SOMEDAY STARTS TODAY.

That family trip you’ve been meaning to take. The home renovation you’ve always wanted to do. The career pivot you’re ready to make. All those things you said you’d do someday can start happening today. Because some things just can’t wait, and we can design your financial plan so you can feel good about going for them. Spend your life living.®

LET’S GET STARTED

Nick Liverio
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Being a part of the NCODA Professional Student Organization (PSO) community is such a remarkable experience. Together, we keep each other updated and informed on current clinical oncology practices, while also providing opportunities that aid in developing leadership skills.”

- Jonathan Rivera
PharmD Candidate | Class of 2023
University of North Texas Health Science Center

ABOUT PSO

Our focus is to offer an international community for healthcare students with a passion in oncology and pharmaceutical industry. The NCODA Professional Student Organization (PSO) was established for students interested in oncology, association management, healthcare advocacy and policy, and industry leadership.

PSO BENEFITS

- First professional student organization for students interested in oncology/association management/industry leadership
- Opportunities to attend NCODA international meetings
- International public presentation opportunities
- Create educational materials to help impact cancer care
- International publishing opportunities (ForumRewind, SummitRewind, Inspire & Oncolytics Today publications)
- Increased networking opportunities with oncology and industry professionals, and key opinion leaders
- Access to over 50+ hours of oncology video education (Student Educational Talks)
- Oncology clinical practice experience and mentorship
- Healthcare advocacy and policy experience
- Additional student opportunities:
  - 1-year post-graduate oncology fellowships
  - International elective APPE rotation in oncology
  - Participate in NCODA’s international clinical oncology competition

NCODA is a grassroots, not-for-profit organization, founded to strengthen oncology organizations with medically integrated pharmacy (MIP) services.
Welcome to the inaugural edition of *Inspire* — the official publication of NCODA’s Professional Student Organization and your place to learn, engage, manage, and become inspired by the innovative world of oncology. *Inspire* was constructed to be engaging. While reading this publication, we encourage you to be interactive and have fun! You will find different thought-provoking questions, QR codes and opportunities to provide feedback.

So, what will you learn about while reading *Inspire*? The Inspire publication consists of a multitude of different topics, articles, and information. The material presented ranges from clinical reviews, personal editorial stories, interviews, and educational papers. Authors for *Inspire* range from dedicated NCODA student pharmacists to world oncology leaders.

As this is our very first edition, there have been some growing pains. But as the great Kelly Clarkson once said, what doesn’t kill you makes you stronger. Our goal is to keep improving with every edition. So, hit us with any feedback you might have through our QR code — we would greatly appreciate it!

If you would like to get involved with the *Inspire* publication, please email the publication’s chief editor Sarder Sadid, PharmD, at sarder.sadid@ncoda.org. If you have a topic idea for the next edition of *Inspire*, please submit a response by using the QR code below. Now, sit back, put on your glasses/contacts/monocle, and enjoy the first edition of *Inspire*.

Yours truly,

The Inspire team
NCODA PROFESSIONAL STUDENT ORGANIZATION UPDATES

2022 has seen significant growth and progress for our PSO Chapters. Here are some of our highlights for the year!

1. PHARMACY MENTORSHIP PROGRAM
   For the first time, we will be introducing NCODA Pharmacy Mentorship Program! This program matches student pharmacists interested in oncology careers with a practicing oncology leader. The goal of this program is for student pharmacists to receive one-on-one guidance and insights from experienced pharmacists in clinical, industry, academic, leadership and management settings. The first mentee class will run from October 2022 to April 2023.

2. NEW PSO CHAPTERS
   Please welcome our newest PSO chapters — University of Georgia, University of Arizona, Memorial University, Ohio Northern University, The Ohio State University, St. Louis College of Pharmacy, University of Louisiana Monroe, Drake University and St. John Fischer University! This brings our number of PSO chapters to 49 and we are not even close to being done! We are always looking to expand. Please contact Cooper Bailey, PharmD, at cooper.bailey@ncoda.org to learn more about joining our PSO family.

3. 2023 PQI COMPETITION
   Be on the lookout for information regarding the second annual PQI competition which will be held in February 2023. Participation in the PQI competition is mandatory for each PSO chapter. What do you get for winning the PQI competition? Well, bragging rights and the opportunity to work with NCODA’s PQI committee to publish their PQI! Now, that is cool!

4. NCODA CONNECT
   Extra! Extra! Read all about it! The perks of NCODA Connect! This new platform is an easy way to connect with other members throughout the organization in one convenient place from the comfort of your home! You can also utilize the student community threads to post links to fundraisers or merchandise sales that your PSO Chapter is hosting. If you haven’t had the chance to do so, check it out at my.ncoda.org/home!

5. NCODA STUDENT EDUCATION TALKS (SETs)
   SETs will continue to be held on the last Wednesday of each month at 8 p.m. EST. SETs enable our student pharmacist members to participate in presentations and discussions that cover a wide range of oncology topics.
10. PSO INTERNATIONAL GROWTH

PSOs are expanding beyond the US and Canada! Be on the lookout for our first ever PSOs in India, Lebanon, Vietnam and Europe. NCODA is proud to have been invited to present and participate in three international conferences including the Croatian Pharmacy and Medical Biochemistry Students’ Association, European Pharmacy Student Association, and the Canadian Association of Student Pharmacists and Interns. We are always looking to expand upon our vision in becoming the world leaders in oncology. Please contact Cooper Bailey, PharmD, at cooper.bailey@ncoda.org to learn more about joining our PSO family.

7. PSO OF THE YEAR WINNER & RUNNER-UP

Congratulations to our PSO chapter of the year — University of Toronto (UofT) and the runner-up — Washington State University. UofT has consistently shown strong student engagement at our PSO general meetings and international meetings. In addition to that, they hosted a Virtual Terry Fox Run, and organized unique educational events for their members and community.

8. NCODA MEDICALLY INTEGRATED PHARMACY PRACTICE RESIDENCY PROGRAM (MIPP)

NCODA is proud to announce the release of the oncology residency and fellowship directories! This unique and easy-to-use resource was created for student pharmacists to enable them to have a one-stop-shop for oncology residencies and fellowships as they look to navigate the start of their oncology careers. You can check out the directories under resources at www.ncoda.org.

6. ONCOLOGY RESIDENCY AND FELLOWSHIP DIRECTORIES

We are excited to announce the release of the oncology residency and fellowship directories! This unique and easy-to-use resource was created for student pharmacists to enable them to have a one-stop-shop for oncology residencies and fellowships as they look to navigate the start of their oncology careers. You can check out the directories under resources at www.ncoda.org.

9. PQI COMPETITION WINNER

Congratulations to the Virginia Commonwealth University (VCU) team of Sarah Gillaspie and Sarah Khaddage for winning the 2022 PQI competition! The PQI competition subject was “Hypertension Management Associated with VEGF Inhibitors”. Their PQI has recently been published and is available for healthcare providers around the world to utilize. NCODA is proud of all 40+ teams that participated in the competition and are excited for next year’s competition.
STOP ME IF YOU HAVE HEARD THIS ONE BEFORE — YOUR RESUME/CV IS THE MOST IMPORTANT DOCUMENT OF YOUR LIFE. NO PRESSURE, RIGHT? IT ALSO TENDS TO BE NEGLECTED UNTIL YOU ARE CLOSE TO DEADLINES AND THE CLOCK IS TICKING AND THERE IS NO TIME TO WASTE.

MAYBE SOMEONE UNEXPECTEDLY ASKED YOU FOR IT OR PERHAPS YOU PROCRASTINATED. BUT BELIEVE ME WHEN I TELL YOU THAT THE RECIPIENTS KNOW WHETHER YOU INVESTED TIME OR NOT. WHICH ONES DO YOU THINK MAKE THE CUT AND GET INVITED TO INTERVIEW?

WHAT IS THE PURPOSE OF THESE DOCUMENTS? THE IDEA IS NOT TO CAPTURE EVERYTHING THAT YOU HAVE EVER DONE ON AS MANY PAGES AS POSSIBLE. IT IS NOT A COMPETITION FOR THE LONGEST DOCUMENT.

That is where people go wrong.

A resume/CV is a way to capture your knowledge, skills and abilities (KSAs) on a couple of pages in a succinct way that is engaging and makes the reader want to meet and learn more about you. The purpose is to get an interview, not to get the job or the postgraduate position. It is just one piece of the puzzle and process.

Let’s start off with what not to do because somehow that seems to be overlooked and we go straight to what everyone should do first.

You can have all of the wonderful and important items incorporated into your CV and if you make one or even more of these rookie mistakes, readers tend to get annoyed and move onto the next applicant and put that CV into the “maybe I will come back to you later” list.
WHAT NOT TO DO

In the United States, there are questions and topics that cannot be asked during an interview as they are considered to be protected areas. They are designed to prevent discrimination. So, it stands to reason that you should also avoid putting these kinds of information on your CV or in any additional application materials.

The protected areas are:
- Age or genetic information
- Birthplace, country of origin or citizenship
- Disability
- Gender, sex or sexual orientation
- Marital status, family, or pregnancy
- Race, color, or ethnicity
- Religion

Many recruiters/reviewers will dismiss or archive a document with any information related to these protected areas. That means that you are automatically disqualified. International CVs tend to include this type of information. If that applies to you, take it off.

Also make sure to not add your date of birth or your social security number. Why make it easy for someone to steal your identity?

Fundamental mistakes will also take you right out of the running. Make sure that your formatting is consistent throughout the document including spacing, alignment, font sizes and types.

Other other rookie mistakes that are very easily avoided are spelling errors, use of personal pronouns, writing paragraphs instead of bullet points, neglecting putting sections in reverse chronological order, forgetting to put past work in the past tense and repeating information. By preventing these easily avoidable mistakes you will have a much better chance of advancing into the next phase.

Even if you had the same type of position, do not copy and paste bullet points because that reads as being lazy to your audience. The implication is that you will also take shortcuts at work, which is an automatic “no thanks” from hiring managers. Presentation counts.

Also, I suggest ignoring fads like putting your photo on your document. This is not a casting call for a movie or commercial. Headshots are neither required nor recommended.

My next statement might be a little controversial. I loathe templates. Templates are limiting and make formatting an absolute nightmare when you need to make edits. It is frustrating enough to have to update and edit these documents, so I see no reason to add another barrier.

Many templates also have graphics, which are distracting and do not convert well upon upload into an application portal, or have ridiculous rating scales for each skill. Tell me, what person is going to highlight a skill and rate themselves as two stars out of five? Just saying.

BEST PRACTICES

How about some best practices since we have covered some of the “what not to do” pitfalls?

Transferable skills are incredibly important to leverage in your document. If you have led a team, have demonstrated customer service skills, or have been a project manager in a previous position, that means that you have the experience to be able to transition (transfer) those skills into another position.

Knowledge, skills and abilities (KSAs) are the way to communicate the value that you bring to a potential future employer. Use the position description and match your KSAs with what they are looking for in the position.

The knowledge that you have acquired can be didactic or experiential.

Your skills are your natural talents that you possess and can do well repeatedly and proficiently.

Abilities are not aptitudes. Aptitudes are something that you have the potential to be able to perform. Abilities are demonstrated, repeatedly performable and observable in the present time.

Competency is the intersection of knowledge, skills and abilities. Think about it from the hiring manager’s perspective when you create your bullet points. They want someone that is competent, with transferable skills and demonstrates action and has initiative.

Utilizing action verbs creates an opportunity to capture the attention of your reader and actively engage them in what you are trying to communicate. It helps them to visualize the action taking place which is far more powerful than stating “responsibilities” that are a function of a position.

STANDING OUT

I bet you are wondering what you can do to make your CV stand out amongst the rest. If you have successfully avoided all of the pitfalls previously mentioned, you are in a competitive position.

If you have also removed all irrelevant awards, publications, scholarships, associations and memberships and kept all of your references on a completely different document, you get to level-up.

Want to really differentiate yourself from the competition? These are my suggestions …

Make sure that your bullet points are value-added for your reader.

What does that mean? It means no fluff, get to the point and...
make the reader understand what you are saying and encourage them to read further. If you are wasting the reader’s time by writing, “responsible for” and listing job functions that tell them nothing.

**Use action verbs to describe your KSAs.** Take the time to elevate your writing and it will help to capture the attention of your audience. It is about quality and not necessarily quantity.

For example, instead of this “Regulatory activities for products” (#1 boring, #2 vague, #3 for what kind of products?), write “Provide regulatory guidance for product development and planning throughout the product life cycle” (#1 Action verbs, #2 engaging, #3 context of KSAs, #4 Tell me more — already thinking of interview questions.)

**Elevated writing is not adding more words to be “fancy” or to increase the length of the document.** It is the opposite because you are being succinct while adding context and value for the reader. If you are able to quantify results and/or include anything results-oriented, qualitative is fine, then you are going to stand out from the competition because most of them are not.

**Finally, if you have not discovered the value and power of LinkedIn, you are missing out and seriously disadvantaged for career development opportunities.** Those of you on LinkedIn, hyperlink your LinkedIn profile on your header where your contact information is located.

I also suggest editing the URL for your page to something that includes your name and has fewer numbers and symbols, though I suggest not adding your date of birth. Another differentiator is to hyperlink any professional publications, posters, presentations, videos, etc. in your document.

Simply create an open and shareable file with anyone that has the link. Make sure that there is no protected or confidential information on what you share, especially if you signed a non-disclosure agreement, and this provides an opportunity for hiring managers to see your actual work product. Doing this will differentiate you from your competition as it has not yet become common practice.

Ultimately, this is your document and you get to decide what you would like to include regardless of the information and feedback you have received from countless people along your journey. You are going to receive different suggestions from everyone that reviews it for you.

This is the most important document of your career for sure because it is a representation of you, your KSAs and accomplishments. It should be a living document that always changes and adapts with you and your career.

Decide what is most important about you and what you have to offer according to what stage of your career you are in and want to move towards.

Be honest, authentic and show people who you are, what you can do and make them want to talk with you. Afterall, that is the whole point.

▲ **Kristen Felthousen, MS, is the CEO and Founder of Career CRISPR LLC. She is also the Program Manager at University of Southern California School of Pharmacy.**

**REFERENCES**


**ADDITIONAL RESOURCES:**

▲ **Transferable Skills: How to Use Them to Land Your Next Job:** https://www.coursera.org/articles/transferable-skills

▲ **The Importance of KSA’s (Knowledge, Skills and Abilities) in the Federal Application Process:** https://www.cdc.gov/hrmo/ksahowto.htm.

▲ **185+ Action Verbs That Will Majorly Impress Hiring Managers:** https://www.themuse.com/advice/185-powerful-verbs-that-will-make-your-resume-awesome.
A PASSION FOR ONCOLOGY

I always enjoy a challenge and early in my pharmacy school career, I became intrigued and interested in pursuing a career in oncology pharmacy.

I took steps toward getting my foot in the door by joining the newly-established PSO chapter of NCODA in my school as a founding member. Throughout my time in NCODA, I participated in several meetings and also had the opportunity to deliver presentations on a variety of topics such as brain cancer epidemiology during a Student Education Talk (SET).

I also presented an overview of BAVENCIO® (avelumab) and INLYTA® (axitinib) dual therapy to the Oncology Pharmacy Technician Association (OPTA).

Another oncology experience that I take great pride in was my time at the Center for Cancer & Blood Disorders pharmacy in Fort Worth, Texas. I assisted in the development of the pill donation dispensing program that would help low-income patients receive critical oncology therapies for no cost.

BE THE WHAT?

One of my proudest experiences, for which I feel the most passionate about, was promoting the Be The Match registry. After much determination and diligence from my team, more than 40 students from my campus signed up for Be The Match.

We were ecstatic! Be The Match helps to not only conduct research dedicated to blood cancer survival, but also improves the quality of life and provides a cure for those with leukemia, lymphoma and other life-threatening diseases by facilitating bone marrow or cord blood transplant.

I also became aware that 70% of those who need a transplant do not find a match within their family, so I felt an overwhelming duty to sign up.

CONTINUED ON NEXT PAGE
LIFE-CHANGING PHONE CALL

They say you might sit on the registry and never get a call, or you might get a call within a few weeks notifying you of your match. I signed up during the campus drive in October 2019. I knew I would be ready to answer the call when and if it ever came.

The call came in early January as an incredible birthday present and I felt so ecstatic. I was notified by mail, email and phone, and my family members that I had listed on sign up were notified as well.

The first phone conversation was to reaffirm my commitment to the bone marrow transplant process, answer a health history questionnaire, and set up an appointment for blood work to confirm the match. I was also told that my recipient was a 40-year-old female with leukemia.

Once the results of the blood work confirmed the match, I was contacted by the incredibly helpful and polite coordinator who would guide me through the rest of the process.

I attended a phone orientation and signed paperwork in February. I also completed a physical exam and vein check. I was expected to start a five-day course of filgrastim injections with the final dose taken on the day of donation.

The injections were a part of a method called Peripheral Blood Stem Cell donation in which a nonsurgical procedure called apheresis would filter out the excess stem cells that were generated by the injections.

My donation appointment was set for a morning, weeks later that spring. All that was left was to sit in a comfy chair for up to eight hours with an IV line coming out of each arm. My body had responded well to the filgrastim injections, so the filtration process only took three hours.

As I sat in the chair, I reflected on how the back pain I had experienced as a temporary side effect of the medication was nothing compared to what my recipient was going through with their condition. I also realized how my sacrifice would change another person’s life forever.

Upon completion of the donation, I stayed at a nearby hotel with meals reimbursed by Be The Match. Over the next few weeks, I received several follow up calls to see how I was recovering from the injections and the donation process. I was fully recovered within two days without any lasting effects. I can expect an update on the recipient one year after the donation.

SWABBING FOR CHANGE

This was an eye-opening experience that made a real impact on my recipient’s life. I recommend everyone from 18 to 40 years of age to consider joining the registry. More information can be found at www.bethematch.org.

Charlie Cid, PharmD, is a PGY-1 resident at Medical Center Health System in McKinney, Texas.
Chapter in Focus is a series that we intend to include in every *Inspire* publication to share the accomplishments of our outstanding PSO chapters, especially as we look to expand worldwide. We hope you enjoy our very first chapter spotlight — University of Texas at Austin College of Pharmacy!

A big thank you to University of Texas at Austin PSO’s chapter president and our International Executive Board president-elect, *Javier Granados II*, PharmD, for sitting down with us for this interview!

**How old is your chapter?**

Our chapter is officially one semester old as of this past spring!

**How do you encourage students to join?**

A major selling point is the accessibility of NCODA due to their complimentary membership. We encourage students to join if they have the slightest interest in oncology or wish to explore healthcare fields. NCODA being an interdisciplinary organization is also an attractive proposition. Most importantly, the diversity of NCODA’s professional members who are dedicated to helping students reach their personal and career goals is a unique feature. A combination of these three things are used to encourage our students to join NCODA.

**What is your chapter’s favorite accomplishment?**

Reaching our goal of collecting over fifty samples for our first Be the Match drive. But we are not done yet! Our PSO looks forward to exceeding this number in our next drive!

**What is your chapter’s favorite thing that NCODA does for students?**

We appreciate NCODA’s complimentary membership for students. Healthcare students have enough stress in their lives as is, and financial resources for professional development should not contribute to such worry. With complimentary membership, NCODA’s resources are accessible to all.

**What part of our mission connects with your chapter?**

Our chapter connects most with promoting “unique and dynamic experiences for students to collaborate with all oncology stakeholders.” We love collaborating with other student organizations while aiming to cover as many disciplines within oncology throughout a semester. That way, we expose our members to as many networking and career exploration opportunities as possible.
WHAT IS SOMETHING UNIQUE THAT YOUR CHAPTER DOES?

One of our goals as a PSO was to supplement oncology education for our members. We created an ONCompetent Committee, which researches and creates content that covers pathophysiology, treatments, guidelines and health outcomes for one type of cancer every month. This content is added to the Cancer of the Month section of our weekly newsletter.

You might have noticed that we are spearheading this initiative on the official PSO Instagram and hope to make this a formal committee across all PSOs. The committee also shares cancer articles related to the diseases taught in our pharmacy school’s curriculum.

We, as an e-board, are extremely proud of our committee members and appreciate their hard work.

ANY ADVICE FOR FELLOW CHAPTERS?

I would advise other PSO chapters to establish or strengthen their relationship with the NCODA fellows, staff and Student International Executive Board (IEB). Our PSO chapter is dedicated to our members because NCODA headquarters is dedicated to us. Their commitment to student success was the ultimate reason we decided to establish a PSO here at our pharmacy school.
**TEN FUN FACTS: IMMUNOTHERAPY**

By Darlena Le, PharmDc

Immunotherapy is a treatment that utilizes an individual's immune system to fight diseases, such as cancer. It does this by either stimulating the immune system to attack cancer cells or creating substances to mimic the immune system's components in order to improve it.

<table>
<thead>
<tr>
<th>1. The first immunotherapy for cancer was approved in __________.</th>
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<tr>
<td>☐ 2000 ☐ 2011 ☐ 2017</td>
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2. There are several main types of immunotherapy such as checkpoint inhibitors, chimeric antigen receptor (car) t-cell therapy, immunomodulators, cancer vaccines and monoclonal antibodies. Immunotherapies are available for over _______ cancer types (e.g., melanoma, lung cancer, bladder cancer).

| ☐ 5 ☐ 10 ☐ 20 |

3. Some cancer vaccines can treat cancer by initiating an immune response against specific diseases.

| ☐ True ☐ False |

4. When immunotherapy is used with other treatment types for certain cancers, it appears to work better.

| ☐ True ☐ False |

5. Immunotherapy cannot “train” the immune system to remember cancer cells.

| ☐ True ☐ False |

6. Immunotherapy was the first treatment to increase survival in patients with advanced ______.

| ☐ Melanoma ☐ Lung Cancer ☐ Leukemia |

7. Immunotherapy is approved to treat tumors regardless of their ______.

| ☐ Origin ☐ Size |

8. With cancer immunotherapy, long-term cancer remission is not possible.

| ☐ True ☐ False |

9. Immunotherapy does not only work for humans. It also helps dogs.

| ☐ True ☐ False |

10. _______ % of patients achieve durable results with immunotherapy.

| ☐ 15-20% ☐ 25-30% ☐ 35-40% |

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**REFERENCES**


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Darlena Le is a final year Student Pharmacist at the R. Ken Coit College of Pharmacy at University of Arizona.
Student pharmacists all over the country are put through a rigorous curriculum in order to graduate as well-rounded pharmacists. But that is not the end of the line. Following graduation, most begin preparations to take the North American Pharmacist Licensure Examination® (NAPLEX®) along with the Multistate Pharmacy Jurisprudence Examination® (MPJE®) for their respective state(s), to gain licensure to practice pharmacy in the United States.

The NAPLEX® is a six-hour exam that tests student pharmacists on the knowledge that they gained throughout pharmacy school. It consists of 225 questions in a computerized, fixed form. The exam results are released in a pass or fail format and student pharmacists are allowed up to five attempts to pass the exam. Fortunately, most pass it within their first try!

IT COMES DOWN TO SIX

The NAPLEX® is a long and arduous experience in terms of preparation and also, when the exam is being written. But it is necessary to ensure that student pharmacists are up-to-par in terms of their clinical knowledge. For this reason, it tests student pharmacists in six areas that have been determined essential. These six areas include:

1. Obtain, Interpret, or Assess Data, Medical, or Patient Information
2. Identify Drug Characteristics
3. Develop or Manage Treatment Plans
4. Perform Calculations
5. Compound, Dispense, or Administer Drugs, or Manage Delivery Systems
6. Develop or Manage Practice or Medication-Use Systems to Ensure Safety and Quality

CHANCE FAVORS THE PREPARED MIND

It is vital for student pharmacists to be prepared for this exam by having a thorough understanding of these six areas. But how does one prepare well? NAPLEX preparation courses such as the ones by RxPrep and Kaplan are very beneficial to student pharmacists, but they require purchasing. They are, however, very helpful and most student pharmacists purchase them to aid their preparation.

These prep courses are designed to cover the six areas of the competency statements which provide students the foundations and knowledge to be successful on these exams. In addition to that, schools of pharmacy have also taken the initiative to prepare their student pharmacists by rearranging the last year of the PharmD program by designing preparatory courses that allow student pharmacists to be better prepared for the exam. There are also various companies and social media influencers that offer resources for students such as concise one-page sheets about various topics, question banks, YouTube videos, etc.

NCODA SAVES THE DAY

While the available resources are beneficial and are instrumental in the preparation of the subject matter, student pharmacists constantly seek new resources to enable them to be as prepared as possible when they write their exam. Every therapeutic area poses its own set of challenges. At NCODA, we felt that we could help alleviate concerns associated with the therapeutic area of oncology.

For this reason, we held an online NAPLEX Oncology Review webinar over Zoom which was attended by over 400 students. They were taught by oncology specialists, who covered the most commonly tested oncology concepts based on the six areas that the NAPLEX® cover. Subject areas covered included mechanism of action, supportive care, and side effects to medications, among others.

Participants were also given the opportunity to ask questions and apply prior knowledge through various exam-style questions. A post-webinar survey found that 70% of the participants felt that the review prepared them better for the NAPLEX®; 90% preferred the webinar format, and 100% would recommend this for future participants.

We were pleased with the success of the NAPLEX Oncology Review. Events like this not only increase pass rates, but also give confidence to student pharmacists as well. Furthermore, the benefit of having a supplemental NAPLEX review allows students to be more prepared for the exam and apply what they learned to easily answer questions in this subject area. With that being said, NCODA is actively looking to expand its NAPLEX review. NCODA will expand review topics such as calculations and biostatistics along with oncology next NAPLEX season. I encourage all pharmacists preparing for the NAPLEX to tune into these reviews.

Fay Ansary, PharmD, is an Association Management Fellow at NCODA.

REFERENCE

NEW PSO COMMITTEES: AN INTRODUCTION

By Elizabeth Heard, PharmD

NCODA is excited to announce the launch of our first ever Professional Student Organization (PSO) committees!

Starting January 2023, two committees titled Project Save a Life and Project O.P.S.E (Oncology, Prevention, Screening and Equity) will be available for all student members to join.

We believe that incorporating committees will organize our PSO chapters in a manner that helps NCODA further accomplish our vision of innovating the continuity of cancer care.

In addition, two advantages of having committees are sharing of responsibilities among PSO members and increased member involvement.

PROJECT SAVE A LIFE

The primary purpose of Project Save A Life is to increase participation in national bone marrow registries. Committee members will work alongside organizations such as Be the Match, Canadian Blood Services, etc., to help engage potential bone marrow transplant donors.

Throughout each semester we plan on having donor registry challenges between chapters, where the PSO chapter with the highest number of people signed up on the registry will receive a special prize (stay tuned!)

Other initiatives for Project Save a Life include planning fundraising activities such as races, luncheons, concerts, and golf tournaments to further support bone marrow registry and cancer research.

PROJECT O.P.S.E

Primary focus of Project O.P.S.E is to increase cancer awareness and oncology education within the NCODA PSO membership and the broader NCODA community. A survey of Canadian pharmacy schools found that only 20% of schools provided more than one week of oncology training.

Comparably, in a US study, there was a reported mean of 28 “contact hours” taught in oncology. Due to the limited clinical knowledge and experience in oncology, many students feel uncomfortable in their ability to support and manage cancer patients.

Project O.P.S.E will provide opportunities for members to become comfortable with counseling cancer patients on symptom management and recommended cancer screenings.

In terms of community impact, Project O.P.S.E members will play a part in organizing events and creating social media infographics with the purpose of educating others about cancer prevention and screening.

If you are a student member interested in serving as a regional committee chair of either Project Save A Life or Project O.P.S.E at your PSO chapter, reach out to Elizabeth Heard, PharmD, for further information at elizabeth.heard@ncoda.org.

Elizabeth Heard, PharmD, is an Oncology Advocacy Health Policy & Equity Fellow at NCODA.

REFERENCE

STEPPING INTO THE WORLD OF ONCOLOGY

By Charles Burke, PharmDc

Oncology may be one of the more daunting specialty fields for pharmacy students. A broad overview of complicated, oncologic disease states is often taught with a deep dive into just a few key drugs used in treatment.

However, many complex, costly medications are used in practice, and management is often patient-specific. Oncology presents a challenging but unique opportunity for pharmacists to make a clinically meaningful impact in patient care.

Over time, I developed a passion for oncology as a pharmacy student and wanted to share the steps I pursued to learn more.

FEELING THE SPARK

At the end of my P1 year, I was afforded a unique opportunity to complete my community introductory pharmacy practice experience at Cancer Specialists of North Florida.

While there, they taught me more about chemotherapy agents, types of cancers, and the workflow of a specialty pharmacy.

I counseled patients who were starting oral chemotherapy agents on the medication and route of administration, as well as side effects and how to handle them.

We shared the pharmacist’s role in their care and how we work as a team with the doctors and nurses to support their overall care and monitoring beyond answering medication questions or suggestions on medication adherence techniques.

This type of personalized patient care made me realize just how important the pharmacist can be in the patient’s experience.

The direct patient interaction was very meaningful to me, and it sparked my passion for oncology.

SEIZING THE OPPORTUNITY

During my P2 year, an intern position opened with Cancer Specialists of North Florida. I knew this position would allow for more opportunities to learn more about oncology and continue to help patients, so I applied and was accepted.

I was tasked with contacting established patients to evaluate their care and ensure any side effects were addressed. Additionally, we would use oral chemotherapy education sheets to help counsel the patients.

This was my first interaction with NCODA and the many services they offered. Beyond learning about NCODA, every call provided an opportunity to learn about a new drug, share side effect management strategies, and reduce any patient concerns as I worked directly with the doctors.

I would also be able to identify financial problems and direct them to support teams that specialize in that field. I developed close connections with my patients.

Although most importantly, the patients shared how they felt heard, supported, and cared for during this hard time in their lives.

LEMONS TO LEMONADE

The pharmacists at Cancer Specialists of North Florida recommended I join NCODA and start following their webinars on drug topics.

Unfortunately, my pharmacy school’s campus did not have a professional student organization for NCODA. Still, I would attend the national student meetings online and watch their student educational talks to learn from oncology leaders.

This involvement allowed me to hear of and participate in NCODA’s first annual positive quality intervention competition. The experience gave me a new level of understanding about targeted therapies and the importance of developing clinical resources to help guide therapy for patients and providers.

After that competition, I reached out to NCODA to assist with any projects to further develop my knowledge. I was able to work on a variety of projects, which included updating screening recommendations and reviewing references for Positive Quality Interventions (PQIs).

Oncology can be a daunting world, but making that first step requires dedication, being open to new possibilities, asking those in the field for guidance, and looking for new experiences, wherever they may be.

Charles Burke is a final year student pharmacist at University of Florida College of Pharmacy.
Welcome to Career Insights! For every edition of *Inspire*, we will interview an accomplished healthcare contributor to enable our readers to gain insights into oncology careers. For our first ever edition, we are fortunate to interview Christina Haaf, PharmD, BCOP. Dr. Haaf has been very active with NCODA and the PSO chapters. Over the summer she hosted the first ever NAPLEX review session. Thank you Austin Starkey, PharmD, MBA, for hosting this interview.

**WHAT ARE SOME OF YOUR MORE TYPICAL ROLES AND RESPONSIBILITIES?**

I spend the majority of my time reviewing chemotherapy orders in Epic and creating chemotherapy treatment plan templates that are implemented into our electronic health record system. I also answer various drug information and patient care-related questions from nurses, oncologists / fellows, and internal medicine physician residents. Additionally, I help counsel patients who are starting the first cycle of their new chemotherapy regimens. For most of the year, I also have trainees at my worksite: PGY2, PGY1s, P4, P3 and / or P1 students. I spend time teaching them on my rotation by incorporating their help with medication reconciliation as well as carving out time to listen and evaluate their patient case, journal club and topic presentations.

**BACKGROUND**

Christina Haaf, PharmD, BCOP, is a Clinical Assistant Professor at the University of Illinois at Chicago (UIC) College of Pharmacy. She received her Doctor of Pharmacy at the University of Texas in Austin and completed a general pharmacy residency at UIC College of Pharmacy. She has taught at UIC for the past 26 years and practices as a hematology-oncology clinical pharmacist at University of Illinois Health in Chicago in both inpatient and outpatient patient care settings. Dr. Haaf is a UIC PGY2 oncology assistant residency program director as well as a coordinator for the UIC College of Pharmacy Collaborative Degree Programs with the University of Hong Kong and University of Malta. She has served on several university and hospital committees, including cancer center protocol review, patient education, pain, nutrition support and the UIC College Pharmacy admissions committee. Christina has co-authored several peer-reviewed publications and poster presentations.
**WHAT IS ONE UNIQUE ASPECT OF YOUR JOB?**

I have the opportunity to wear many hats! In addition to my clinical pharmacist duties, I am the co-residency program director for the UIC PGY2 oncology residency. I am also a preceptor for UIC PGY1, PGY1 international program as well as our PGY1 Specialty Pharmacy program.

I also have some non-oncology pharmacy commitments. This includes serving as the secretary for the UIC College of Pharmacy Admissions committee. This role has many responsibilities which include reviewing applications to our PharmD program as well as interview candidates. Another role is serving as the coordinator for the UIC College of Pharmacy Collaborative Degree Programs with the University of Hong Kong and University of Malta.

**IF YOU COULD GIVE ONE PIECE OF ADVICE TO A CURRENT STUDENT, WHAT WOULD IT BE?**

Make an effort to not only interview well for your job, but also to interview your new boss and co-workers in order to understand the day-to-day work life and team dynamics.

**WHAT ARE SOME SKILLS THAT ARE IMPORTANT IN YOUR POSITION?**

I would say that a solid oncology pharmacy knowledge base, which can be achieved with either a PGY2 oncology residency or years of practice as a clinical pharmacist in an oncology setting, is important. Another key skill is being detail-oriented. In addition to that, I think it is vital to be a team player and have good communication and interpersonal skills in order to ensure that the workday runs smoothly since our pharmacists rely on assistance from many other health care professionals and learners and interact with patients, all of whom have varying personalities.

**WHAT DO YOU ENJOY MOST ABOUT YOUR JOB?**

I enjoy working during business hours in an urban academic medical center that cares for a culturally and economically diverse patient population. I’m thankful that I continuously meet new people at my workplace through counseling cancer patients and working on a daily basis with a multidisciplinary cancer team, which includes but is not limited to health care students, residents, nurses, physicians, and dieticians.

**WHAT IS SOMETHING YOU WISH SOMEONE WOULD HAVE TOLD YOU BEFORE STARTING YOUR POSITION?**

Make an effort to not only interview well for your job, but also to interview your new boss and co-workers in order to understand the day-to-day work life and team dynamics.

**WHAT DO YOU LIKE TO DO FOR FUN/TAKE YOUR MIND OFF WORK?**

I love spending time with my husband, three daughters and friends. Now that my oldest daughter moved away from home to start her freshman year in college this fall, I’m savoring this last year as my youngest daughter’s Girl Scout troop leader for her grade school. Camping, service projects, and selling cookies are welcomed distractors!

▲ Austin Starkey, PharmD, MBA, is Associate Member of Stakeholder Engagement & Operations at NCODA.
Cancer is one of the leading causes of death worldwide, accounting for approximately 600,000 deaths in the United States alone.¹

At present, there exists a number of well-studied cytotoxic agents to treat cancers. However, these agents usually cause side effects, which include fatigue, hair loss, nausea, and vomiting. Taking additional medications can alleviate these side effects but in turn, they increase the cost and pill burden on patients.

WHAT IS PHOTODYNAMIC THERAPY?

Photodynamic therapy (PDT) is able to combat many of the aforementioned side effects. PDT is the process of applying light to a photosensitizer (PS) and through a cascade of energy transfers, a myriad of reactive oxygen species (ROS) are produced leading to mediated cell death, vasculature damage and induce immunogenic cell defense, via either apoptosis or necrosis.²

PDT is currently being evaluated to treat brain, intraocular, esophageal, head, neck, gastric, breast and colorectal cancers, as well as other cancerous and non-cancerous conditions.³⁴

PDT PROJECTIONS AND UTILIZATION

As of 2020, the PDT therapy market was estimated to be worth $3.4 billion annually, and it is projected to reach $7.1 billion by 2025.⁵ In 2020, North America was the largest user of PDT for cancer treatment.

PDT is currently only approved for actinic keratosis, advanced cutaneous T-cell lymphoma, Barretts esophagus, non-small cell lung cancer, esophageal cancer, and squamous cell skin cancer (stage 0).⁶

Approved agents include methyl aminolevulinaten (METVIX*), 5-aminolevulinic acid (LEVULAN*) and porfimer sodium (PHOTOFRIN*).⁷

PDT agents are typically administered intravenously, which requires a wait time for the PS to accumulate in the cancerous cells. Alternatively, the PS can be injected directly into the cancerous tumor.

Our research consists of attempting to embed a PS into a bandaid-like formulation so that it can be applied directly to a surface-level melanoma.

Incorporating the PS into a surface coating, it can slowly and in a controlled manner, leach out allowing penetration into cancer cells.

CONTINUED ON NEXT PAGE
Subsequently, when irradiated, it can mitigate one of the biggest side effects of PDT, i.e., its photosensitivity. When a PS is administered systemically there is potential for activation by sunlight, causing the skin to be more sensitive.

By employing multilayering nanofilms, our lab has developed coatings of oppositely charged polyelectrolytes at a variety of different pHs, which are subsequently loaded with various first- and second-generation PS, again at a variety of pHs. The combination yields different release rates in an environment resembling the skin.

INTERPROFESSIONAL COLLABORATION

The effectiveness of PDT is dependent not only on the PS and light source, but on an interdisciplinary team of healthcare providers to ensure the correct administration.

Pharmacists can assist in the PDT procedure, by diluting the formulation before administration, checking possible drug interactions and providing supportive care during and after the procedure.

One of the most common side effects patients experience is hypersensitivity, leading to skin burns, peeling of the skin, local edema, erythema and dysuria, which can require the administration of other medications.

FUTURE ENDEAVORs

Since the first PDT study on cancer in 1978, there have been hundreds of additional clinical trials. It is a revolutionary non-invasive technique with fewer side effects. However, it is still considered a late-line treatment for many cancerous indications.

PDT could be used as adjunct therapy to ensure clean margins after surgery or even in combination therapy with cytotoxic agents. The main reason for the lack of clinical utility is that most of the clinical trials conducted do not have adequate power, which is an opportunity for improvement.

It is a hope to see more approved indications for the use of PDT in cancer therapy in the coming years, as well as early adoption as a treatment choice.

Tanvi Shah is a final year student pharmacist at Massachusetts College of Pharmacy & Health Sciences (MCPHS). Ronny Priefer, PhD, is a Professor of Medicinal Chemistry and the current Interim Associate Dean of Graduate Studies at MCPHS.

REFERENCES


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Legislation is a word that may unsettle some. However, it is one of the most effective ways to bring positive change to the lives of patients by making healthcare more affordable and accessible.

This is why at NCODA, we strive to educate our members and partners through our Oncology Legislation Tracking Tool (OLTT), which was launched in March 2022.

The OLTT is a comprehensive tool that provides the most up-to-date information on state legislation interest and access related to oncology health policy.

This tool is complimentary for all NCODA members and can be accessed at www.ncoda.org/oncology-legislation-tracker.

THE BIRTH OF AN INNOVATIVE TOOL

The idea of the OLTT was initially explored by several NCODA leaders in early 2021. To be successful, this development required time, diligence and tremendous legislative research.
for the bill information summaries, and the “why it matters” section for the OLTT.

An important objective of the OLTT was to make it easy to understand. For this reason, the language level is set at a 5th to 8th grade reading level.

Extensive discussions with NCODA’s Legislative & Policy Advisory Committee (LPAC) were instrumental in ensuring that the OLTT was of the highest standard when it was launched.

It should be noted that it was the suggestion of a LPAC member Dr. Barry Brooks, MD, that a “why it matters” section was added to enable everyone to understand how specific legislation impacts healthcare, including physicians, patients, pharmacists and all other stakeholders.

A WELL-OILED MACHINE

Running a tracking tool that covers every state in the country is no small feat. After collecting the data, it has to be entered and formatted correctly on WordPress — a content management system that enables you to host and build websites — to ensure that the OLTT runs smoothly.

On top of that, a significant amount of maintenance work is done by Advanced Pharmacy Practice Experience (APPE) students at NCODA to provide our members with a resource that is accurate, organized, and up-to-date.

NCODA has hosted ten 10 phenomenal Health Policy & Legislative Affairs interns to further diversify and innovate this unique tool.

Our interns come from both pharmacy and non-pharmacy backgrounds, and span from schools all over the country. These students are all driven by a strong passion in healthcare legislation and oncology.

At this time, each intern is assigned between four to six states. Interns are responsible for updating bill statuses, finding new bills and effectively summarizing bills to be featured on the OLTT. They work diligently to make weekly updates and ensure that the OLTT is always up-to-date.

At NCODA, we are tremendously grateful for the effort put in by our interns.

Our 10 interns report to Kevin Scorsone, NCODA’s Legislative & Policy Liaison, every week to provide him updates.

Our 10 interns report to Kevin Scorsone, NCODA’s Legislative & Policy Liaison, every week to provide him updates.

One of our interns, Audrey Simon (PharmD/MBA candidate at The University of Toledo College of Pharmacy and Pharmaceutical Sciences), works with the newer interns to make their transition into their positions as seamless as possible. Audrey also serves as the Vice President of Legislative Affairs for NCODA’s International PSO Executive Board.

Currently, Sarder Sadid, NCODA’s Fellow in Oncology | Advocacy | Health Policy & Equity, has implemented strategies to improve efficiency of communication between the interns and NCODA’s legislative team.

LOOKING AHEAD TO THE FUTURE

When the OLTT was launched, it consisted of two maps — one that involved legislation pertaining to PBM reform and another that involved legislation pertaining to restrictions placed on copay accumulator and maximizer programs.

In a little over half-a-year since its inception, NCODA is currently exploring ways to improve this resource for our members. Current plans include adding a search bar and a multi-filter option, and having all the bills listed by state.

While brainstorming improvements can be exciting, the real challenge lies in finding adequate time and work force to implement changes.

At NCODA, we are fortunate to have a great marketing team who have been working in tandem with our legislative efforts to publish the OLTT on our website. Their contribution to the success of the OLTT is immeasurable. Our marketing team’s efforts combined with the value of this excellent tool are a testament to our guiding values of being patient-centered and always collaborative.

In just over six months, the impact that the OLTT has made has been significant. The main success lies in raising awareness of oncology legislation. This is the first and only resource of its kind to be as specific, and updated as regularly, and this uniqueness has helped NCODA make a significant impact on the legislative front.

By creating an educational tool for everyone, NCODA has been able to put their legislative efforts on the map. We can learn about the trends in healthcare legislation, and about the decision-making of lawmakers.

In addition to that, it helps states take notice of the legislative efforts of their neighboring states, and instills motivation towards making a positive impact for patients around the country.

At NCODA, we are very proud of the impact the OLTT has made and commend the work done by the legislative team and interns. We look forward to taking the OLTT to the next level in the future.

▲ Sarder Sadid, PharmD, is an Oncology | Advocacy | Health Policy & Equity Fellow at NCODA. Audrey Simon is a final year student pharmacist at the University of Toledo. Tahsin Iman, PharmD, is the Associate Manager of Education at NCODA.
GET TO KNOW YOUR INTERNATIONAL EXECUTIVE BOARD

PRESIDENT
JONATHAN RIVERA

What is your favorite medication & why?
Rivaroxaban for the puns: rivera-xaban

What is your go to study items?
I'm a huge fan of iced coffee

No exams on Monday, it's the weekend what are you doing?
Destressing with movies/popcorn

What is your favorite movie/TV show?
Movie: Everything Everywhere All At Once
TV: Scrubs, The Office, Community

What are some of your hobbies?
Video games, tik tok and my dogs

If you were an animal what would you be and why?
Fox, they can be cunning and playful

If you were a fictional character who would you be?
J.D. From Scrubs. Funny, sweet-natured, quirky and fairly innocent!

What's your Harry Potter house?
Hufflepuff

PRESIDENT-ELECT
JAVIER GRANADOS II

What is your favorite medication & why?
Xyzal, it saves my life from allergies

What is your go to study items?
Iced coffee with Irish cream flavors

No exams on Monday, it's the weekend what are you doing?
Staying in and recharging

What is your favorite movie/TV show?
Movie: Forrest Gump
TV: The Good Doctor & The Mandalorian

What are some of your hobbies?
Sports (especially baseball, GO ASTROS!) and Star Wars

If you were an animal what would you be and why?
House cat, no bills and sleep/eat all day

If you were a fictional character who would you be?
The Mandalorian. Fight bad guys, have cool gear, travel galaxy with baby Yoda!

What's your Harry Potter house?
Slytherin

VP OF COMMUNICATIONS
GAGE MCINTURFF

What is your favorite medication & why?
Ibuprofen! Headache? Fever? Bring it on!

What is your go to study items?
Celsius & Swedish Fish

No exams on Monday, it's the weekend what are you doing?
Hanging out with friends

What is your favorite movie/TV show?
Movie: Mulan & cringy rom-coms
TV: Ted Lasso and Veronica Mars

What are some of your hobbies?
Reading, watching sports, playing billiards

If you were an animal what would you be and why?
Lion, a leader who can be energetic but can enjoy laying in the sun all day

If you were a fictional character who would you be?
Princess Tiana. Strong-willed, independent & ambitious.

What's your Harry Potter house?
Ravenclaw
GET TO KNOW YOUR INTERNATIONAL EXECUTIVE BOARD

VP OF MEETINGS
MATTIE KILPATRICK

What is your favorite medication & why?
St. John's Wort. Easily available, just trying to make you feel better, & likes to interact!

What is your go to study items?
Tropical Chaos Body Armor Edge

No exams on Monday, it’s the weekend what are you doing?
Staying in & relaxing

What is your favorite movie/TV show?
Movie: Inception & Forrest Gump
TV: Gilmore Girls, The Office & Scandal

What are some of your hobbies?
My dogs, True Crime podcasts, Tik Tok, & watching football

If you were an animal what would you be and why?
Dolphin. Super social & intelligent that gets to swim all day

If you were a fictional character who would you be?
Olivia Pope. She’s a girl boss and has a solution to every problem!

What’s your Harry Potter house?
Hufflepuff

VP OF COMMUNITY SERVICES
DAVE BELLO

What is your favorite medication & why?
Hydroxyzine due to versatility of use!

What is your go to study items?
White Chocolate Macadamia Clif Bar

No exams on Monday, it’s the weekend what are you doing?
Rough week then stay in, if not then hang out with friends

What is your favorite movie/TV show?
Movie: Everything Everywhere All at Once & The Witch
TV: His Dark Materials

What are some of your hobbies?
Concerts, music, my dog, trying out new restaurants and video games

If you were an animal what would you be and why?
Capybara. They are just cool!

If you were a fictional character who would you be?
Will Parry from His Dark Materials. Travels between worlds and stands up for himself & friends!

What’s your Harry Potter house?
Ravenclaw

VP OF LESLISLATIVE AFFAIRS
AUDREY SIMON

What is your favorite medication & why?
Olmesartan due to the wonderful popcorn smell!

What is your go to study items?
Chocolate covered pretzels, Verb energy bars, & V8 energy drinks

No exams on Monday, it’s the weekend what are you doing?
Hang out with friends, go to a movie, and read a book

What is your favorite movie/TV show?
Movie: Roman Holiday
TV: New Girl & any cringy reality TV show

What are some of your hobbies?
My dog, coloring, reading, rollerblading & talking

If you were an animal what would you be and why?
Red panda. Lay in trees & eat all day

If you were a fictional character who would you be?
Demigod from Percy Jackson Series. Fingers crossed to be a child of Zeus

What’s your Harry Potter house?
Slytherin
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“Do not be too timid and squeamish about your actions. All life is an experiment. The more experiments you make the better.”

— Ralph Waldo Emerson