# Huntsman Cancer Hospital & Institute
## PGY2 Oncology Pharmacy Residency
### 2019-2020 Rotations

## REQUIRED ROTATIONS

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<td><strong>Inpatient Hematology: 4-5 weeks</strong></td>
<td>Teaching service with attending, fellow, resident, intern, and APC. Rigorous exposure to several malignancies, benign hematology, and an inpatient service line. Usual census of 8-16, peak 26; Lots of new diagnoses and chemotherapy starts, long-term admissions, NF, occasional study patients (and managing associated toxicities), hemophilia, SCA, ITP/TTP, SAA, TLS, lots of ID beyond bacteria (fungal, viral), patient education and discharge counseling/planning. Topic discussion and team in-service.</td>
<td>This busy service allows the resident to see a wide variety of malignant and non-malignant hematology patients. Residents lead 4 topic discussions during the rotation. Great mix of patients with malignant and nonmalignant patient population. Enjoy working with both an advanced practitioner team and academic teaching team; learn different way to communicate with different types of providers. I like getting to know the patients since they are often a captive audience for weeks.</td>
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<tr>
<td>Michael Filtz, Sara deHoll, Stacy Prelewicz, Kelley Ratermann, Halee Namanny / Academic teaching service – hematologists</td>
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| **Inpatient Oncology: 4-5 weeks** | Usual census of 12-16 on teaching service, 6-8 on APC service, peak 28 total. Exposure to NF, pain, constipation/diarrhea, hypercalcemia, cord compression, brain mets/AMS, SVC, malignant effusions, FTT, planned inpatient chemotherapy (sarcoma, CNS lymphoma), occasional new start chemotherapy for SCLC, study patients (and associated toxicities), dyspnea (infection vs drug-associated pneumonitis vs mets), and every other complication of having or treating cancer, patient education and discharge counseling/planning. | Enjoyed working in the team room with the medical residents which allows you to always know what decisions are being made regarding the patients and you are easily accessible to team for questions. There were informal and formal topic discussions each week and the preceptors were thoroughly involved in aiding the residents’ learning. The preceptors allow you to work independently but are always available to answer questions. True test of priorities trying to round with 2 teams on weekends. Key to success is strong internal medicine skills. Very steep learning curve due to the wide variety of disease states you will provide care for; due to this, the preceptors slowly increase your responsibilities/workload as the rotation continues. |
| Thu Tran, Kelly Fritz, Tonya Smith, Emma Jones / Academic teaching service & APC service – oncologists | | |

https://pharmacyservices.utah.edu/residency/specialties/oncology.php
Clinic: 4 weeks

### 1A: Phase I, GI, thoracic, head & neck
**Pharmacists:** Courtney Cavalieri, Jessica Streeter, Thu Tran


Focus on GI, thoracic, and phase I medical oncology with opportunities to see pulmonology procedures and head & neck oncology management.

There are lots of opportunities to provide chemotherapy education!

Dr. Gilcrease will teach you everything you every wanted to know about arrhythmias and genuinely cares about you as a person. Dr. Akerley is a pro at the hospice talk.

### 2B: Gynecologic, GU, SOS
**Pharmacists:** Erin Bailey, Jessica Streeter, Emma Jones, Erik Harrington

**Physicians:** Neeraj Agarwal, Anna Beck, Shane Brogan, Christopher Dechet, Sumati Gupta, Katherine Harris, William Lowrance, Ben Maughan, Kathryn Maurer, Jill Sindy, A. Patrick Soisson, Robert Stephenson, Umang Swami, Paul Thielking, Theresa Werner

GU is one of the best clinics to work in for patient counseling experience due to the new specialty pharmacy requirements. It’s very busy but you will leave feeling confident with GU cancers and get experience with study protocols!

Dr. Agarwal loves the folate pathway.

Dr. Werner is very pharmacy-friendly.

Dr. Maughan is (also) a pharmacist.

### 2C: Myeloma
**Pharmacists:** Alyson Clough, Kelley Julian

**Physicians:** Djordje Atanackovic, Douglas Sborov

In this clinic the resident sits amongst the advanced practitioner team and nurses who are highly dependent on pharmacists, giving the resident ample opportunities to be highly integrated into the team. This rotation allows the resident to heavily focus on a small subset of heme malignancies - primarily multiple myeloma, in addition to Waldenstroms, amyloidosis and plasma cell leukemia. The MM attendings are incredibly friendly and love to teach learners. This rotation also has so many opportunities for patient education, with counseling on the daily. The resident will lead one topic discussion weekly, attend weekly MM tumor board meets with the team, and provide one presentation or in-service to the APCs.

Alyson and Kelley are truly the queens of plasma cell neoplasms and will push you to learn the most. On this rotation, while having fun!

### 2C: BMT / Auto-Allo
**Pharmacists:** Kali Ditolla, Mary Lampas, Kristen Vinik, Alyson Clough

**Physicians:** Michael Boyer, Daniel Couriel, Catherine Lee, Sabarinath Venniyil Radhakrishnan, Vedran Radojcic

Lots of continuity of care allows you to see the results of your interventions and build a rapport with patients. Many opportunities to counsel new start multiple myeloma patients, enter treatment plans for conditioning regimens, and adjust immunosuppressants. Work closely with team to address patient and provider medication related concerns.

### 2D: Derm, sarcoma, head & neck, genetic counseling
**Pharmacists:** Jordan McPherson, Dan Sageser

**Physicians:** Kenneth Grossmann, John Groundland, Siwen Hu-Lieskovsk, Kevin Jones, Joshua Schiffman

Ample opportunities to deal with immune-related adverse events (and Jordan sits on the NCCN panel).

Dan Sageser loves a good dad joke.

Jordan is passionate about patient education and health literacy...also is a fan of Star Wars and Dr. Who.

### 2E: GI, neuro, sarcoma, IR, melanoma, breast
**Pharmacists:** Steve Kirkegaard, Shelly Hummert, Kelly Fritz, Makala Pace, Tricia Jeppson

**Physicians:** Anna Chalmers, Adam Cohen, Howard Colman, Sarah Colonna, Samuel Finlayson, Vaia Florou, Aaron Frodsham, Rulon Hardman, Lyen Huang, John Hyngstrom, Randy Jensen, Laura Lambert, Joe Sammy Mendez, Sean Mulvihill, Jessica Noack Cohan, Ryan O’Hara, Thomas Bartley Pickron, Courtney Scaife, Gita Suneja, John Weis

https://pharmacyservices.utah.edu/residency/specialties/oncology.php
Residents will work alongside medical oncology teams consisting of attending physicians, advance practice clinicians, clinic nurses and other support staff and aid in pharmacologic support of patients seen in these clinics. Examples of activities include: medication histories, applying/adjusting chemotherapy treatment plans, medication management, patient medication counseling, drug information questions, topic discussions, etc.

### 3A: Breast

**Pharmacists:** Christine Crossno, Tricia Jeppson, Shelly Hummert  
**Physicians:** Jayant Agarwal, Anna Beck, Saundra Buys, Adam Cohen, Alvin Kwok, Cindy Matsen, Edward Nelson, Christopher Pannucci, Jane Porretta, Elizabeth Prystas, Regina Rosenthal, John Ward, Mei Wei

This clinic involves working with and shadowing physicians as well as reviewing chemotherapy orders for infusion.

Aside from learning about breast cancer, there are many opportunities to learn about the role of herbal supplements during this rotation and what interventions pharmacists make here.

All of the breast oncologists love working with pharmacists. Dr. Buys is especially interested in pharmacy resident education.

### 3A: Heme

**Pharmacists:** Jeffrey Gilreath, Ashley Newland, Stacy Prelewicz, Halee Namanny  
**Physicians:** Michael Deininger, Martha Glenn, Ahmad Halwani, Boyu Hu, Tibor Kovacsics, Charles Parker, Ami Patel, Josef Prchal, George M. Rodgers, Paul Shami, Deborah Stephens, Srinivas Tantravahi, Tsewang Tashi

Lots of opportunities to look at peripheral smears and dissect differentials. See procedures such as bone marrow biopsies and IT chemo administration. Lots of opportunities for learning the coagulation cascade and other benign hematology concepts.

### BMT Inpatient: 4 weeks

| Kristen Vinik, Mary Lampas, Kali Ditolla, Alyson Clough / BMT attending, hospitalist, APC | Usual census of 8-12 patients, peak 28. Planned allogeneic and autologous transplant admissions, CAR-T cell therapy administration/support, GVHD management, most TPN of any inpatient service, NF and more weird infections than you can imagine, immunosuppressant monitoring, managing conditioning and transplant-associated toxicities, lots of discharge education/planning. | Many opportunities for order entry, writing discharge prescriptions, and providing discharge education. PK adjustments of immunosuppressant medications are made by the pharmacist. Interesting, complicated patients! Great review of immunology and seeing first-hand truly significant drug-drug interactions. Pharmacists are extremely well integrated into the service and are commended for the smoothness of the transitions of care. Best opportunity to improve on TPN writing competency. |

### Infectious Disease: 4 weeks

| Russell Benefield / Academic teaching service – ID attending/fellow | Usual census of 8-20 patients per service. Inpatient consult services, one for general ID the other for immunocompromised patients. Paired with a co-resident, separate patients but combined patient and topic discussions. Lots of thorough discussions and plan development to individualize therapy for the patient, bug, drug, and site of infection. Ample opportunity to practice PK calculations. Have your brain picked apart. See some funky stuff. Weekly "Stump the Stars" grand rounds. You might have to go to the library and get a hard copy of an article. | Daily topic discussions are conducted. Heavy focus on PK, pharmacology, spectrum of activity, and antibiotic dosing parameters in a variety of patient populations. Expect long days while on this rotation, but the preceptor spends just as much time reviewing topics and patients with you. You definitely learn a lot from this rotation including bugs and drugs, PK, and ____. Stretches your ability of how to think about patients and understanding pharmacists' interventions beyond quoting recommended dose adjustments from tertiary resources. |

https://pharmacyservices.utah.edu/residency/specialties/oncology.php
## Infusion: 4 weeks

| Nannette Sageser, Lisa Cox, Charles Hall, Erik Harrington | Pharmacists ensure safety and appropriateness of chemotherapy regimens, educate patients, and participate in process improvements. Residents will participate in pharmacology discussions, chemotherapy preparation, understanding how drugs need to be prepared, talking to patients about how regimens are tolerated and whether antiemetic or other supportive care should be adjusted, understanding how and why a particular regimen was chosen or fits into typical disease trajectory, RN troubleshooting and coordinating care (and hopefully see other side of Phaseal), facilitating injectable medications for clinics outside of infusion room, triage ACC medication concerns. Infusion Center routinely sees >80 patients per day in 37 chairs/beds and also facilitates injections and infusions for 7 clinics, IR, ACC, and BMT/heme clinic. | Resident spends majority of time reviewing appropriateness of chemotherapy and learning about each drug class, mechanism of action, and side effects. Approximately 25% of daily time spent is in face-to-face patient interaction. Average number of patients 5-15 per day (covered by resident). You are able to review the primary literature behind the regimens. After the chemo has been verified you are able to speak with each patient to follow up on supportive care measures as well as to ask just general questions such as if chemo was what they expected. I liked spending time with the pharmacy techs learning to prepare chemo. |

## Investigational Drug Services: 1 week

| Elyse MacDonald, Winter Redd, Melissa Webb, Berrie Child, Melissa Ngo, Kristie Holbrook, Jacob Majers, Michael Voight | Provides investigational medications for both hospitals and all clinics. Experience will focus on oncology trials, however. Prepare short instructions for trials, navigate potential drug interactions, attend site initiation and return visits, and explore documentation, billing, protocol building and blinding processes. Approximately 150 trials ongoing at anytime involving cancer patients, 25-30 phase I, and several first-in-human (~400 trials altogether). | Gave me a better sense of the intense documentation needed for investigational protocols. Made be better prepared to incorporate IDS into my clinical practice after residency. Writing daily short instructions made it easier to navigate the study protocols while on other rotations. Gained a better appreciation for the CTCAE. |

## Management: 1 week

| Scott Silverstein, Makala Pace, Michael Filtz, William Black, Kelly Fritz, Dan Sageser | Brief exposure to what the management squad does for us and because of us. Exposure to buyers, possibly MAC technicians, home infusion, specialty pharmacy, and other activities depending on what’s happening in the department. Residents will spend one-on-one time working with managers, supervisors and clinical coordinators to better understand hematology/oncology pharmacy management. Residents are expected to actively participate in administrative projects. Examples of projects include: holiday scheduling, staffing schedules, justification of clinical services, cost utilization and improvement, etc. | MUE required during residency to be assigned earlier in year. Other longitudinal activities ongoing including medication event reporting. Very approachable and connected group of managers. Scotty loves getting to know residents! |

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### ELECTIVE ROTATIONS

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<td><strong>HICU (Oncology-specific intensive care)</strong></td>
<td>The best place ever (the authors of this document are biased)! An incredibly diverse set of patients with cancer from every service, including medical oncology and hematology, stem cell transplant, IR, and surgical oncology. This 16-bed unit serves patients requiring 2:1 or 1:1 ICU, or 3:1 intermediate-level care. Those patients requiring ICU level care are managed by an ICU team including medical-pulmonary intensivists, APCs (currently 16 PAs/NPs), pharmacists, dietician, social workers, RNs, and various therapy and other support personnel. Those designated as intermediate-level care are managed by their primary service and the HICU pharmacist. Respond to codes and RRT events throughout all of Huntsman, prepare medications during ACLS and other emergent situations at the bedside, answer numerous compatibility questions, facilitate occasional chemotherapy (for patients at risk for TLS and other oncologic emergencies, IL-2, desensitization), a fair amount of TPN, CRRT, interesting outside hospital transfers, complicated infectious issues, lots of sepsis and pneumonia, mechanical ventilation, possible PA catheters, and otherwise dealing with everything that can go wrong during the diagnosis or treatment of cancer.</td>
<td>Important rotation for any oncology pharmacist so as to see end of life social issues and organ dysfunction and/or failure. Loved the hands on activities to prepare drugs for intubation or emergently needed pressors! I liked getting to see the surgical treatment of oncology in the OR. The team is very forgiving and has lots of fun. This is a very close knit group of interdisciplinary professionals. Most fun I’ve ever had at a journal club!</td>
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<td><strong>Supportive Oncology &amp; Survivorship</strong></td>
<td>Mixed inpatient and outpatient consult service that hopes to integrate palliative care from diagnosis rather than just near the end-of-life. Team comprised of medical oncologist also certified in palliative care, psychiatrist, interventional pain specialists, and several APCs.</td>
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Pharmacotherapy Outcomes Research Center (PORC)

| Diana Brixner | Explore a robust outcomes-based research department associated with the college of pharmacy where pharmacists work alongside PhD researchers and statisticians. Access to large databases including Utah population database and HCI tumor registry. | I liked being able to see how a clinical pharmacist can help researchers understand real practice and ask answerable questions that will impact future practice. |

**Pediatric Heme/Onc/BMT**

| Cindy Bender, Nate Gorney | Mixed rotation experience involving pediatric patients at Primary Children’s Hospital (Intermountain Healthcare system) on oncology, hematology, stem cell transplant, and immunocompromised services. Availability dependent on PCH resident/preceptor schedules. |  |

LONGITUDINAL & OTHER EXPERIENCES

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<td><strong>Orientation</strong></td>
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<td>Stephanie Sanders and many others</td>
<td>Over the course of 4 weeks, residents will be oriented to all aspects of pharmacy department including central and decentralized operations, discharge pharmacy dispensing, infusion processes, and innumerable policies &amp; procedures as well as EHR (Epic) training.</td>
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<td><strong>Staffing</strong></td>
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<td>William Black, Michael Filtz, Kelly Fritz, Makala Pace</td>
<td>&quot;Rotation&quot; that includes various activities throughout the year, including central pharmacy staffing, formulary management, improving the medication-use process, supervising technicians, interprofessional relations, and otherwise manage the operations and technology associated with our department.</td>
<td>Initially anxious about being the only pharmacist in the building for several hours in HCH, but quickly developed confidence. Working in central helped me understand the medication process before delivery to the RNs and patients. Lots of questions regarding compatibility and administration. Learning to triage.</td>
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## Development, Teaching, and Learning

**Stephanie Sanders**  
"Rotation" that comprises numerous activities throughout the year, including 2 lectures at the college of pharmacy (therapeutics and oncology elective) and an ACPE-accredited CE presentation to SLC area pharmacists. Precepting may include interns who work in our pharmacy, students on IPPE or APPE rotations, PGY1 residents, and other professionals (in-services to RNs, heme/onc residents or fellows, journal clubs, etc.). Other opportunities exist in the college of pharmacy for other lectures or small-group sessions. Weekly METS (Malignancy Education & Therapeutics Sessions are formal topic discussions (official CME) on various oncology topics, with each resident leading 6 of these and the others led by preceptors; associated drug discussions with resident preparation of drug information. Monthly discussions on the molecular basis of cancer (based on an eponymous textbook) with fellows.Optional teaching certificate program, mentoring a P3 or P4 student seminar, or participation in the internal intern mentoring program.

I found that teaching others helps me understand and retain the material better.

At first I was intimidated by METS, but soon realized how important they are for building my heme/onc knowledge. They are actually pretty laid back presentations with good pearls and feedback from preceptors and co-residents. They still take a lot of time to prepare, but the topics really stick with me. Plus I have presentations I can use in future teaching situations or interviews.

## Residency Project

**Stephanie Sanders, others**  
Research, quality improvement, or service development project led by the resident with support from 1 or more preceptors. Project should support department mission and organizational initiatives, or otherwise improve the delivery of pharmacy services or medications to patients with cancer. Proposal to be developed during orientation then reviewed formally by RAC before submitting to IRB and/or PRMC. Poster presentation at Vizient-UHC meeting immediately preceding ASHP Midyear meeting, poster presentation at HOPA Annual Meeting, and platform (PowerPoint) presentation at Mountain States Residency Conference. Manuscript draft in format suitable for specific journal required for receiving residency certificate.

I liked having ample preceptor support. RAC ensured the IRB process went smoothly.

Excited to be a part of meaningful research. For example, past research projects were verbally presented at ASCO and gained attention of HCH leadership.