



THE ONCOLOGY BULLETIN



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CAREER SPOTLIGHT: A ROADMAP TO ONCOLOGY PHARMACY

Expanding knowledge of cancer molecular biology has significantly contributed to the progress in development of cancer treatment. With such astonishing growth in drug development, pharmacists—the drug experts—have great potential in serving as a resource to ensure optimal medication use for patients with cancer. As a student going through pharmacy school curriculum, you may wonder how oncology pharmacists contribute to patient care and what paths can be taken to receive the training to become an oncology pharmacist.

In order to shed light on some of these questions, we interviewed Dr. Megan Hartranft, a post-graduate year-2 (PGY-2) oncology resident at Georgia Regents Medical Center (GRMC) and the University of Georgia College of Pharmacy.

Dr. Hartranft was a second year Pharm.D. Student at University of North Carolina (UNC) Eshelman School of Pharmacy when she received an opportunity to intern for Via Oncology, a division of D3 Oncology Solutions, which developed evidence based and up-to-date treatment pathways for various types of cancers. As an intern who was mentored by an oncology pharmacist, Dr. Hartranft contributed in designing and updating treatment pathways for metastatic breast cancer, esophageal cancer, various types of lymphomas, mesothelioma, and many more.



Megan Hartranft, Pharm.D.

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ORGANIZATION SPOTLIGHT: HEMATOLOGY/ONCOLOGY PHARMACY ASSOCIATION (HOPA)

What is HOPA?

HOPA is a professional society for hematology/oncology pharmacists and associates that will be celebrating its 10th anniversary next year. The mission of HOPA is “to reduce the burden of cancer on society and promote optimal, cost-effective care for those affected by cancer.” In efforts to achieve this goal, HOPA has recently developed practice standards to support roles and responsibilities of oncology pharmacists¹. These defined practice standards have

increased the understanding of scope of hematology/oncology pharmacy practice throughout all aspects of cancer care.

The goal of HOPA is to have an oncology pharmacist as an integral member of the care team for all cancer patients.

How can students benefit from HOPA?

HOPA offers crucial education and networking opportunities for pharmacy interns, residents, pharmacists as well as technicians and researchers.

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Organization Spotlight: HOPA continued from page 1...

Educational information offered by HOPA include updates regarding latest developments in clinical trials, therapeutic regimens, treatment guidelines and novel technologies. This information helps students have a positive impact on the care of cancer patients during advance pharmacy practice experiences in hematology/oncology. HOPA University is a place to go for such information: www.hopau.org

In addition, the annual conferences offer cutting edge information that will enable you to advance your clinical knowledge, and present valuable networking opportunities as you get a chance to meet the leaders in our profession.

Reference:

(1). Hematology/Oncology Pharmacy Association. Scope of Hematology/Oncology Pharmacy. 2013. Available at <http://www.hoparx.org/>

**Contributed by Ami Patel,
Pharm.D. Candidate**

OBINUTUZUMAB (GAZYVA™): BREAKTHROUGH TREATMENT OF CHRONIC LYMPHOCYTIC LEUKEMIA (CLL)

CLL is a monoclonal disorder characterized by a progressive accumulation of mature but functionally incompetent lymphocytes.

- CLL is the most common type of leukemia in the western world with about 15,680 new cases in the United States this year¹. The average age at the time of diagnosis is around 72 years².
- Due to the lack of direct comparison between the agents in clinical trials, there is no standard front-line treatment regimen for symptomatic CLL, especially in elderly population with co-morbidities.
- A recently completed phase III trial³ is the first to evaluate three treatments, chlorambucil (Cbl) alone, obinutuzumab plus chlorambucil, and rituximab plus chlorambucil, in previously untreated CLL patients with co-morbidities.
- Improvement in median progression free survival seen in patients treated with obinutuzumab plus Cbl versus Cbl alone (23.0 vs 11.1 months, respectively; hazard ratio, 0.16; 95% confidence interval, 0.11-0.24; p<0.0001) has led to approval of obinutuzumab (Gazyva™) for use with chlorambucil in patients with previously untreated CLL.

Obinutuzumab is a humanized anti-CD20 monoclonal antibody that targets the CD20 antigen expression on the surface of B-lymphocytes. Obinutuzumab binds to CD20 antigen, and promotes B-cell lysis by several mechanisms such as activation of apoptotic intracellular pathways, activation of complement cascade and engagement of immune effector cells to induce cellular cytotoxicity and phagocytosis.

Recommended Dose

Obinutuzumab

Cycle 1: 100 mg intravenously on day 1, 900 mg on day 2, and 1000 mg on days 8 and 15

Cycles 2-6: 1000 mg administered intravenously every 28 days

Chlorambucil

0.5 mg/kg orally on days 1 and 15 of each cycle

Pretreatment with intravenous glucocorticoid (dexamethasone or methylprednisolone), acetaminophen and/or diphenhydramine is recommended to reduce the risk of infusion related reactions.

References:

- (1). Siegel R, Naishadham, D, Jemal A. CA Cancer J Clin. 2013;63(1):11-30.
 (2). <http://www.cancer.org/cancer/leukemia>
 (3)Goede V, et al. Chemoimmunotherapy with GA101 plus chlorambucil in patients with chronic lymphocytic leukemia and comorbidity: results of the CLL11 (BO21004) safety run-in. Leukemia. 2013 Apr;27(5):1172-4.
 (4). Gazyva™[package insert]. San Francisco, CA: Genentech, Inc; 2013.

Contributed by Ami Patel, Pharm.D. Candidate

CLINICAL CASE STUDY: TEST YOUR KNOWLEDGE

A 66 year-old post-menopausal Caucasian female was diagnosed with an early stage, ER+ localized breast cancer (T1N0M0) 6 months ago. The patient refused surgery at the time of her diagnosis, and was started on **Tamoxifen 20 mg PO once daily**. She returned to her oncologist for a follow-up 2 wks ago, when he performed appropriate diagnostic tests and noted an increase in tumor size (T2N1M0).

Other medications include: Lisinopril 10 mg once daily for hypertension (since 2002) and Fluoxetine 40 mg PO once daily for depression (since 2011).

Which of the following may have contributed to the treatment failure of Tamoxifen in this patient?

- (A). Interaction between Lisinopril and Tamoxifen
- (B). CYP2D6 polymorphism
- (C). Interaction between Fluoxetine and Tamoxifen
- (D). Both B & C

See next issue for the correct answer!

Contributed by Ami Patel & Sohini Veen, Pharm.D. Candidates

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CAREER SPOTLIGHT: DR. HARTRANFT, CONTINUED FROM PAGE 1

This experience introduced Megan to the dynamic nature of advances in oncology pharmacy as she had “an opportunity to see variety of oncology disease states and learn to critically evaluate literature for efficacy, safety and cost effectiveness of cancer treatments.” As a student, she continued to explore oncology as a career option by picking electives, projects and rotational experiences in this area. Before starting the PGY-2 residency in oncology, Dr. Hartranft completed a PGY-1 pharmacy practice residency at University of Michigan Hospitals and Health System in Ann Arbor, Michigan. While completing PGY-1 residency, she continued to develop her interest in oncology, yet balanced it with variety of experiences in other areas by choosing projects and electives outside of oncology. Currently during oncology specialty residency, she spends a calendar month on rotations in different subsets of oncology including bone marrow transplant (inpatient and outpatient clinic), pediatric oncology, and general inpatient and outpatient hematology and oncology. Her typical day comprises working as a part of the multidisciplinary team of oncologists and other physician extenders. While rounding with the team every morning, Dr. Hartranft provides treatment recommendations on chemotherapy toxicity management, supportive care, and basic drug information as well as patient education. During the later

part of the day, she attends meetings, topic discussions with her preceptor, and works on longitudinal research projects. She receives additional training while staffing at the cancer center two days per month and will soon start providing in-patient staffing as well.

As she continues to acquire a wide array of knowledge to become proficient at caring for cancer patients, Dr. Hartranft also enjoys reading outside of traditional educational material, because it has allowed her to strengthen her perspective towards care of cancer patients. During this interview, she shared a few of her favorite book titles, which include *The Emperor of All Maladies: A Biography of Cancer* by Siddhartha Mukherjee, *The Immortal Life of Henrietta Lacks* by Rebecca Skloot, and *The Anatomy of Hope* by Jerome Groopman. She loves these books because of the great blend of details on scientific discovery with personal perspectives on cancer care. She strongly urges students interested in oncology to keep an open mind, maintain broad educational background, take advantage of opportunities to participate in research projects, and find a mentor to help you critique career options and navigate the path to achieve your professional goals.

Contributed by Ami Patel, Pharm.D. Candidate

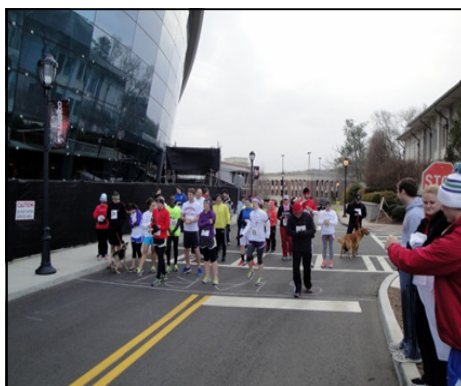
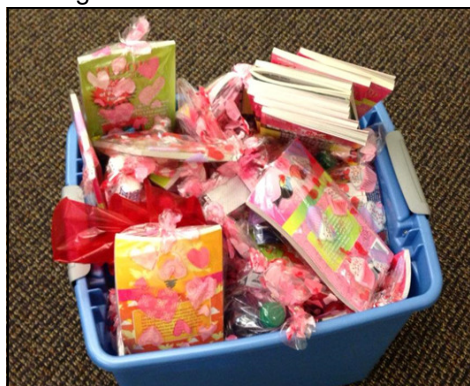
PHILANTHROPIC ACTIVITIES BY SOAP

Last winter, the members of SOAP gathered to make goodie bags for cancer patients at Winship Cancer Institute of Emory University. Some of the items included in the bags were crossword puzzles, snacks, socks, toothbrushes and Valentine cards to offer comfort and hope to those battling cancer.

In March 2013, we created the Tina Borg Classic 5k benefiting Winship Cancer Institute. This race was created to provide funding for clinical research for all types of cancer. In its first year, we raised about \$2700 to donate towards cancer research efforts!

This fall, we hosted a blood drive sponsored by the Red Cross, where 150 individuals donated blood. Since each pint of blood given can potentially save 3 lives, we estimate 450 local patients benefited from this event.

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Contributed by Michelle Borg, Pharm.D. Candidate

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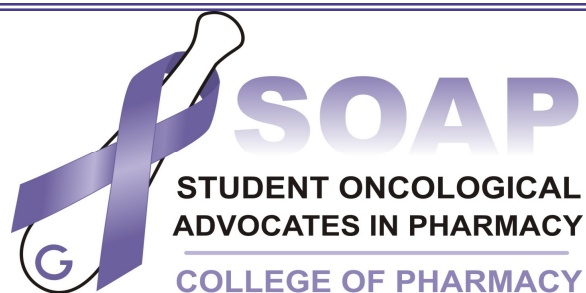
The Student Oncological Advocates in Pharmacy (SOAP) is the first organization established at the University of Georgia College of Pharmacy that focuses primarily on cancer-related education and supports cancer-based research. The organization was founded in 2012 to positively influence lives of those fighting against cancer through student involvement in local philanthropies/fundraisers for research and educational programs. The mission of SOAP is to advance treatments for all oncological diseases through research advocacy and funding for cancer centers, as well as support local communities in their fight with cancer through educational and charitable programming. SOAP serves as a bridge between knowledge and action. The organization serves as a way to unite all those who have been touched by cancer in any way and strives to make a difference.

SOAP held its inaugural meeting on August 28th, 2012 in the UGA Pharmacy South building and ever since it has been instrumental to support treatments for all types of cancer through its philanthropic, educational, and fundraising events.

Contributed by Benjamin Albrecht, Pharm. D. Candidate

Stay tuned with upcoming meetings and events of SOAP by joining our facebook page:

<https://www.facebook.com/#!/groups/249856015124116>



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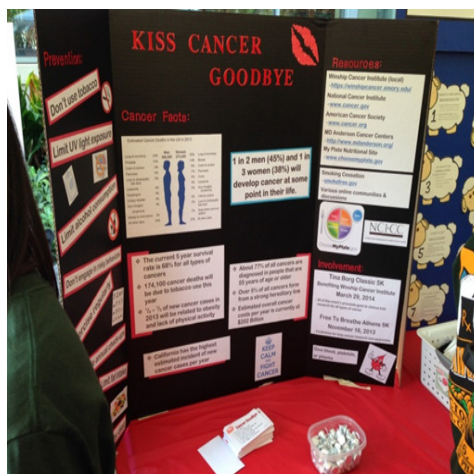
ANY QUESTIONS, COMMENTS, TOPIC REQUESTS?
 Email Ami Patel at patela@rx.uga.edu

From the Editor

I am delighted to release the first issue of The Oncology Bulletin. As a student passionate about oncology pharmacy and seeking career opportunities in this area, I am thrilled to have this avenue to introduce fellow students to available resources and clinical opportunities. I encourage the student readers of this newsletter to embrace the vastness of oncology therapeutics, and turn your knowledge into action by participating in SOAP sponsored events that ignite the light of hope in lives of millions battling cancer.

-Ami Patel, Pharm.D. Candidate

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At Dawgtoberfest sponsored by UGA College of Pharmacy in October 2013, volunteers of SOAP educated community members regarding the risk for and prevention of various types of cancers.

Upcoming SOAP Events

Spring 2014

- Red Cross Blood Drive
- Valentines' Day goodie bags for cancer patients at Winship Cancer Center
- The Annual Tina Borg Classic 5K Benefiting Winship Cancer Institute.

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