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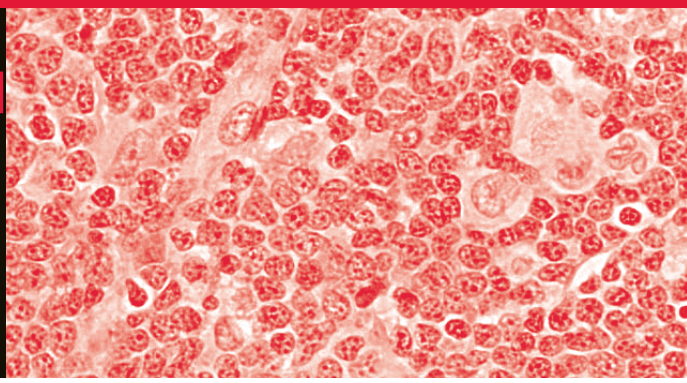
RESEARCH Report



Foundation Announces 2017 Grants for Lymphoma Clinical Researchers

2017 LRF Clinical Investigator Career Development Award recipient Lauren McLaughlin, MD, in her lab at Children's Research Institute, Children's National Medical Center, in Washington, D.C. Read more about Dr. McLaughlin's research on page 4.

The Lymphoma Research Foundation (LRF) has announced the names of ten lymphoma researchers who will be recipients of almost $1 million in Foundation Young Investigator Grants, focused on developing new treatments for lymphoma patients. The cornerstone of its investment in cutting edge lymphoma and chronic lymphocytic leukemia (CLL) research, LRF will award four Clinical Investigator Career Development Awards (CDA) as well as select six LRF Scholars to the Lymphoma Clinical Research Mentoring Program (LCRMP). These awards represent the Foundation's investment in early career clinician-scientists pursuing lymphoma clinical research.

CDA and LCRMP recipients are comprised of clinical fellows and junior faculty who are approaching the transition to faculty or in the first few years of their faculty position. This is a critical time in a researcher's career to receive funding and begin establishing a track record as an independent researcher in the field of lymphoma research. In fact, eight researchers who received a Postdoctoral Fellowship or CDA from LRF early in their careers were later elected to the Foundation's Scientific Advisory Board as a senior expert in the field.

This year's grant recipients are pursuing clinical research that seeks to improve outcomes and treatment options for a wide range of patient populations, including pediatric and adolescent Hodgkin lymphoma, transplant patients who develop post-transplant lymphoproliferative disorder, and elderly diffuse large B-cell patients, testing both the newest available novel agents and immunotherapies as well as exploring adjustments to current standard therapies that may reduce toxicity and improve effectiveness.

"The Lymphoma Research Foundation supports early career scientists not just to

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"LRF supports early career scientists not just to support the next generation but because these scientists are already pursuing questions that will be crucial to our continued improvement of lymphoma care."

FEATURED IN THIS ISSUE: Profiles of LRF's 2017 Clinical Research Grantees Page 4

The Foundation's 2017 grantees in the Lymphoma Clinical Research Mentoring Program and Clinical Investigator Career Development Award, including CDA recipient Alex F. Herrera, MD of Beckman Research Institute, City of Hope (pictured, left), discuss their research projects.

LETTER FROM THE CEO

Dear LRF Friends and Supporters,

The Lymphoma Research Foundation (LRF) is pleased to announce one of the largest classes of Young Investigator Grants in our history. To give proper attention to each of these exemplary seventeen grantees, we are featuring our clinical research awards – the Clinical Investigator Career Development Award and our Lymphoma Clinical Research Mentoring Program (LCRMP) – in this edition of *Research Report*, with our Postdoctoral Fellowships to follow in the Summer issue. We hope you enjoy learning more about these researchers and their innovative projects beginning on page 4.

As several of our new grantees note in their profiles, receiving a Lymphoma Research Foundation grant provides funding at a crucial stage in their career. The co-Chairs of the LCRMP program, Ann LaCasce, MD of Dana-Farber and Sonali M. Smith, MD of The University of Chicago, explain further why LRF's commitment to funding early career investigators is so crucial to the our continued progress towards a cure for lymphoma. See page 10 for their insights on this important issue

Supporting these promising researchers would not be possible without your donations and support for LRF's programs. Thank you for your part in helping the Foundation fundlife-saving research and support those affected by this disease.

Sincerely,

Meghan Gutierrez
Chief Executive Officer

New Grantees

[CONTINUED FROM PAGE 1]

support the next generation of lymphoma research but because these scientists are already pursuing questions that will be crucial to our continued improvement of lymphoma care," says Leo I. Gordon, MD, FACP of Robert H. Lurie Cancer Center at Northwestern University, the Chair of LRF's Scientific Advisory Board.

The four recipients selected this year represent the largest number of CDAs awarded by LRF in one grant cycle. 2017 also marks the inaugural granting of The Larry and Denise Mason Career Development Award, a CDA named in honor of a long-time Foundation benefactor to recognize a CDA recipient whose project will benefit a broad range of lymphoma patients. The 2017 Mason Career Development Award recipient is Alex F. Herrera, MD of Beckman Research Institute of the City of Hope. Lauren McLaughlin, MD, of Children's Research Institute/Children's National Medical Center, Jose Caetano Villasboas, MD of Mayo Clinic, Rochester, and Victor Yazbeck, MD of Virginia Commonwealth University Massey Cancer Center, round out this year's CDA class.

The LCRMP is LRF's mentoring and training program for early career clinical researchers in lymphoma. Now in its fourth year, the program participants – LRF Scholars – attend a week-long workshop in clinical research and professional development topics, with two follow-up activities over the next two years. LRF Scholars also receive grants over two years for professional development activities. This year's class includes Hema Dave, MD of Children's Research Institute/Children's National Medical Center, Justine M. Kahn, MD of Columbia University Medical Center, Neha Mehta-Shah, MD of Washington University Medical School in Saint Louis, Sarah Rutherford, MD of Weill Cornell Medicine, Jacob Soumerai, MD of Memorial Sloan

New Grantees

[CONTINUED FROM PAGE 2]

Kettering Cancer Center, and Ashley D. Staton, MD of Winship Cancer Institute at Emory University.

A central goal of the LCRMP is to help Scholars focus on a career as a lymphoma investigator and prepare to apply for CDA grants in the future; in the three grant cycles since the LCRMP began, four Scholars have gone on to receive LRF CDAs, with two – Dr. Herrera and Dr. Yazbeck – among the 2017 CDA class.

"The Lymphoma Research Foundation is committed to supporting innovative research from early career scientists to encourage and strengthen their commitment to a career in lymphoma research," says Meghan Gutierrez, Chief Executive Office of the Foundation. "With several past Young Investigator Grantees serving on the SAB as senior experts and the recent success of the LCRMP in preparing LRF Scholars for successful CDA applications, LRF's commitment to early career scientists has been successful in both the short- and long-term."

Profiles of the Career Development Award recipients begin on page 3; profiles of the Lymphoma Clinical Research Mentoring Program participants and a description of the workshop begin on page 5. Information on past recipients of LRF Grants may be found on the LRF website at lymphoma.org/recentawards .

2017 LRF Scholar Ashley D. Staton, MD of Winship Cancer Institute at Emory University, presents research at the LRF Mantle Cell Lymphoma Workshop in 2016.

The 2018 grant cycle will open for applications on May 24, 2017. Visit lymphoma.org/grants to view the RFPs when posted, or email researchgrants@lymphoma.org to receive email notification when RFPs are released.

The Lymphoma Research Foundation's Commitment to Research

40,000 **research hours** funded each year for early career lymphoma scientists

nearly **$60 million** in **research grants** awarded

360 **grants** awarded

94 **institutions** in **29** **states** and **6** **countries** have research **funded by LRF**

updated March 31, 2017

NEW GRANTEE PROFILES

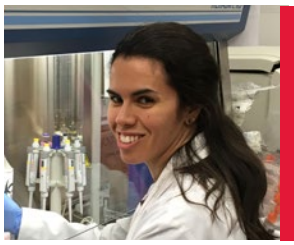
Alex F. Herrera, MD
Beckman Research Institute
at City of Hope
Larry and Denise Mason
Career Development Award

Testing Combination Immunotherapy in Relapsed Lymphomas

Pembrolizumab (Keytruda), approved in March 2017 by the U.S. Food and Drug Administration (FDA) for refractory Hodgkin lymphoma, is a promising checkpoint inhibitor immunotherapy. Dr. Herrera's Career Development Award (CDA) project will combine this therapy with vorinostat (Zolinza), a therapy which inhibits the histone deacetylases (HDAC), a protein which controls many cell functions including proliferation and survival. Dr. Herrera and his collaborators are testing the safety of this combination in a clinical trial for relapsed and refractory Hodgkin and non-Hodgkin lymphomas (particularly diffuse large B-cell lymphoma and follicular lymphoma). "If the treatment combination proves safe and we observe that it appears to be effective, we would plan to pursue additional studies to examine the effectiveness of this combination of immune therapies," Dr. Herrera says. "Together, these drugs could improve the treatment options for patients with recurrent or treatment-resistant lymphomas."

Dr. Herrera received his MD from Harvard Medical School, where he completed a residency at Brigham and Women's Hospital and a hematology/oncology fellowship at Dana-Farber Cancer Institute. At City of Hope he completed an additional fellowship in bone marrow transplant before joining the faculty as an Assistant Professor. During his training, he treated melanoma patients with checkpoint inhibitors just as those therapies were beginning clinical trials for lymphoma. "I became interested in finding the drugs that would work best to boost the effectiveness of immune therapy in lymphoma patients. The logical place to start was drugs that we already know are effective lymphoma therapies that might affect the immune system, including this combination of vorinostat and pembrolizumab," Dr. Herrera notes. "I am hopeful that as we learn how to optimize and combine these new treatments, we will develop therapy that can provide long-term remission for nearly all lymphoma patients."

A 2016 Lymphoma Clinical Research Mentoring Program(LCRMP) participant, Dr. Herrera is one of four LRF Scholars to go on to receive an LRF CDA. "[Through the LCRMP], I was able to develop my clinical research ideas in conjunction with and network with leaders in lymphoma research, which was a career changing experience. The LRF CDA will allow me to have protected time to build and grow my research program. Continued interaction with the LRF and the faculty involved with the organization will continue to be important for me as I progress in my career," Dr. Herrera says.



Lauren McLaughlin, MD
Children's Research Institute
Children's National Medical Center
Career Development Award

Developing "Off the shelf" T-cell Therapy for PTLD

Patients who undergo solid organ transplant (such as those for heart, kidney, liver, and lungs) have suppressed immune systems for the rest of their lives to prevent rejection of their transplanted organ. In some patients, immune suppression can allow a common virus called Epstein-Barr (EBV), to cause B cells from the patient's immune system to grow uncontrollably. The resulting complication is known as post-transplant lymphoproliferative disorder (PTLD), which can be deadly if not effectively treated. Immunotherapies such as chimeric antigen receptor (CAR) T-cells have shown some effectiveness in some lymphomas, but CAR T-cell therapy targets both malignant and healthy B cells, and thus may weaken a patient's immune system while fighting cancer.

Working with her collaborators at Children's National Medical Center, Dr. McLaughlin has developed a ready-made T-cell product targeting the latent membrane protein (LMP) antigens, markers of EBV-infected cells which stimulate a patient's T-cell production to fight the EBV infection and, thus, the PTLD. Her Career Development Award (CDA) project is a pilot study of these LMP-specific T-cells. Dr. McLaughlin's trial is facilitated through the Children's Oncology Group (COG), the National Institutes of Health (NIH) clinical trials cooperative group specializing in pediatric cancer, and is the first cellular therapy trial within COG. "It is our hope that infusing these T cells into patients will help cure their PTLD while also strengthening their immune system," Dr. McLaughlin says.

Dr. McLaughlin received her MD from Virginia Commonwealth University before a pediatric residency at the University of Vermont, Burlington and a fellowship at Children's National Medical Center, where she is an Research Instructor at both CNMC and George Washington University. Already interested in lymphoma when she began her fellowship, she was excited at the opportunity to work with Catherine Bollard, MD, an expert in cellular therapy and EBV-lymphoma. "I loved the fact that our lab is truly translational and I get to do both bench work as well as participate in clinical trials," Dr. McLaughlin notes. She adds that her LRF grant is crucial to the advancement not only of this study but her career, "This LRF CDA allows me the support needed to continue working under my mentor, Dr. Bollard, so that I can remain an active participant once this study opens," she says. "I am so honored to have been awarded the LRF Career Development Award and look forward to a very productive three years!"

Jose Caetano Villasboas, MD

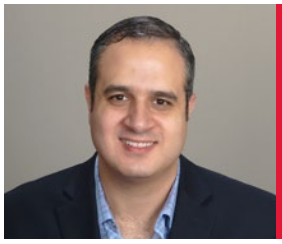
Mayo Clinic, Rochester
Career Development Award

Understanding the Role of the Immune System in DLBCL

Although checkpoint inhibitors such as nivolumab (Opdivo) are demonstrating effectiveness in a wide variety of lymphomas, diffuse large B-cell lymphoma (DLBCL) has not shown the same degree of response. Dr. Villasboas and his colleagues believe the influence of DLBCL cells on the immune system may be blunting a patient's immune response, even when boosted by these new therapies. For his Career Development Award (CDA) project, Dr. Villasboas will analyze patient samples using mass cytometry, a technique which allows researchers to obtain a detailed understanding of the cell signaling pathways that make up tumor cells. He will also test a combination therapy of nivolumab and varlilumab (an antibody which targets the protein CD27) in hopes that the two therapies combined will boost the effectiveness of nivolumab in DLBCL. "Our hope is that the findings originated from this project will lead to increased understanding of the role of the immune system in DLBCL and provide us with tools to reprogram it against the cancer, improving outcomes for patients with DLBCL and taking us closer to a universal cure," Dr. Villasboas says.

Dr. Villasboas received his MD from the Universidade Federal da Bahia in Brazil, before completing a residency at Jackson Memorial Hospital in Miami. He recently completed both a clinical and research fellowship at Mayo Clinic, where he is currently a Senior Associate Consultant. Intrigued by the complexity of lymphoma during his training, Dr. Villasboas also developed an interest in immunotherapy after seeing the results of clinical trials of these drugs in melanoma. "As I focused my clinical practice in patients with lymphoma my hope was that improved outcomes would be extended to these patients," he notes, before adding that unfortunately we have not seen as dramatic a change as in solid tumors, particularly for aggressive lymphomas. "Motivated by my patients, I have decided that my long-term goal is to understand how the patient's immune system contribute the treatment failures in DLBCL and to translate this knowledge onto new treatments for patients who cannot be cured with standard therapies."

Dr. Villasboas notes that he is receiving LRF funding at a "critical time" in his career. "With the support provided by the award I will be able to dedicate a significant amount of my time to my project, allowing me to bring it to completion within the proposed timeline," he says. "Overall, the LRF CDA will have a positive long-range impact, increasing significantly my chances to launch a career as an independently-funded physician scientist."



Victor Yazbeck, MD

Virginia Commonwealth University
Massey Cancer Center
Career Development Award

Studying Chemotherapy-free Combination Therapy in CLL

Chronic lymphocytic leukemia (CLL) occurs frequently in older patients, creating a need for less toxic therapies particularly for those patients who must undergo additional therapy when their disease does not respond to initial treatment. Single agent venetoclax (Venclexta), an inhibitor for the protein BCL-2 has shown significant effectiveness in CLL but the majority of patients will develop resistance and relapse. Recent research suggests that PI3K inhibitors such as idelalisib (Idela), when used in combination with BCL-2 inhibitors can help circumvent the biological process by which cells develop a resistance to these therapies. With that in mind, Dr. Yazbeck's Career Development Award project studies venetoclax in combination with idelalisib and rituximab in relapsed CLL. "I have been actively exploring therapeutic approaches that take advantage of the dependence of lymphomas on specific survival pathways, and understand the mechanism of resistance to current therapies," Dr. Yazbeck says. "Therefore, it seems natural that I propose the current combination with the goal of achieving a very deep response: defined as minimal residual disease negative status that is the first step toward cure."

Dr. Yazbeck received his MD from Saint-Joseph University in Beirut, Lebanon, before postdoctoral studies at MD Anderson Cancer Center, a residency at the State University of New York (SUNY) Upstate Medical University and a fellowship at the University of Pittsburgh Cancer Institute. A 2015 participant in LRF's Lymphoma Clinical Research Mentoring Program (LCRMP), Dr. Yazbeck is one of four LRF Scholars to proceed to a CDA. "Through the LCRMP, I received formal mentoring and training in clinical trial conduct, and the opportunity to meet and work with the leaders in the field," Dr. Yazbeck notes. "The current CDA will provide me with crucial support in order to continue to devote my time to lymphoma research that will hopefully lead to significant improvement in patients' outcome. I hope to remain involved in LRF diversified activity portfolio, in particular mentoring of fellows and junior faculty."

Dr. Yazbeck adds that his research into chemotherapy-free combinations is inspired by the success of a similar regimen in transforming acute promyelocytic leukemia from a disease with poor outcomes to one that is highly curable. "I hope that by improving our understanding of lymphoma biology, and the underlying mechanisms of resistance to targeted therapies, we will be able to achieve a similar outcome in lymphoid malignancies."

Foundation Workshop Provides Research, Professional Development Opportunities to Early Career Scientists

2017 LRF Scholars (L to R): Sarah Rutherford, MD of Weill Cornell Medicine, Justine Kahn, MD of Columbia University, Ashley D. Staton, MD of Emory University, Neha Mehta-Shah, MD of Washington University in Saint Louis, Jacob Soumerai, MD of Memorial Sloan Kettering Cancer Center, and Hema Dave, MD, of Children's National Medical Center.

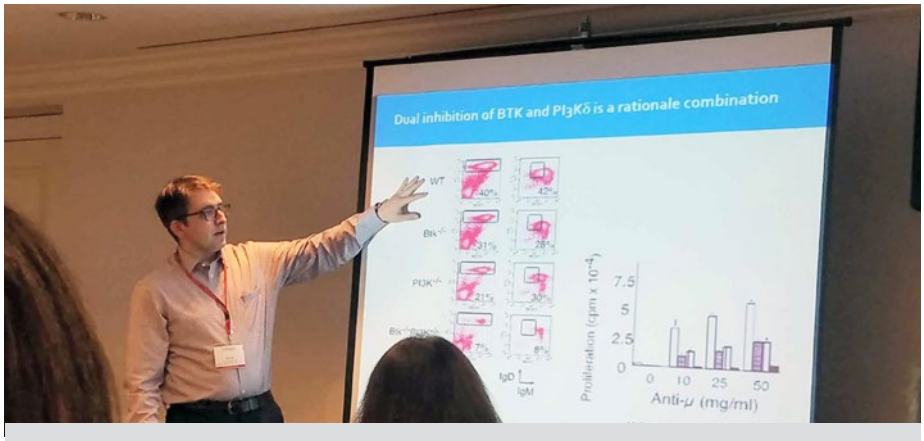
The fourth year of the Lymphoma Research Foundation's (LRF) Lymphoma Clinical Research Mentoring Program (LCRMP) Workshop was convened in Washington D.C. in March 2017. Though part of LRF's Young Investigator Grants program, the LCRMP distinguishes itself from the research grants in that portfolio with a focus on programmatic elements, including the week-long LCRMP Workshop, that provide clinical fellows and junior faculty pursuing clinical lymphoma research with mentoring and presentations from experts in the field.

The LCRMP Workshop is the centerpiece of the mentoring program, bringing LRF Scholars together with a faculty composed of expert clinical researchers, statisticians, and pathologists specializing in lymphoma. The Scholars present a proposed clinical research project to the faculty at the beginning of the workshop, then work with faculty in daily small group sessions to receive feedback on the practical design of their projects as well as the underlying science. The Scholars conclude the program by presenting revised versions of their projects along with aims for their career development plan, a crucial component of many early career grants.

The Workshop's curriculum, overseen by LCRMP Co-Chairs and LRF Scientific Advisory Board members Ann LaCasce, MD of Dana-Farber Cancer Institute, and Sonali M. Smith, MD of The University of Chicago, also includes faculty presentations on a variety of topics including designing and administering clinical research studies, building and leading a research team, and working collaboratively within the National Cancer Institute Cooperative Group structure and/or in partnership with the pharmaceutical industry. These presentations are complemented by other talks and roundtable discussions offering career development advice for successful publications, grant applications, and work-life balance.

This year's six Scholars, profiled on pages 7 through 9, are pursuing projects in a wide variety of subtypes and patient populations. LRF is particularly pleased to include for the first time two pediatric oncologists, specializing in pediatric and adolescent/young adult (AYA) lymphomas. As LRF's AYA Lymphoma Initiative seeks to build more collaborative relationships between the pediatric and adult researchers that both treat this population, building these relationships among early career researchers will help encourage future collaborations.

"Many of us have been blessed with great mentorship," noted one LRF Scholar as part of their post-program evaluation, "This workshop has gone above and beyond. It is an honor to spend this much quality time with great leaders in the field. The faculty were outstanding and so generous."



2017 LRF Scholar Jacob Soumerai, MD of Memorial Sloan Kettering Cancer Center, presents his project at the LCRMP Workshop in Washington, D.C. in March 2017.

Hema Dave, MD
Children's Research Institute
Children's National Medical Center
LRF Scholar

Testing Less Toxic Options for Relapsed Hodgkin Lymphoma

"10-20% of Hodgkin lymphoma patients are resistant to treatment and difficult to cure," Dr. Dave says, introducing her LCRMP project. She adds that this resistance arises from the unique structure of HL, in which the tumor cells are surrounded by a microenvironment that allows it to escape normal immune system functions. "The goal of this project is to understand how we can change the tumor microenvironment sufficiently to unleash pre-existing anti-tumor immune responses and allow more successful incorporation of killer T-cells [immune cells that attack malignant cells in normal immune system functions]." Recently, both targeted agents such as brentuximab vedotin (Adcetris) and PD-1 checkpoint inhibitors such as nivolumab (Opdivo) and pembrolizumab (Keytruda) have had some success in relapsed HL. Dr. Dave and her collaborators hope to determine if a combination of PD-1 inhibitors and killer-T cells that have been programmed to recognize HL cells will boost immune function and prompt an effective long-term response for patients who have failed brentuximab. Since a large number of HL patients are children, adolescents, or young adults, Dr. Dave is hopeful that this combination will also have fewer long-term side effects than conventional chemotherapy, as well as address the "significant unmet medical need" of effective therapies for relapsed HL.

Dr. Dave completed her MD at the University of Mumbai and an MPH in Epidemiology from the University of Massachusetts before pursuing a career as a pediatric oncologist with an internship at Children's Hospital of Michigan and a residency and fellowship at Johns Hopkins Hospital and National Cancer Institute before becoming an Assistant Professor at Children's National Medical Center. She notes she was drawn to hematologic cancers because of the breakthrough discoveries over the last few decades, but adds "the most challenging and, at the same time, intellectually stimulating, fact is the static survival rates of patients who relapse or who are not able to achieve remission."

Dr. Dave hopes that the LCRMP will offer an opportunity to gain valuable mentorship and skills. "With the LCRMP, I will be able to increase my knowledge about clinical trial design and management skills, as well as build long-term mentoring relationships," she says. "I hope to get constructive critiques so that I can design trials that are realistic scientifically, and make a difference to the outcomes of children with hematologic malignancies. I am very thankful to LRF for my selection and for all the work the Foundation does in search of the best cure for both adults and children with lymphoma."

Justine Kahn, MD
Columbia University Medical Center
LRF Scholar

Examining Survival Rate Disparities in AYA Lymphomas

Though current treatment strategies have contributed to excellent overall outcomes in children and adolescents with Hodgkin lymphoma (HL), large population-based studies have continued to demonstrate survival disparities by race and ethnicity. While these studies suggest a serious health disparity, they do not include information on treatment, patient or disease-related variables. This leaves a critical question unanswered: Would these disparities still exist if external factors, such as socioeconomic status, healthcare access, and disease stage at diagnosis were otherwise equal? "My LCRMP project aims to address this question by analyzing outcomes using the Children's Oncology Group HL trials database," Dr. Kahn notes. "If survival differences are observed after controlling for these variables, we will have identified a public health disparity that warrants a critical re-evaluation of current clinical practice paradigms. Conversely, if disparities are reduced, research aimed at addressing barriers to trial enrollment in at-risk populations can be implemented."

Dr. Kahn received her MD from Icahn School of Medicine at Mount Sinai in New York. She completed her pediatric residency at Mount Sinai Kravis Children's Hospital and her pediatric hematology/oncology fellowship at New York Presbyterian-Columbia University Medical Center, where she is currently an Assistant Professor. She is also completing an MS in Patient Oriented Research through the Mailman School of Public Health at Columbia University. During her fellowship, Dr. Kahn became aware of the challenges faced by the pediatric and adolescent/young adult (AYA) patients in her oncology clinic. It was through caring for AYA patients that she came to understand this group as a uniquely vulnerable, and largely under-studied population. "Despite excellent survival statistics, unanswered questions about biology, diagnostics, therapy, post-treatment surveillance and long-term survivorship are myriad and further research is imperative. Without focused research geared toward investigating the unique cancer burden of AYAs with lymphoma, our ability to make informed decisions for these patients remains limited."

Dr. Kahn says that the LCRMP will help her acquire the critical (and nuanced) skills needed to succeed as an independent investigator in lymphoma research. "These skills are often acquired after years of trial and error, which can greatly hinder the success of an early investigator. The guidance and education provided by the LCRMP will thus be an absolutely invaluable part of my becoming an independent and successful clinician-investigator."

Neha Mehta-Shah, MD
Washington University in Saint Louis
LRF Scholar

Identifying Residual Disease in PTCL

PTCL is a group of rare lymphomas most commonly treated with combination chemotherapy autologous stem cell transplant. However, it is often difficult to identify the patients who will most benefit from transplant after therapy, as residual lymphoma cells can be difficult to detect via CT (computerized tomography) or PET (positron emission tomography) scans. Dr. Mehta-Shah's LCRMP project will evaluate two methods for testing patient blood samples to detect these residual PTCL cells. "Patients with these rare diseases suffer from our lack of knowledge regarding how to tailor treatment to specific disease types," Dr. Mehta-Shah says. "These techniques may also be used to develop liquid biopsies for mutational profiling of tumors or serve as a method to help us determine which patients are more likely to relapse from these aggressive lymphomas."

Dr. Mehta-Shah says that "she was one of those kids who knew she wanted to be a doctor in elementary school," following in the footsteps of her mother, a pediatrician. "Then, in high school, I spent time with a pediatric hematologist/oncologist and became involved in laboratory research. After that, I realized I wanted to pursue a career in academic oncology." She received her MD from Northwestern University's Feinberg School of Medicine, where she became acquainted with Steven Rosen, MD and his research on cutaneous T-cell lymphoma. She completed her residency and fellowship at Memorial Sloan Kettering Cancer Center under the direction of Steven Horwitz, MD before moving to Washington University in Saint Louis, where she is an Assistant Professor. "Steve [Horowitz] taught me to think critically, doctor compassionately, lead gracefully, and reach for the stars," she notes.

Dr. Mehta-Shah hopes to develop her career to become a leader in clinical research efforts to improve treatment for patients, as well as teach and mentor others. She sees her participation in the LCRMP as a step forward in this development. "Improving our knowledge about lymphoma from all fronts is critical to advancing the field. I anticipate that the mentorship that the Workshop will provide will be equally valuable to my success." She adds that, ultimately, her patients provide the greatest inspiration to continue her work. "They are the reason we do all of this research. I hope that in my lifetime I can see them reap the benefits of the efforts of our research community."

Sarah Rutherford, MD
Weill Cornell Medicine
LRF Scholar

Using Imaging to Tailor Therapy for Elderly DLBCL Patients

Most DLBCL patients with advanced stage disease receive a combination therapy called R-CHOP [rituximab, cyclophosphamide, doxorubicin, vincristine, prednisone], given in six cycles every three weeks. Though effective for two-thirds of patients, R-CHOP is an intense therapy that regularly has side effects for patients, particularly those above 70. Dr. Rutherford's LCRMP project seeks to use imaging to tailor treatment plans for elderly (above 70) diffuse large B-cell lymphoma (DLBCL) patients. Dr. Rutherford and her collaborators would like to use the PET/CT (positron emission tomography or computerized tomography) scan regularly done after two R-CHOP treatments to gauge which patients are best responding to treatment. "We predict that a substantial number of patients have no evidence of lymphoma on the interim PET/CT and can be considered for a total of four rather than six R-CHOP treatments," Dr. Rutherford says. "The ultimate goal is to decrease side effects that patients experience while maintaining excellent cure rates in DLBCL."

Dr. Rutherford entered medical school at the University of Virginia planning to become a hematologist/oncologist, when her father was diagnosed with Hodgkin lymphoma in her first year. "As he neared the completion of chemotherapy, I had the opportunity to spend a summer working with [past LRF Scientific Advisory Board Chair] Dr. John Leonard at Weill Cornell. This was a defining moment in my training and led me to pursue a career focused on lymphoma." After a residency at Thomas Jefferson University, Dr. Rutherford returned to Weill Cornell to complete her fellowship and ultimately join the faculty as an Assistant Professor. She hopes to continue to pursue clinical research for aggressive lymphomas such as DLBCL as her career progresses. "My goals are to decrease therapy for patients with favorable characteristics and to use novel treatment strategies to improve responses in patients with more aggressive disease."

Dr. Rutherford notes that her career goals will be aided by her participation in the LCRMP. "Under the guidance of the mentors of the LRF program, I will make appropriate adjustments to my initial proposal in order to solidify the foundation for a successful clinical trial," she says, adding that she hopes to open her DLBCL trial at additional institutions represented by mentors and Scholars in her LCRMP class. "I will continue to work closely with colleagues at Weill Cornell and those I meet through LRF on development of clinical studies focusing on patients with aggressive B-cell lymphomas. The LCRMP is a key step that will aid in my success on this path."

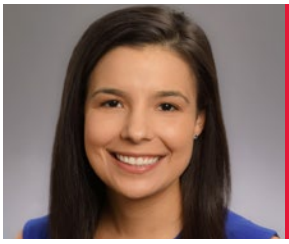
Jacob Soumerai, MD
Memorial Sloan Kettering Cancer Center
LRF Scholar

Testing New Novel Agents for B-Cell Lymphomas

First-in-class inhibitors of phosphatidylinositol-3-kinase δ (PI3Kδ), such as idelalisib, and Bruton's tyrosine kinase (BTK), such as ibrutinib, have been highly effective in lymphoma patients, but as Dr. Soumerai notes "complete responses are uncommon and require continuous therapy, and therapy is frequently discontinued for toxicity or disease progression." Dr. Soumerai's LCRMP project will test BGB-3111 (a new BTK inhibitor) and ME-401(a new PI3Kδ inhibitor) as a combination therapy in B-cell lymphomas and chronic lymphocytic leukemia (CLL). He and his collaborators hope using these drugs in combination will have a more powerful effect on lymphoma cells, help patients achieve longer progression-free responses, and ultimately avoid the need for continuous therapy.

Prior to attending medical school, Dr. Soumerai studied Waldenström macroglobulinemia (WM) with Steven Treon, MD, PhD, at Dana-Farber Cancer Institute. "We made several important contributions to this field, and I personally felt very proud to have played an important role in research that contributed to our understanding of WM and had a positive impact on patient care," he says. The experience prompted him to pursue his MD at Tufts University and Internal Medicine Residency at the Massachusetts General Hospital. He subsequently joined Memorial Sloan Kettering as a clinical fellow where he is mentored by Andrew Zelenetz, MD, PhD (a member of LRF's Scientific Advisory Board). Dr. Soumerai is looking forward to participating in the LCRMP and the "unique opportunity to be mentored by and learn from successful leaders in the field of lymphoma."

Dr. Soumerai hopes to develop his career to establish a clinical trials research program focusing on combinations of targeted therapies. This summer he will transition to a faculty position at Massachusetts General Hospital in Boston. "I can think of nothing that would make me happier professionally than a career in which I move the field forward and improve patient care," he says. "That is the spark that drew me to a career in medicine, and the torch I will carry throughout what I hope will be a long and productive career in the field of lymphoma."



Ashley D. Staton, MD
Winship Cancer Institute of Emory University
LRF Scholar

Preparing Post-Transplant DLBCL Patients for CAR T-cells

In aggressive DLBCL, patients who relapse following autologous stem cell transplant have very poor survival rates. For these patients, the growing data that chimeric antigen receptor (CAR) T-cell immunotherapy is effective in lymphomas offers some hope for an alternative treatment. However, CAR-T cell immunotherapy currently requires that a patient's own T-cells from his/her immune system be extracted, treated, and reintroduced to the patient in order to target the malignant cells, and, as Dr. Staton notes, "After many lines of treatment most patients have immune cells that won't divide and function as hoped." Dr. Staton's LCRMP project will evaluate whether idelalisib (Zydelig) can boost the number of active T-cells in this group of patients, in the hopes of making a potential CAR T-cell treatment more effective. The project also seeks to identify patients at risk for post-transplant relapse through measurement of a patient's absolute lymphocyte/monocyte ratio (ALC/AMC), a measurement found in a patient's peripheral blood cells that has been shown in prior studies to be associated with poor prognosis.

Dr. Staton received her MD from Louisiana State University and completed her residency at Ochsner Medical Center in New Orleans before going to Emory for her clinical fellowship; she will transition to a faculty position at Duke University this summer. It was through her mentor at Emory, Christopher Flowers, MD (an LRF Scientific Advisory Board member and past-chair of the LCRMP), that she became interested in lymphoma. "He makes you want to be a better doctor and researcher who will leave a lasting mark on the evolution of how we treat lymphoma," she says. She is looking forward to the relationship building the LCRMP has become known for. "I have colleagues who have completed this program and the relationships started at the Workshop have been fundamental throughout their early career."

Dr. Staton adds that her commitment to her LCRMP project, and lymphoma research in general, was born out of a desire to help those patients for whom current therapies are unsuccessful. "The lymphomas that do not respond to chemo/radiation or transplant are scary," she says. However, Dr. Staton notes that the last five years have brought new therapies – including CAR T-cell immunotherapy – that give her hope for the future. "The new therapies and technologies that are effective in this group of patients are leading to cancers shrinking and patients living longer."

In Our Search For a Cure for Lymphoma, Support for Early Career Scientists is Crucial

Ann LaCasce, MD and Sonali M. Smith, MD

The last decade has seen a number of exciting developments in lymphoma research, with new therapies, improved treatment strategies, and a more developed understanding of lymphoma biology improving patient treatment and outcomes across a number of lymphoma subtypes. Though we are poised for even more exciting developments in the next decade, a crucial portion of that future research will be done by researchers and clinical scientists just now beginning their careers. The Lymphoma Research Foundation's support for these early career scientists in the form of research grants and mentoring programs, is vital to the success not just of the individual scientists, but to the future of lymphoma research as a field.

As early career clinical scientists reach the end of their fellowship training and seek their first faculty positions, they often find themselves at a crucial crossroads. Heavy clinical loads and other time period restrictions can make it difficult to find adequate time for medical research. Studies of early career medical school graduates show that even those with a strong interest in research may end up leaving academia and other research institutions due to a lack of support, both in terms of funding and time. Early career grants, like those supported by the Lymphoma Research Foundation, provide both salary support and protected research time at this vulnerable point in a researchers' career.

Mentoring programs, like the LRF's Lymphoma Clinical Research Mentoring Program (LCRMP), also help retain clinical scientists in medical research. These programs are particularly helpful for retention of women and underrepresented minorities, and yet studies suggest a persistent gender gap when it comes to participation in clinical scientist training programs. As Co-Chairs of this year's LCRMP Workshop, we are proud that the LRF LCRMP has bucked this trend; 53 percent of LRF Scholars in the four years of the program have been women, including five of six participants this year. Retention of a diverse workforce that reflects the general population is also essential to ensuring the needs of all patients are considered in the development of clinical trials and other research projects.

Ann LaCasce, MD (L) and Sonali M. Smith, MD

Though the number of physicians in the United States has nearly doubled since 1980, the number of U.S. physicians for whom research is the primary activity has declined from 3.6 percent in 1982 to 1.6 percent in 2011. Correlation has also been found between the percentages of graduating medical students with strong interest in a research career and periods of rapid increases in NIH appropriations; in the current environment for federal funding, our best defense against losing a generation of potential researchers is to support as many early career scientists as possible through the LRF and other private foundations.

Eight former recipients of LRF early career grants —including Dr. LaCasce, who received a Clinical Investigator Career Development Award in 2005— now sit on LRF's Scientific Advisory Board, a group made up of leaders in the field. Supporting today's early career researchers develops tomorrow's lymphoma research leaders, and our continued progress towards a cure for this disease.

Ann LaCasce, MD is Associate Professor of Medicine at Harvard Medical School and Director of the Dana-Farber/Partners CancerCare Hematology-Medical Oncology Fellowship Program. Sonali M. Smith, MD is Professor of Medicine and Director of the Lymphoma Program at the University of Chicago. Both are Co-Chairs of the 2017 LRF Lymphoma Clinical Research Mentoring Program (LCRMP) and members of the LRF Scientific Advisory Board.

SCIENTIFIC ADVISORY BOARD

The Lymphoma Research Foundation's volunteer Scientific Advisory Board, comprised of 45 world-renowned lymphoma experts, guides the Foundation's research activities, seeking out the most innovative and promising lymphoma research projects for support.

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About the Research Report

Research Report is a publication of the Lymphoma Research Foundation, providing the latest updates on our grantees and their progress, as well as on the work of the Foundation. The Lymphoma Research Foundation is the nation's largest non-profit organization devoted to funding innovative lymphoma research and serving the lymphoma community through a comprehensive series of education programs, outreach initiatives, and patient services.

Donor Spotlight

Martin Bast of Omaha, Nebraska is in his ninth year on the Planning Committee of the Nebraska Lymphoma Walk, and his third as Chair or Co-Chair. The Lead Coordinator for the Lymphoma Study Group at the University of Nebraska Medical Center, Martin initially became involved with LRF when asked to join the organizing committee to facilitate the first Nebraska Lymphoma Walk. "Having a database of key contacts made me a strategic partner to align with," he notes. Under his leadership, the Nebraska Walk has raised nearly $600,000. Martin and his family also personally sponsor the event and have raised nearly $76,000 via his own walk teams. Martin adds,"It has been heartwarming to step out of what can be impersonal research and link arms with the patients themselves in this common cause, join the comradery of a devoted planning committee, and witness the ongoing encouraging support across our community."

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LRF's New Mailing Address

Please note LRF's new national headquarters address:

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LRF PLANNED GIVING

By including LRF in your estate planning, you will ensure the future success of the organization in its efforts to eradicate lymphoma and serve those touched by this disease. A wide range of gift plans can be tailored to fit your philanthropic and financial goals.

lymphoma.org/plannedgiving