

Huntsman Cancer Hospital & Institute
 PGY2 Oncology Pharmacy Residency
 2018-2019 Rotations

REQUIRED ROTATIONS

Pharmacists / Providers	Brief Practice Description	Resident Perspective & Fun Tidbits
Inpatient Hematology: 4-5 weeks		
<p>Michael Filtz, Sara Hiller deHoll, Stacy Prelewicz, Kelley Ratermann, Halee Namanny / Academic teaching service – hematologists</p>	<p>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.</p>	<p>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.</p> <p>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.</p> <p>I like getting to know the patients since they are often a captive audience for weeks.</p>
Inpatient Oncology: 4-5 weeks		
<p>Thu Tran, Kelly Fritz, Tonya Smith, Emma Jones, Cassia Griswold / Academic teaching service & APC service – oncologists</p>	<p>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.</p>	<p>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.</p> <p>True test of priorities trying to round with 2 teams on weekends. Key to success is strong internal medicine skills.</p> <p>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.</p>

Clinic: 4 weeks

1A: Phase I, GI, thoracic, head & neck (Courtney Cavalieri, Jessica Streeter, Thu Tran)

Sunil Sharma, MD	Medical oncologist: GI, Phase I	<p>Focus on GI, thoracic, and phase I medical oncology with opportunities to see pulmonology procedures and head & neck oncology management.</p> <p>There are lots of opportunities to provide chemotherapy education!</p> <p>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.</p>
G. Weldon Gilcrease, MD	Medical oncologist: GI	
Ignacio Garrido-Laguna, MD		
Jonathan Whisenant, MD		
Jose Nativi Nicolau, MD	Amyloidosis	
Josephine Abraham, MD		
Wallace Akerley, MD	Medical oncologist: thoracic	
Shiven Patel, MD		
Jonathan Boltax, MD	Pulmonology	
Chakravarthy Reddy, MD		
Sikandar Ansari, MD		
Aidin Iravani, MD		
Thomas K. Varghese, MD	CT surgeons	
John Stringham, MD		
Jason Hunt, MD	ENT, H&N surgeons	
Luke Buchmann, MD		
Marcus Monroe, MD		
Devaprabu Abraham, MD		
Robin Kim, MD		Liver surgeon

2B: Gynecologic, GU, SOS (Erin Bailey, Jessica Streeter, Cassia Griswold, Emma Jones)

Neeraj Agarwal, MD	Medical oncologist: RCC, prostate, testicular, bladder	<p>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!</p> <p>Dr. Agarwal loves the folate pathway. Dr. Werner is very pharmacy-friendly. Dr. Maughan is (also) a pharmacist.</p>
Sumati Gupta, MD		
Ben Maughan, MD, PharmD		
Christopher Dechet, MD	Urologic surgeons	
William Lowrance, MD		
Robert Stephenson, MD		
Theresa Werner, MD	Medical oncologist: gyn, breast	
Elise Simons, MD	Gyn/onc surgeons	
A. Patrick Soisson, MD		
Mark Dodson, MD		
Anna Beck, MD	Medical oncologist: breast, SOS	
Paul Thielking, MD	Psychiatrist, SOS	
Shane Brogan, MD	Interventional pain, SOS	

2C: Heme (Jeffrey Gilreath, Ashley Newland, Kelley Ratermann)

Deborah Stephens, MD	Lymphomas	<p>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.</p>
Michael Deininger, MD	CML, MM, mastocytosis	
Tibor Kovacovics, MD	MM, leukemias, MDS	
George M. Rodgers, MD	Hemophilia, ITP, TTP, SCA, IDA	
Martha Glenn, MD	Lymphomas	
John Sweetenham, MD	Lymphomas	
Josef Prchal, MD	MPNs, benign red cell disorders	
Charles Parker, MD	Porphyria, hemochromatosis, PNH	
Paul Shami, MD	Leukemias	
Ahmad Halwani, MD	Lymphomas	

2C: BMT / Myeloma (Kali Ditolla, Mary Lampas, Kristen Vinik, Alyson Clough)

Daniel Couriel, MD	BMT director	<p>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,</p>
Michael Boyer, MD	Adult/pediatric BMT	
Axel Zander, MD	BMT	
Djordje Atanackovic, MD	BMT, amyloidosis, MM	
Srinivas Tantravahi, MD	BMT	

Catherine Lee, MD	BMT, palliative care	and adjust immunosuppressants. Work closely with team to address patient and provider medication related concerns.
2D: Derm, sarcoma, head & neck, genetic counseling (Jordan McPherson, Dan Sageser)		
Kenneth Grossmann, MD	Medical oncologist: melanoma, NMSC, H&N	
Robert Andtbacka, MD	Surgeon: Melanoma, STS, GI	
R. Lawrence Randall, MD	Orthopedic surgeon: adult/pediatric sarcoma	
Joshua Schiffman, MD	Medical oncologist: genetic counseling	
2E: GI, neuro, sarcoma, IR, melanoma, breast (Steve Kirkegaard, Shelly Hummert, Kelly Fritz)		
Hung Khong, MD	Medical oncologist: breast/melanoma	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.
Adam Cohen, MD	Medical oncologist: neuro-oncology/breast	
Howard Colman, MD	Medical oncologist: neuro-oncology	
Randy Jensen, MD	Neurosurgeon	
Gita Suneja, MD	Radiation oncologist (others on 1 st floor, no dedicated pharmacist presence)	
Jennifer Wright, MD	Medical oncologist: Sarcoma	
Kevin Jones, MD	Orthopedic surgeon: Sarcoma	
Sarah Colonna, MD	Medical oncologist: Breast	
John Weis, MD	Medical oncologist: GI	
Courtney Scaife, MD	General surgeons	
Molly Gross, MD		
Sean Mulvihill, MD		
Thomas Pickron, MD		
Samuel Finlayson, MD		
Ryan O'Hara, MD		
Rulon Hardman, MD		
Aaron Frodsham, MD		
John Hyingstrom, MD	Surgeon: melanoma, STS	
3A: Breast (Christine Crossno, Tricia Jeppson, Shelly Hummert)		
John Ward, MD	Medical oncologist: breast	This clinic involves working with and shadowing physicians as well as reviewing chemotherapy orders for infusion.
Saundra Buys, MD		
Elizabeth Prystas, MD		
Anna Beck, MD	Medical oncologist: breast, SOS	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.
Adam Cohen, MD	Medical oncologist: breast, neuro-oncology	
Jane Porretta, MD	Surgeons: breast	
Regina Rosenthal, MD		
Edward Nelson, MD		
Cindy Matsen, MD	Plastic surgeons	
Jayant Agarwal, MD		
Christopher Pannucci, MD		
BMT Inpatient: 4 weeks		
Kristen Vinik, Mary Lampas, Kali Ditolla, Alyson Clough / BMT attending, hospitalist, APC	Usual census of 8-12 patients, peak 25. 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		
Donald Alexander, 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. Learn how to buy bread. 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.	<p>Daily topic discussions are conducted. Heavy focus on PK, pharmacology, spectrum of activity, and antibiotic dosing parameters in a variety of patient populations.</p> <p>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 how to buy bread.</p> <p>Stretches your ability of how to think about patients and understanding pharmacists' interventions beyond quoting recommended dose adjustments from tertiary resources.</p>
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.	<p>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).</p> <p>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.</p> <p>I liked spending time with the pharmacy techs learning to prepare chemo.</p>
Investigational Drug Services: 1 week		
Elyse MacDonald, Makala Pace, Winter Redd, Melissa Webb, Berrie Child	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	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.

	involving cancer patients, 25-30 phase I, and several first-in-human (~400 trials altogether).	
Management: 1 week		
Scott Silverstein, Dan Sageser, Makala Pace, Michael Filtz, William Black, Kelly Fritz	Brief exposure to what the management squad does for us and because of us. Experience during springtime to hopefully see some aspect of the budget process. Exposure to buyers, possibly MAC technicians, home infusion, specialty pharmacy, and other activities depending on what's happening in the department.	MUE required during residency to be assigned earlier in year. Other longitudinal activities ongoing including medication event reporting.
Capstone: 4 weeks		
Per site(s) chosen	Experience in whatever practice setting(s) we have that best align with your post-residency path. Intended to facilitate as much autonomy as possible while still having a preceptor in the building (though intentionally as invisible as possible) to support you and foster continued learning.	Important stepping stone to independent practice as a "real" heme/onc pharmacist. The team really looks to you for drug information and recommendations. This is an experience to put together skills from each learning experience throughout residency. I like that this is essentially an elective in the area I will practice when I'm done with residency.

ELECTIVE ROTATIONS

Preceptors / Attendings	Brief Practice Description	Resident Perspective
HICU (Oncology-specific intensive care)		
Stephanie Sanders, Kathryn Elofson, Corinne Bertolaccini / Medical-pulmonary attending, APCs	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 15 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	<p>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!</p> <p>I liked getting to see the surgical treatment of oncology in the OR.</p> <p>The team is very forgiving and has lots of fun. This is a very close knit group of interdisciplinary professionals.</p> <p>Most fun I've ever had at a journal club!</p>

	dealing with everything that can go wrong during the diagnosis or treatment of cancer.	
Supportive Oncology & Survivorship		
Steve Kirkegaard / Medical oncology/pain/psych attendings, APCs	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.	
Pharmacotherapy Outcomes Research Center (PORC)		
Diana Brixner	Explore a robust outcomes-based research department associated with the college of pharmacy where pharmacists work along side 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

Preceptors / Attendings	Brief Practice Description	Resident Perspective
Orientation		
Stephanie Sanders, William Black, Makala Pace	Over the course of 5 weeks, residents will be oriented to all aspects of pharmacy department including central and decentralized operations, discharge pharmacy dispensing, infusion processes, and innumerable policies & procedures as well as EHR (Epic) training.	
Management		
Scott Silverstein, Dan Sageser, Makala Pace, Michael Filtz, William Black, Kelly Fritz	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.	Very approachable and connected group of managers. Scotty loves getting to know residents!
Staffing		
William Black, Michael Filtz, Kelly Fritz	"Rotation" 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.	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.
Teaching & Learning		
Stephanie Sanders, others	"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	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.

	<p>preceptors. Weekly discussions on the molecular basis of cancer (based on an eponymous textbook) & pharmacology are led by preceptors & residents. Optional teaching certificate program, mentoring a P3 or P4 student seminar, or participation in the internal intern mentoring program.</p>	
<p>Residency Project</p>		
<p>Stephanie Sanders, others</p>	<p>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, optional 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.</p>	<p>I liked having ample preceptor support. RAC ensured the IRB process went smoothly.</p> <p>Excited to be a part of meaningful research. For example, past research projects were verbally presented at ASCO and gained attention of HCH leadership.</p>