptist) what it means to make healthy choices on a holiday centered on sugary sweets, while engaging in traditional Halloween activities. On October 28th, **Healthy Halloween** is your chance to provide a service to your community by giving these kids something to celebrate – their well-being.

Come November, Rho Chi will also be hosting its second annual game show, "**Who Wants To Be A PharmD?**" Students of all years may form a team, with a maximum of three members, to compete for the ultimate title of student pharmacist genius. Fourteen clinically-based questions will be posed, three lifelines will be given (call a pharmacist, consult a textbook, and ask the audience), and epic prizes will be won. Stay tuned for more details in our next issue!

Questions and concerns can be addressed to any member of the Rho Chi E-Board. If you have a brilliant idea for a future event, do not hesitate to contact us!

Happy American Pharmacists Month!

### IN THE NEWS: TNF-ALPHA INHIBITORS RECEIVE MORE WARNINGS BY: EBEBY P. SOMAN

TNF-alpha inhibitors are drugs used to treat rheumatoid arthritis, Crohn's disease, and ulcerative colitis, as well as other disease states. These agents suppress the immune system and increase the risk of developing serious infections.

Currently, there are five approved drugs in this category:

- Adalimumab (Humira®, Abbott)
- Certolizumab pegol (Cimzia®, UCB)
- Etanercept (Enbrel®, Amgen/Pfizer)
- Golumumab (Simponi®, Janssen)
- Infliximab (Remicade®, Janssen)

Specific bacteria have been identified as opportunistic pathogens in patients who are treated with TNF-alpha inhibitors. These include mycobacteria (causing tuberculosis or TB), hepatitis B (and other viruses), and fungi (causing aspergillosis, candidiasis, and pneumocystosis). The US Food and Drug Administration (FDA) asked manufacturers of these medications to provide boxed warnings for the risk of infections. In 2008, it warned of the risk for histoplasmosis and other invasive fungal infections associated with the use of TNF-alpha inhibitors. The FDA then asked manufacturers to also add this information to the boxed warnings.

Now, the FDA is asking makers of TNF-alpha inhibitors to add two more fatal bacterial infections to the list. The announcement came after a retrospective analysis of the FDA's Adverse Event Reporting System (AERS) on bacterial infections in patients who were treated with TNF-alpha inhibitors with or without another immunosuppressant. From 1999 to 2010, the FDA found case reports of patients developing Legionella

pneumophila (the cause of legionellosis or Legionnaire's disease) after receiving these drugs. Another AERS review, along with post marketing surveillance data of these drugs, revealed a prevalence of Listeria infections. The FDA also ordered the boxed warnings to provide consistent information with all pathogens listed to enable healthcare providers to identify and treat these patients before they develop further complications.

**“... the FDA also ordered the boxed warnings to provide consistent information with all pathogens ...”**

The FDA is advising physicians, pharmacists, and other healthcare professionals to weigh the risks and benefits of this therapy. Patients with the highest risk of developing drug-induced complications or infections are the elderly (> 65 years of age) and those taking concomitant immunosuppressants. Among other infections, patients should be tested for latent and active TB, as it is possible to develop TB even after testing negative for a latent infection. Due to these concerns, medical professionals are encouraged to continue monitoring patients after discontinuation of treatment.

**Primary source:**

**Lowes, R.** (2011, September 7). TNF Blockers Get Boxed Warning on 2 Bacterial Infections. Medscape. Retrieved from <http://www.medscape.com/viewarticle/749273>

## LEGISLATIVE UPDATE: MAIL-ORDER VS. COMMUNITY PHARMACY BY: MAHDIEH DANESH YAZDI

Once again, Albany is in the setting of a fierce debate on pharmacy. On June 15th, 2011, the New York State Assembly passed Bill 5502, which would forbid insurance companies from mandating the use of mail-order pharmacies for patients under their medication plan. Bill 5502 specifically mandates that medication plans cover prescriptions filled at a community pharmacy at a cost equal to prescriptions filled at a mail-order pharmacy. They are instructed to stop charging extra fees to costumers for using community pharmacies, as long as the community pharmacy charges a price “comparable” to that of a mail-order pharmacy for the medications. The New York State Senate has also passed the bill. It will now have to be signed into law by Governor Andrew Cuomo in order to go into effect. Governor Cuomo has not yet announced a position on the bill; instead, he is waiting until the bill reaches his desk to comment on the issue. Proponents and opponents are lobbying fiercely to make their perspectives heard by the governor.

The bill is strongly supported by the National Community Pharmacists Association (NCPA), which wrote a letter encouraging the governor to sign it once it reaches his desk. The NCPA argues that community pharmacies are more accessible to patients and that if patients had a choice, most would prefer to use a community pharmacy as opposed to a mail-order pharmacy. They also point out the importance of pharmacists and their accessibility in a local setting. Pharmacists are allowed to provide the extra face-to-face care that may be advisable in certain patient populations that are more prone to medication errors (e.g. the elderly).

**“... if patients had a choice, most would prefer to use a community pharmacy ...”**

Many, however, oppose the bill on grounds of concern for consumers. The main argument against the bill is that it would

raise costs for patients. This was recently confirmed by the Federal Trade Commission (FTC); it predicted that enactment of the bill would, in fact, reduce competitiveness among pharmacies to keep their prices low. Also, many mail-order pharmacies only offer competitive prices if they meet a certain volume. By providing patients the option to fill their medications at community pharmacies, these quotas may not be met. Mail-order pharmacies will then be forced to raise their prices to compensate for the lost business. Filling a prescription is much cheaper at a mail-order pharmacy than a community pharmacy, adding to the cost-saving measure. From a more clinical perspective, opponents to the bill also argue that adherence rates have been better with mail-order pharmacies. In an article published in the American Journal of Managed Care, patients were 25% more likely to fill their prescriptions and 6% more likely to take them as directed when they used a mail-order pharmacy.

Both, proponents and opponents of this bill, make important arguments that we should take into consideration. Community pharmacies, particularly independent community pharmacies, have been struggling in recent years. Insurance policies that mandate the use of mail-order pharmacies siphon the much-needed revenue stream from community pharmacies. This is particularly true when mail-orders are mandated for the purchase of maintenance medications, as these are the main sources of revenue for community pharmacies. However, consumer welfare is a very important consideration. If patients cannot afford to pay for their medications, it is detrimental to both, pharmacies and patients.

The coming weeks will reveal more about whether the Assembly will pass the final version of the bill and whether Governor Cuomo will sign it into law.

Feel free to send in your opinions on the issue.



## SPEAKER SPOTLIGHT: A DOSE OF REALITY WITH LAURA CRANSTON BY: EBEE P. SOMAN



During a seminar held by the Career Center on September 30th, 2011, I had the opportunity to hear Mrs. Laura Cranston. She is a pharmacy graduate of St. John's University (class of 1984) and a former Executive Resident of the American Society of Consultant Pharmacists (ASCP). Dr. Robert Mangione, Dean of the College of Pharmacy and Allied Health Professions, attributed many of the changes in pharmacy profession and the resources available to students, such as SimMan® (Laerdal) in simulation LAB, as the result of her work.

During her presentation, Mrs. Cranston presented a unique field in pharmacy that many students do not think about: advocacy. Pharmacy advocacy is an important part of our profession that deals with upcoming legislations, the creation of professional standards/requirements, and business.

**“... advocacy is an important part of our profession ...”**

Mrs. Cranston was inspired to become a pharmacist when she started working as a technician at a local Genovese drug store (now Rite Aid). Her pharmacist, Howard, had a great rapport with his patients, and she was impressed with such interpersonal relationships in a healthcare setting. Over time, she realized that relationships deteriorated as the prescription volume increased and the modern-day, busy retail pharmacy business model replaced the traditional, patient-friendly pharmacy setting. This helped her realize that community pharmacy may not be her career path. She opted to join the industry setting after a guest speaker explained the possible career possibilities it had.

After a short time in the industry, she moved onto the organizational setting. Currently, Mrs. Laura Cranston serves as the Executive Director of the Pharmacy Quality Alliance (PQA), Inc. She is very active within the pharmacy community,

and currently serves as the Chair of the Advisory Council of the St. John's University College of Pharmacy and Allied Health Professions, the Washington D.C. Alumni President of the St. John's University chapter, and on the Board of Governors for the University.

She reminded us of a few things that we need to be mindful of to be successful in our profession. First and foremost is networking. Mrs. Cranston reminded us how small the pharmacy world is and how it is important to begin networking with people right away.

One great opportunity is the Alumni Insider's View in Washington D.C. On October 19 through 21, students will have the opportunity to meet with St. John's graduates who hold key positions in some of the nation's top industries (legal, healthcare, business, and education) and pharmacy associations. This is important to gain access to residency sites and to meet with individuals who are on the forefront of policy development in pharmacy and healthcare. Many representatives from the pharmacy industry will also attend.

Dr. Vibhuti Arya, over a decade ago, met Mrs. Cranston at Alumni Insider's View in Washington, D.C. Over the past years, Dr. Arya has stayed in touch with Mrs. Cranston, and she always attends the Alumni Insider's View in D.C. simply to network with new people. It is a classic example of networking: meeting people and staying in touch with them as you progress through your career.

Mrs. Cranston also asked us to get involved in various pharmacy organizations on campus to drive policy development within that organization. For instance, in the National Community Pharmacist's Association's (NCPA) Nashville convention, students from various pharmacy schools compete in the Business Plan Competition. The Business Plan Competition helps young pharmacy entrepreneurs develop the blueprints necessary for purchasing a new or existing independent community pharmacy. Whether one wins or not, the competition is a platform for young pharmacy students to be vocal. With their ingenuities and business skills, students may be recruited by top organizations/agencies.

The next important things are to have a professional mentor and envision where you will be within the next five years. To have goals, and to pursue them, requires a certain passion. As Mrs. Cranston mentioned, without passion, you cannot succeed in this profession.

We are fortunate to have alumni, like Mrs. Laura Cranston, who will continue to drive pharmacy policy and inspire younger generations of pharmacy students to develop meaningful goals for their careers.

## CLINICAL UPDATE: HEART FAILURE & OSTEOPOROSIS-RELATED FRACTURES BY: MAHDIEH DANESH YAZDI

Heart failure is a condition in which the heart cannot pump blood efficiently to adequately perfuse tissues. It is often associated with serious consequences, such as kidney failure, liver damage, heart attack, and stroke. Patient care is focused on preventing these complications. Recently, attention has turned to other concerns: studies have shown an increased risk of osteoporosis-related fracture in patients with heart failure.

At the 2011 Annual Meeting of the American Society for Bone and Mineral Research, researchers from the University of Alberta presented evidence of an increase in osteoporosis-related fracture risk in those with heart failure. Researchers found that in those diagnosed with heart failure, the risk of fracture was 10% as opposed to 5% in those who did not have heart failure. The increased risk of fractures remained true even after the data was adjusted to account for other co-morbid conditions, risk factors, and total hip bone mineral density. When asked whether the drugs taken for heart failure (e.g. ACE inhibitors, beta-blockers) could potentially be responsible for the increase in fracture risk, researchers indicated that despite adjustments made based on beta-blocker therapy, the data still persistently showed the increased risk of fractures. The researchers warned that clinicians must be wary of the dangers that a fracture presents in a patient with heart failure, as these would be more difficult to treat due to the multiple co-morbid conditions often present in patients.

Another study published in the American Journal of Medicine also revealed that there was a slight increase in the number of fractures in those with heart failure. Using information obtained in the Rochester Epidemiology Project, the researchers assessed the

risk of fractures in patients with heart failure in Olmstead County, Minnesota. Both, patients with a fracture prior to a diagnosis of heart failure and patients with a fracture after a diagnosis of heart failure, showed an increased risk of an osteoporosis-related fracture. However, this was only true of an increase in hip fractures. There was no increased risk of other fractures in the heart failure group.

Although these studies were not definitive in their conclusions, they did warn against neglecting other, less serious but still dangerous, complications associated with heart failure. Particularly, hip fractures should be examined thoroughly, as they are very frequently seen in these patients. Co-morbid conditions are also of great concern. Those who suffer from heart failure are often older and frailer.

For clinicians, the added risk of fracture attributable to heart failure urges greater awareness.

### Primary Sources:

**Gerber Y, Melton LJ 3rd, Weston SA, Roger VL.** Osteoporotic fractures and heart failure in the community. *Am J Med.* 2011 May;124(5):418-25.

**Lyons KJ, Majumdar SR, Ezekowitz JA.** The unrecognized burden of osteoporosis-related vertebral fractures in patients with heart failure. *Circ Heart Fail.* 2011 Jul 1;4(4):419-24.

**Melville, NA.** (2011, September 20). Heart Failure Associated With Fracture Risk. Medscape. Retrieved from <http://www.medscape.com/viewarticle/750022>

## A LETTER FROM THE RHO CHI POST STUDENT EDITORS

Dear Readers,

The Rho Chi Post is a new publication by the St. John's University Beta Delta chapter, and we are always looking to engage with each of you. If you are a talented cartoonist or have a passion for art, feel free to contact one of the editors. We are looking to start a comic piece for each issue. It is a great way to express yourself and earn a spotlight for your artistic skills while drawing attention to an aspect of pharmacy profession.

Can't draw? No problem, take pictures instead! We need photographers who can attend campus events and seminars that are related to healthcare or pharmacy profession. Please feel free to send us the pictures with one or two paragraphs explaining the event and we will feature you in our newsletter. Perhaps you have a passion for writing; if so, feel free to write to us in response to an article you read. We love to see knowledgeable and insightful "Letters to the Editor." Even if it is just a question or a few comments on an article, email us!

Don't like what you see in the newsletter? Then let us know! Tell us what you would like to see in the newsletter, what topics you are interested in, and/or if you wish to read more about a specific topic. The newsletter is for you; so, your feedback is very important to us. We love to hear from faculty and staff as well.

This is a commitment-free way to stay involved with pharmacy profession. Contributing to our newsletter does not obligate you to contribute to every issue. We are more than happy to have guest authors and talented students work with us whenever they are available or free to do so. Of course, not all submissions will be accepted; we will only publish content that is deemed relevant for our newsletter.

If you have any questions, comments, and/or concerns, email us at [rhochis@gmail.com](mailto:rhochis@gmail.com) or contact a specific editor.

With much thanks,

*MAR, EPS, MCV, MSH*

Student Editors of Rho Chi Post



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## OCTOBER IS AMERICAN PHARMACISTS MONTH (APhM)!

### ON YOUR FACEBOOK, SHARE THESE 31 FACTS ABOUT PHARMACY: ONE FOR EACH DAY IN OCTOBER

1. Did you know that October is American Pharmacists Month? Know your MEDICINE. Know your PHARMACIST.
2. Did you know that many medicines require close checking and dose changes? Pharmacists in health-systems are trained to track how your medicines are working and adjust based on the type of medicine and your needs.
3. Did you know that pharmacists can give vaccines (immunize) in all 50 states, the District of Columbia, and Puerto Rico? ([www.pharmacist.com](http://www.pharmacist.com))
4. Did you know that many pharmacists hold Doctor of Pharmacy (PharmD) degrees, like a physician holds a Doctor of Medicine (MD) or a professor holds a Doctor of Philosophy (PhD)?
5. Did you know that Medication Therapy Management (MTM) services can be provided by pharmacists to help you get the most out of your medicines and most effectively treat your health conditions?
6. Did you know that pharmacy is practiced in many health care settings? This includes community pharmacies, hospital pharmacies, nursing homes and long-term-care facilities, managed care, and the joint forces.
7. Did you know that pharmacists can also help you with your over-the-counter medicines? Ask your pharmacist if you need help finding a non-prescription medicine that's right for you.
8. Did you know that through APhA-ASP's Operation Immunization, student pharmacists have educated more than 80 million people about the importance of vaccines?
9. Did you know that pharmacists can also hold positions as teachers and faculty members? Many pharmacists choose to continue their education by earning an additional degree and teaching student pharmacists how to provide the best health care.
10. Did you know that side effects of medicines may be lessened if you ask a pharmacist how to manage them?
11. Did you know that ancient Babylon is the earliest example of practicing apothecaries? Apothecaries, the original pharmacists, recorded medical texts, complete with illness symptoms, prescription information, and directions for compounding. (Source: [www.pharmacy.wsu.edu/history/history01.html](http://www.pharmacy.wsu.edu/history/history01.html))
12. Did you know that poly-pharmacy means getting medicines from different pharmacies? Getting medications from the same pharmacy can reduce medicine interactions.
13. Did you know that pharmacists are important in teaching you how to correctly and safely use your medicine? Pharmacist counseling can lower hospital readmission rates by helping you get the most out of your medicine.
14. Did you know that student pharmacists educated over 8.7 million people through APhA-ASP's Operation Diabetes?
15. Did you know that you should tell your pharmacist about specific reactions you have to medicines (rash, difficulty breathing, etc.)? Sometimes it may not be a true allergy, and you could continue taking the medicine.
16. Did you know that clinical pharmacists working in health-systems use evidence-based medicine to help physicians choose the best drug for each person?
17. Every 39 seconds, an American dies from cardiovascular disease. Last year, student pharmacists screened more than 63,000 people and educated more than 1.7 million about heart disease prevention.
18. Did you know that clinical pharmacists round with physicians, nurses, and other health care professionals and review charts and medicines to ensure the best results while you are in the hospital?
19. Did you know that your pharmacist knows how your medicine works in your body, possible side effects, diseases it is used to treat, and how your body gets rid of it?
20. Did you know that trademarks on medicines date back to the year 500 B.C.E.? On the Mediterranean island of Lemnos, Terra Sigillata, or "Sealed Earth," was dug up yearly in front of government and religious officials, rolled into tablets, and stamped with a special trademark. (Source: [www.pharmacy.wsu.edu/history/history01.html](http://www.pharmacy.wsu.edu/history/history01.html))
21. Did you know that since 1997, student pharmacists have given more than 1 million vaccines through APhA-ASP's Operation Immunization?
22. Did you know that pharmacists can be Certified Diabetes Educators (CDE)? These pharmacists help people with diabetes manage their medicines and lifestyle to help them stay as healthy as possible.
23. Did you know that it takes an average of 6 to 8 years of higher education (4 years of which are in pharmacy school) to become a pharmacist?
24. Did you know that pharmacists may have a Collaborate Drug Therapy Management (CDTM) agreement with a doctor? This helps doctors treat many common diseases like diabetes, high blood pressure, and high cholesterol by choosing the right combination of medicines and doses for each person.
25. Did you know that APhA was founded in 1852 as the American Pharmaceutical Association and is the largest and oldest organization for pharmacy professionals?
26. Did you know that Pharmacist Eugene V. White of Berryville, VA pioneered pharmacist counseling by creating a patient care area in his store in 1960? The patient care based model was inspired by White's design and is currently used in today's pharmacies. (American Pharmacy, A Collection of Historical Essays. Edited by Gregory Higby and Elaine Stroud, 2005.)
27. Did you know that, even after graduating pharmacy school, a pharmacist never stops learning? Pharmacists must get several hours of continuing education each year in order to stay licensed pharmacists and provide the best health care.
28. Did you know that the Asheville Project in North Carolina proved that pharmacist-provided services lead to better patient health results? Pharmacists ran diabetes health education programs and gave counseling on medicine use, diet, and exercise to help patients with diabetes meet their goals.
29. Did you ever wonder what pharmacy school is like? Here are just a few of the basic science courses students must master in order to graduate: anatomy & physiology, pathophysiology, microbiology, immunology, biochemistry, biostatistics, medicinal chemistry...plus a few more "ologies." (ACPE Accreditation Standards and Guidelines for the Professional Programs in Pharmacy Leading to the Doctor of Pharmacy Degree.)
30. Did you know that pharmacists can specialize in a specific area of medicine? This requires one or two years of intense training after pharmacy school – a residency or fellowship – that allows the pharmacist to gain more expertise in that branch of medicine.
31. Did you know that pharmacists are the only health professional that have extensive training in medicines and how they interact with other medicines and your body? Know your MEDICINE. Know your PHARMACIST.

**Primary Source:** <http://www.pharmacist.com/aphm/>

## THE INDUSTRY: GENERIC DRUGS AND INTELLECTUAL PROPERTY RIGHTS BY: EBEE P. SOMAN

The World Trade Organization (WTO) and its member nations met in Uruguay in 1994 to establish international norms for trade, economy, and development. They developed the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which provided patent protection for pharmaceutical companies to make brand name medications and market those medications to the foreign market without fears of illegal or unauthorized production of generics. With the explosion of HIV/AIDS during the 1980s and the 1990s, countries struggled to provide affordable HIV drug combinations (or 'cocktails') to their populations. With the majority of the African continent facing a HIV/AIDS pandemic and countries being unable to provide treatment for their people, the WTO modified their TRIPS provision to allow its member nations to produce generic medications only during a national emergency.

The WTO's actions opened the flood gates. Brazil, India, and several African nations authorized the production of brand name antiretroviral drugs under this emergency clause. Companies like Merck, which produces efavirenz (Sustiva®), deeply contested these actions, claiming infringement of patent protection and the need for pharmaceutical companies to make money for developing new drugs. In essence, the pharmaceutical industry foresaw that the emergency clause would not be limited to simply HIV or other infectious diseases. The clause may eventually be used to allow the production of other medications. Drug manufacturers' suspicions were confirmed in 2008 when Thailand issued orders to make generic cancer medications after price negotiations with pharmaceutical companies failed.

The issue was pushed to the forefront again when the World Health Organization (WHO) stated that chronic disease account for 60% of the deaths globally, with a bulk of these deaths occurring in developing nations. The statement worried researchers because already it takes 10 to 15 years for drug manufacturers to research and develop an efficacious, safe, and financially-viable medication. United States patent laws include safety trials and research as part of the patent period. Drug manufacturers have no choice but to rush the drug onto the market to produce a profit and to recoup some of the research costs. However, most drugs never stay as brand names for a long enough time for the drug maker to recoup Research and Development (R&D) costs. Over the past decade, we have seen a sharp drop in R&D budgets for drug manufacturers.

On the other hand, the introduction of generic drugs has provided a safe and cost effective way for low income patients from all over the world to receive treatment. Countries like Brazil, China and India have emerged as the leaders in the world providing treatment for a wide range of diseases at a

fraction of the cost. A recent study by UNITAID titled "A lifeline to treatment: the role of Indian generic manufacturers in supplying antiretroviral medicines to developing countries" found that over 80% of antiretroviral drugs are donated or sold to poor nations at a low cost. India now provides 91% of pediatric anti-retroviral volume and is the "pharmacy" for the developing world.

**"... the introduction of generic drugs has provided a safe and cost effective way ... to receive treatment ..."**

The issue was again on the forefront during the United Nations meeting on September 2011. India and China announced plans to work together to develop generic biotech medications. They wished to include generics for drugs such as trastuzumab (Herceptin®, Genentech) for breast cancer, bevacizumab (Avastin®, Genentech) for colon cancer, Rituximab (Rituxan®, Genentech) for non-Hodgkin's lymphoma, and etanercept (Enbrel®, Amgen/Pfizer) for rheumatoid arthritis. The announcement resulted in an intense conflict between nations. Developed nations and the pharmaceutical industry fight for patent rights, while developing nations, like India and China, push for cheaper and more accessible generic medications. Already, an Indian company (Cipla Ltd) and a Chinese company (BioMab) have announced plans for a joint venture for biotech drug manufacturing. The pharmaceutical innovators and manufacturers have geared up for a showdown. Cancer, diabetes, and cardiovascular issues are the core, profit-generating components of the pharmaceutical industry, and companies are not going to give that up easily.

So, the question remains: what is the right balance to this dilemma that we are facing? How can we encourage R&D and allow drug manufacturers to recoup the costs, while providing low-cost, effective, and accessible medications to the third world nations? Feel free to send letters to the editors with your proposed solutions and other comments.

### Primary Sources:

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**Johnson, T.** (2011, August 3). The Debate Over Generic-Drug Trade. Council on Foreign Relations (CFR). Retrieved from <http://www.cfr.org/drugs/debate-over-generic-drug-trade/p18055>

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## STUDENT PHARMACIST STAR OF THE MONTH: SIBYL CHERIAN BY: MARIE HUANG



Every month, Rho Chi Post has the wonderful opportunity to sit down and talk to an inspiring leader among the student pharmacists here at St. John's – someone who is not afraid to stand apart from the crowd and can be the change he or she wants to see in the world. This October, Sibyl Cherian, a 5<sup>th</sup> year PharmD candidate, shares with us her stories and the importance of advocacy in our profession.

**Q: Tell me a bit about how you started becoming involved on campus. What influenced you to make that choice?**

A: I became involved at the start of my third year in the student chapter of the American Pharmacists Association - Academy of Student Pharmacists (APhA-ASP). With a few friends, I attended the annual meeting in Washington, D.C. that year. Spending a few days in our country's capital with pharmacists and student pharmacists from all over the nation spurred my interest in becoming involved on campus. I ran for a position as a Student Policy and Advocacy Network (SPAN) Liaison a couple of months afterwards and, upon getting the position, I realized how difficult being a SPAN Liaison would be.

**Q: Being a SPAN Liaison for our chapter must have been a great responsibility to hold. Can you please elaborate on why it was difficult for you?**

A: Well, not many people were aware or interested in what SPAN entailed. I realized I would have to be innovative in anything I decided to do. When we went to the APhA-ASP Midyear Regional Meeting (MRM) in Rhode Island last November, I sparked interest in students by having them come up with their own proposals to submit on what changes they would like to see in the profession. Although unlikely to pass, I added in a particular proposal from a fellow student to grant pharmacists the right to prescribe. Although highly controversial at the meeting, it nonetheless incited attention among our students!

**Q: So, this was during the fall semester. Considering how challenging it was to get students interested, how were you able to keep them engaged during the spring semester?**

A: I actually remember a proposal submitted, during the MRM, to legalize medical marijuana. I recall the enormous amount of controversy it caused among student pharmacists, and had thought that a

healthy and educational debate regarding this issue would bring students together. So, we coordinated with the Debate Society on campus, in order to reel-in students from other majors. The highly successful event became an active discussion afterwards, especially when students were allowed to voice their opinions about the pros and cons of legalizing medical marijuana. Our university's newsletter, The Torch, even wrote an article broadcasting the event.

**Q: That was an amazing on-campus event! But, as Liaison, how were you able to advocate off-campus? Did you actually have the chance to speak to any legislative members?**

A: Last March, I attended RxIMPACT Day in Washington, D.C. with two fellow colleagues. We met with various congressmen/women and discussed key bills that were being voted on, which would affect our future careers. After doing so, our leaders were much more informed about what our profession entailed. I brought these ideas back to our own state in an effort to push for Collaborative Drug Therapy Management (CDTM). On Pharmacy Day in April, student pharmacists from all across New York State came together in Albany to advocate for pharmacy. A few months later, part of the bill for CDTM was actually passed thanks to the collaborative effort to advance the future of our profession.

**Q: If you could offer one piece of advice to other student pharmacists, what would it be?**

A: I have gone through my own uncertainties about how to make pharmacy my own. I am waiting for Advanced Pharmacy Practice Experience (APPE) rotations to give me a sense of direction to guide me to where my niche is. I want to continue to advocate and make our profession known and respected among health professionals, as well as among each and every patient we seek to help.

**“Our profession can only be as great as you make it.”**

Additional questions for Ms. Cherian can be directed to [sibyl.cherian07@stjohns.edu](mailto:sibyl.cherian07@stjohns.edu).

**Know an influential colleague with extraordinary accomplishments? Tell us at [rhochis@gmail.com](mailto:rhochis@gmail.com)!**

## PUZZLE: WORD SEARCH BY: MAHDIEH DANESH YAZDI

Find the generic/brand name of the following words. If the answer is two words, you may find them separately!

RECLAST	Z	F	C	X	A	E	R	Y	P	L
IBANDRONATE	N	O	A	C	T	O	N	E	L	O
ROCALTROL	H	R	L	N	A	N	F	M	T	I
DENOSUMAB	A	T	C	E	I	L	G	N	C	R
CALCIUM	T	E	I	K	D	I	C	A	P	T
RALOXIFENE	S	O	U	T	E	R	X	V	R	I
RISEDRONATE	I	C	M	B	R	K	O	I	O	C
TERIPARATIDE	V	A	I	G	A	W	R	N	L	L
PAMIDRONATE	E	S	T	O	B	M	K	O	I	A
ALENDRONATE	X	A	M	A	S	O	F	B	A	C

Notice a theme? Answers: Zoledronic Acid, Boniva, Calcitriol, Prolia, Calcium, Evista, Actonel, Forteo, Aredia, Fosamax

## ABOUT US

The Rho Chi Society encourages and recognizes excellence in intellectual achievement and advocates critical inquiry in all aspects of pharmacy. The Society further encourages high standards of conduct and character and fosters fellowship among its members.

The Society seeks universal recognition of its members as lifelong intellectual leaders in pharmacy, and as a community of scholars, to instill the desire to pursue intellectual excellence and critical inquiry to advance the profession.

## UPCOMING EVENTS

October 20<sup>th</sup>: Pharmacy Organization Day (9am-3pm)  
October 26<sup>th</sup>: Mock Residency Interviews (5pm)  
October 27<sup>th</sup>: Blood Drive (all day, with APhA and PLS)  
October 28<sup>th</sup>: Healthy Halloween (all day, with PLS)

## CURRENT EXECUTIVE BOARD



Pictured above (left to right): Tawfeek, Shannon, Nandini, Mohamed, and Lila at the 2011 Induction Ceremony.

President: Mohamed J. Dungersi

Vice President: Nandini Puranprashad

Secretary: Lila Ahmed

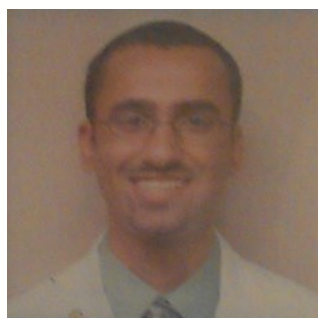
Treasurer: Tawfeek Khan

Historian: Shannon Tellier

Media Relations Coordinator: Mohammad A. Rattu

Faculty Advisor: Dr. S. William Zito, PhD

## MEET THE STUDENT EDITORS



My name is Mohammad A. Rattu, and I am a 6<sup>th</sup> year PharmD candidate at St. John's University. I have had profound experiences with media-related positions in pharmacy organizations at our university, and continue to support the utilization of technology to further our profession. As editor-in-chief of Rho Chi Post, I hope to instill motivation and leadership in our student body. Feel free to get in touch with me at:

[mohammad.rattu06@stjohns.edu](mailto:mohammad.rattu06@stjohns.edu)



My name is Ebey P. Soman, and I am a 5<sup>th</sup> year PharmD candidate at St. John's University. I enjoy writing very opinionated articles, and am excited to be an editor of Rho Chi Post. I encourage all readers of our newsletter (including students, faculty, and professionals) to respond with their own literary pieces. I look forward to hearing from you, and welcome your comments and constructive criticisms:

[ebey.soman07@stjohns.edu](mailto:ebey.soman07@stjohns.edu)



My name is Mahdieh Danesh Yazdi, and I am a 5<sup>th</sup> year PharmD candidate at St. John's University. I like to stay current with all the changes in our profession, both legal and clinical. I hope to keep you informed with all that I learn. Please enjoy Rho Chi Post, and provide us detailed feedback so that we may improve our newsletter. If you have any questions or concerns, you can reach me at:

[mahdieh.daneshyazdi07@stjohns.edu](mailto:mahdieh.daneshyazdi07@stjohns.edu)



My name is Marie Huang, and I am a 5<sup>th</sup> year PharmD candidate at St. John's University. I am in a continuous process of self-definition, and constantly testing the boundaries of this world. I enjoy channeling my inspiration through words and photographs. As a student editor and a witness to an evolving profession, I look forward to keeping you updated! Who knows where we will be tomorrow? If you'd like, you can reach me at:

[mary.huang07@stjohns.edu](mailto:mary.huang07@stjohns.edu)