

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.

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Lymphoma Research Foundation Awards over 2 Million Dollars In Research Grants

The Lymphoma Research Foundation (LRF) is pleased to announce the awarding of over two million dollars through its Disease-Specific Focus Area Grants. This year's grants support experienced researchers studying chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL/SLL), follicular lymphoma (FL), and mantle cell lymphoma (MCL). Projects include a collaborative aspect across disciplines and/or institutions, and are required to incorporate human tissue samples to ensure future clinical application. As lymphoma consists of more than 60 subtypes, each with different genetic characteristics and often, different responses to standard therapies, the Focus Area Grants allow LRF to maximize the potential therapeutic impact in specific lymphoma subtypes while also building insight into lymphoma in general.

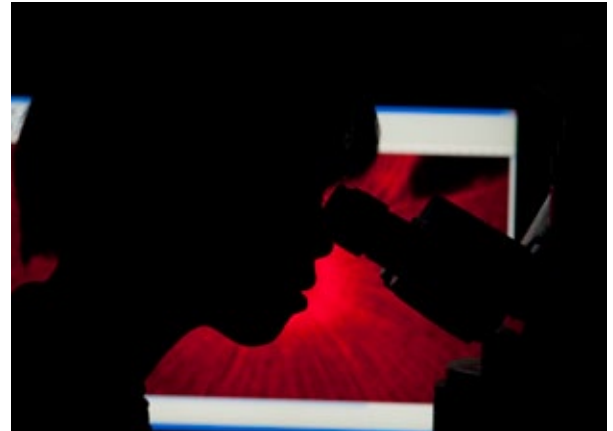


Photo: Rhoda Baer, National Eye Institute (NEI)

Three MCL Exploratory/Developmental Grants and two CLL/SLL Collaborative Grants were awarded for \$250,000 over two years; Selina Chen-Kiang, PhD of Weill Cornell Medical College, Christoph Rader, PhD of The Scripps Research Institute, and Mariusz A. Wasik, MD of the University of Pennsylvania, received MCL grants, while Januario E. Castro, MD of the University

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Three New Members Add Their Expertise to LRF's Scientific Advisory Board

On July 1, 2013, three distinguished researchers joined the Lymphoma Research Foundation's Scientific Advisory Board (SAB). Sandeep Dave, MD, of Duke University, Laura Pasqualucci, MD, of Columbia University, and Eduardo M. Sotomayor, MD, of Moffitt Cancer Center were each elected to five-year terms by the existing SAB membership.

The SAB, a 45-member panel of leading lymphoma researchers and oncologists, formulates LRF's research portfolio through a variety of activities. Members regularly review grant proposals and make recommendations regarding research priorities and funding to LRF's Board of Directors, evaluate the progress of on-going research projects, and guide the strategic direction of LRF's research

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Dear Friends,

It gives me great pleasure to write to you as the Lymphoma Research Foundation's (LRF) new Chief Executive Officer. I have already had the opportunity to speak with many of the Foundation's dedicated volunteers, donors, and

researchers and I am energized about the future direction of LRF, as we explore new ways to advance our shared mission. In the months ahead I look forward to meeting even more members of the lymphoma community, to hearing your ideas, and to working together to build upon the amazing progress you will read about in this edition of the *Research Report*.

This summer, LRF funded some of the best minds in lymphoma research. As you will read in our headline story, the Foundation announced more than \$2 million in research grants supporting three lymphoma focus areas. You will also read on page one that we recently welcomed three new members to our Scientific Advisory Board. This incomparable group of lymphoma clinicians and scientists continue to guide the LRF research portfolio and education initiatives. In September we will lead the nation's efforts to recognize Blood Cancer Awareness Month and launch the first-ever mobile app for lymphoma patients. You can learn more about these efforts in the Foundation Update. We will also once again host the unrivaled North American Educational Forum on Lymphoma in Brooklyn, NY, September 27th to 29th.

This is an extraordinary time for the Foundation, and our mission is as urgent and important as ever. Thank you for your support of our mission, for your dedication to our patient community, and for your commitment to advance research. Our partnership and collaboration is at the heart of an exciting future at LRF. I look forward to working with you to do all that we can to eradicate lymphoma and serve those touched by this disease.

Yours in purpose and progress,

Elizabeth Thompson
Chief Executive Officer

New SAB Members

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programs and consortia. LRF is pleased to add the new members' expertise and insight to the SAB, and welcomes their contributions.

"The expertise of the newly elected Scientific Advisory Board members will complement that of the SAB and have a meaningful impact on the lymphoma community, said John P. Leonard, MD of Cornell Weill Medical College and SAB Chair, "I look forward to working with the newest SAB members as we continue to make strides to eradicate lymphoma."



Sandeep Dave, MD, MS

**Duke Cancer Institute &
Institute for Genome
Sciences & Policy
Chapel Hill, NC**

As a student in the MD/MBA combined program at Northwestern University, and later as a resident in internal medicine, Dr. Dave worked with Drs. Steve Rosen, Jane Winter, and current SAB Chair-Elect Leo Gordon, who piqued Dr. Dave's interest in lymphoma. Later, as a hematology-oncology fellow at the National Institutes of Health (NIH), Dr. Dave's interest led him to work with SAB member Louis Staudt. "He was an outstanding mentor while I was in his lab, and my time there set me on an irreversible course to a career in lymphoma research," Dr. Dave says. He is

currently an Associate Professor in the Division of Hematologic Malignancies and Cellular Therapy at Duke University and Director of the Molecular Genetics and Genomics program at Duke Cancer Institute, where he runs his own lab (dav-elab.org).

Possessing an MS in Biomedical Engineering as well as his MD, Dr. Dave's work focuses on the application of high throughput technologies, including microarrays and massively parallel sequencing, to better understand how different genetic mutations come together to result in lymphoma. These "big data driven approaches" have helped Dr. Dave and his team approach a wide range of problems in lymphoma, including better defining the role of microRNAs in lymphoma, identifying novel genetic mutations and trying to understand patient resistance, and targeting therapies on a molecular level. "High throughput sequencing has provided a powerful tool for better understanding virtually every human disease," Dr. Dave says, "Big data approaches will transform how we diagnose and treat cancer."

Dr. Dave says his research is driven by "the knowledge that our current methods for diagnosing and treating cancers are simply inadequate. We must do better." Additionally, the fresh perspective he receives from the students, clinical fellows, and junior faculty he works with at Duke helps him stay engaged with his work.

Dr. Dave joins the SAB after several years as a member of LRF's MCL Consortium, during which time he also served as a reviewer for LRF grants. He is looking forward to working closely with other recognized leaders in the field and the opportunity to help guide the direction of lymphoma research. "The LRF SAB plays an important role in how research dollars are spent specifically towards lymphoma," he says, "and to recognize the potential of high risk projects that may otherwise go unfunded."



Laura Pasqualucci, MD
Columbia University
H. Irving Comprehensive
Cancer Center
New York, NY

Dr. Pasqualucci is Associate Professor of Clinical Pathology and Cell Biology for Columbia University's Department of Pathology and Institute for Cancer Genetics in New York. Her clinical and research interests include the molecular genetics of lymphoma and the experimental modeling of the lesions identified through these approaches, with a focus on diffuse large B-cell lymphoma (DLBCL). She is particularly interested in DLBCL because it represents a compelling clinical problem and is a challenging intellectual target for a molecular biologist. "It is the most common of all B-NHLs and, despite the remarkable advances over the past few years in its diagnosis and treatment, we are still unable to cure almost 50 percent of patients, so more effort is needed" she says. "I think there is no doubt that understanding the molecular basis of DLBCL's heterogeneity will be key in advancing our ability to treat patients."

Her research studies the DNA of lymphoma cells in search of alterations that may have caused the initial derailment and subsequent uncontrolled expansion of the tumor cell. "Cancer is a genetic disease: identifying the genes that have been hijacked by the tumor cell and the programs that are necessary for its growth and

survival are instrumental in understanding how to recognize the disease, attack it, and identify patients who may benefit from different therapies."

Dr. Pasqualucci received her MD from the University of Perugia Medical School in Italy, and completed her residency at Perugia's Institute of Hematology and Bone Marrow Transplantation Unit before holding fellowships at the Freie Universität Berlin in Germany and Columbia University in New York. She has been a member of the Lymphoma Research Foundation's Panel of Scientific Advisors since 2011 and has served as a reviewer for multiple LRF grant cycles. Dr. Pasqualucci currently serves on the Editorial Board of *Blood*, a prominent peer-reviewed medical journal.



Eduardo Sotomayor, MD
H. Lee Moffitt
Cancer Center
Tampa, FL

Dr. Sotomayor is the Susan and John Sykes Endowed Chair in Malignant Hematology, Scientific Director of the Personalized Medicine Institute at Moffitt Cancer Center, and Professor of Oncology and of Pathology and Cell Biology at the University of South Florida College of Medicine in Tampa, Florida. His research interests include immunotherapy of B-cell malignancies, with special emphasis on the design of novel cancer vaccines and

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Lymphoma Researchers' Advice for Patients

When LRF interviews new grantees, incoming SAB members, or other featured researchers, we commonly ask for their advice for patients newly diagnosed with lymphoma. Although the answers we receive take many forms, a review of the collected responses reveals four common points for lymphoma patients to remember.



LRF's North American Educational Forum on Lymphoma is one way researchers recommend patients learn about their disease.

1 Seek out medical professionals who specialize in lymphoma.

The most common advice from the surveyed researchers to patients was to seek out lymphoma specialists for their medical care, both in pathologists to confirm their diagnosis, and in oncologists to direct their treatment.

New SAB member Eduardo Sotomayor, MD of Moffitt Cancer Center, notes "Lymphoma is not one diagnosis... there are more than 60 different types of lymphomas and as such the biopsy slides need to be reviewed by an experienced pathologist with expertise in lymphoma diagnosis."

2 Look into the possibility of participating in clinical trials.

"Everything we know about your disease is because another patient walked down this path before you and made things better for everyone who came after," advises new SAB member Sandeep Dave, MD, MS. of Duke University. However, it isn't just medical research that benefits from patient participation in clinical trials – several researchers noted that a patient that qualifies for a clinical trial often receives access to newer, more effective anti-cancer therapies before they are available to the general public.

3 Do your own research, and don't be afraid to ask questions.

Whether it's looking through open clinical trials on clinicaltrials.gov or attending a patient education program like those offered by LRF, researchers advise patients to take charge of their own treatment and educate themselves

about their disease. "Knowledge is power," notes grantee Januario Castro, MD of the University of California-San Diego. Researchers also advise patients not to be afraid to ask questions of their medical team, or to seek out another opinion if necessary. "A good physician is like a good car mechanic," says Joshua Brody, MD of Mount Sinai Hospital, a past grantee and member of LRF's MCL Consortium. "They need to talk to you, answer your questions, and be trustworthy ... so much so that you know they are not going to sell you a new alternator when all you need is to replace a fuse."

4 Remain positive.

Many researchers pointed to the continuing progress being made in the treatment of lymphoma as a reason for patients to remain hopeful. SAB member and new grantee Stephen Bernstein, MD of the University of Rochester, notes "we have and are continuing to make remarkable strides in these diseases and the outcome for patients suffering with [lymphoma] continues to improve."

For further information about LRF's education and support resources for lymphoma patients, visit lymphoma.org/learn. ■

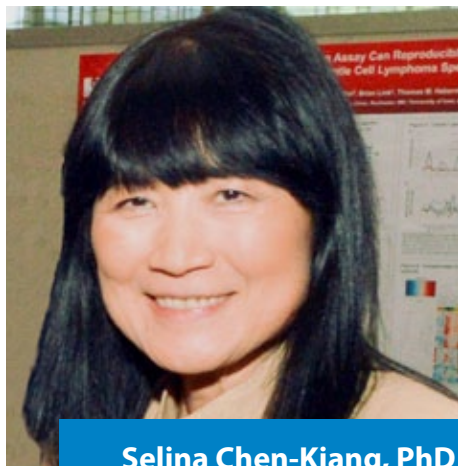
New Grantees

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of California-San Diego, and Nicholas Chiorazzi, MD of The Feinstein Institute for Medical Research, received CLL/SLL grants. Steven H. Bernstein, MD of the University of Rochester, and Todd A. Fehniger, MD, PhD of Washington University in St. Louis, received FL Pathways Grants of \$450,000 over three years.

Mantle Cell Lymphoma Exploratory/Developmental Grants

The MCL Exploratory/Developmental Grant, first awarded in 2011, was developed to fund researchers exploring, or seeking to develop, novel basic scientific ideas with a concentration on translational medicine. It is a continuation of LRF's Mantle Cell Lymphoma Initiative, which has been seeking to accelerate the pace of research in MCL for over a decade. Over \$25.8 million has been awarded through the grant programs of this initiative since 2003.



Selina Chen-Kiang, PhD

Weill Cornell
Medical College
New York, NY

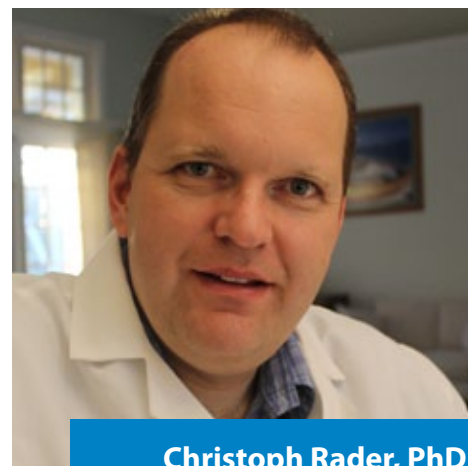
Dr. Chen-Kiang received a two-year grant to evaluate a targeted therapy for MCL and identify additional drug resistant genes by sequencing tumor cells before and during patient treatment.

Dr. Chen-Kiang believes targeted therapies in rational and mechanism-based combinations are some of the most promising avenues to finding a cure for lymphoma. Her research focuses on the genes CDK4 and CDK6, which, when overexpressed, are known to drive uncontrolled tumor growth and disease progression in MCL. She and her team have developed a novel therapy using palbociclib, the first specific inhibitor of proteins CDK4 and CDK6; the drug slows tumor cell proliferation and makes the malignant cells more sensitive to the effects of a partner drug. During her grant funding, Dr. Chen-Kiang will study patients who receive palbociclib in combination with the novel BTK inhibitor ibrutinib; by sequencing the patients' tumors before and during treatment, she hopes to identify drug resistant genes in MCL. "Our ultimate goals are to both develop novel and effective lymphoma therapies with minimum side effects and match patients with the most appropriate therapy based on [their] genomic signature," she says. "To begin to do this we need to understand the mechanism of action of each drug."

This grant is Dr. Chen-Kiang's third award from LRF, and builds upon the work she accomplished through the other two projects. She credits LRF funding with providing "a head-start" for her work in MCL, which was not her original research focus. "My background is in how cell cycling and proliferation controls normal immunity and how this control is lost in human cancers. Because the cell cycle is dysregulated in all lymphomas, I felt that my background and knowledge could make a genuine difference."

Dr. Chen-Kiang received her PhD in Human Genetics and Development from Columbia University before completing a fellowship in Molecular Biology at The Rockefeller University, also in New York. She is currently Professor of Pathology and Laboratory Medicine as well as Professor of Immunology and Microbial Pathogenesis at Weill Cornell Medical College. Dr.

Chen-Kiang considers herself "very fortunate" to be able to contribute to lymphoma research as well as to work at Weill Cornell, "an institution where the interactions between basic scientists and physicians are seamless." She adds, "it [is] very gratifying to be able to apply fundamental findings in real time, designing new therapies and putting [them] into practice right away to benefit the patients. How many people can do what they are passionate about and make a difference in treating patients?"



Christoph Rader, PhD

The Scripps
Research Institute
Jupiter, FL

Dr. Rader received a two-year grant to generate and validate antibody-drug conjugates as novel targeted agents in MCL.

Dr. Rader describes himself as an "antibody engineer"; he creates man-made monoclonal antibodies (mAbs), which are able to target specific proteins in cancer cells. In explaining his work, he notes that B-cells, which when healthy generate natural antibodies in the human body, can also be considered antibody engineers. "We have learned from B-cells how to generate and evolve antibodies," he says, and yet when B-cell mechanisms break down and trigger lymphoma, "some of our best drugs to fight lymphoma are man-made mAbs. This twist has always fascinated me." The ability of man-made mAbs to fight cancer can be further boosted by linking them

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with chemotherapeutics. In fact, such antibody-drug conjugates (ADCs) have already proven successful in the treatment of Hodgkin lymphoma and breast cancer. Dr. Rader's LRF grant will be used to engineer and assess antibody-drug conjugates designed to target ROR1, a protein found on the surface of MCL cells; the hope is that the ADCs will eradicate the diseased cells without harming healthy tissue (which does not express the ROR1 protein).

After receiving his PhD in Biochemistry and Molecular Biology from the University of Zurich, Dr. Rader held postdoctoral and junior faculty positions at The Scripps Research Institute. He then spent eight years at the National Cancer Institute (NCI), where he was Head of the Antibody Technology Section of the Experimental Transplantation and Immunology Branch, before returning to Scripps as an Associate Professor with Tenure in 2012. While at NCI, Dr. Rader met several lymphoma patients participating in clinical trials, which he says "made me realize more than before that our work has the potential to make a big difference in many lives."

Because Scripps's researchers must cover 100 percent of their salaries and research supplies with external grants, Dr. Rader considers the LRF grant vital to the continuation of his research, noting the funds are also "important seed money for obtaining federal funding" as research progresses to later stages. "I am very grateful for receiving this award and would like to thank the LRF and its donors for their trust in our work," he says, "We hope that our research will lead to novel treatment options and improved prognosis of this devastating lymphoma."



Mariusz A. Wasik, MD

**University of Pennsylvania
Medical Center
Philadelphia, PA**

Dr. Wasik received a two-year grant to conduct a preclinical evaluation of potential combination therapies using immunotherapy with targeted small molecule inhibitors in MCL.

MCL patients in particular are in need of new treatment options, a fact of which Dr. Wasik is well aware. "Currently, there is no truly effective therapy capable of curing MCL and the most effective multi-agent chemotherapy regimen, hyper-CVAD, is highly toxic and not appropriate for elderly patients," he says. He and his colleagues will be conducting a preclinical study of CART19 cells, a type of T-cells that have been engineered to express a receptor that can recognize B lymphocytes (including MCL cells). Previous research, performed by a team led by Dr. Wasik's collaborators, Drs. Carl June and Michael Kallos, has demonstrated that CART19 cells are highly effective against CLL. Dr. Wasik will use his LRF funding to study a variety of potential combinations of CART19 cells with small molecule kinase inhibitors capable of directly inhibiting the growth of MCL cells to determine which combinations are the most promising, first in an *in vitro* laboratory environment, and then by using an *in vivo* model using patient-derived MCL cells transplanted into immunodeficient mice. "This may lead to a novel combination therapy for MCL

that is much more specific and, consequently, more effective and less toxic, than the current treatments," Dr. Wasik says. Given the already demonstrated effectiveness of CART19 alone in CLL, he adds that the success of this combination therapy in MCL, a disease more aggressive and difficult to treat than CLL, could indicate that the combination of an immunotherapy agent like CART19 with a targeted small molecule inhibitor could be effective in additional types of lymphoma.

Dr. Wasik cites his parents, both of whom were also in academic medicine, as his role models for his current career. He received his MD from the Wroclaw Medical Academy in Poland before completing his residency and fellowships at Boston and Harvard Universities. "I received training in immunology where I studied the biology of normal lymphocytes and hematopathology where I learned about lymphomas, the lymphocytes-derived disease," Dr. Wasik says, "Combining these two disciplines to better understand the disease process... became a great interest to me." He is currently Professor of Pathology and Laboratory Medicine at the University of Pennsylvania Medical Center.

Noting that his project would be unable to proceed without LRF funding, Dr. Wasik thanks LRF members, volunteers, and donors for their assistance in lymphoma research. "The LRF's contributions are important and appreciated by both physicians and patients."

Chronic Lymphocytic Leukemia/ Small Lymphocytic Lymphoma Collaborative Grants

LRF's CLL/SLL Collaborative Grant funds high quality collaborative research projects in chronic lymphocytic leukemia (CLL) and/or small lymphocytic lymphoma (SLL), diseases which are molecularly similar. Over \$3.6 million has been funded in this research area since 2007.



Januario E. Castro, MD

University of
California-San Diego
San Diego, CA

Dr. Castro received a two-year grant to investigate the role of the spliceosome system in CLL tumor progression, and develop therapeutic strategies to target it.

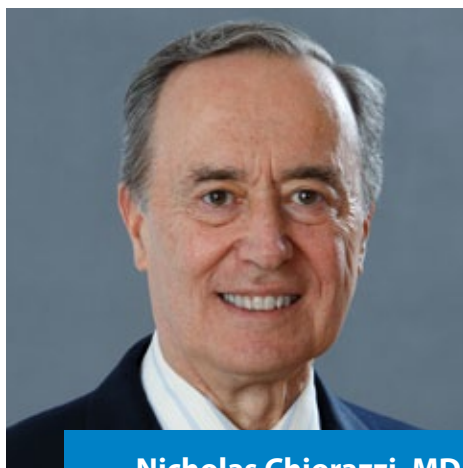
In the field of cancer genomics, the identification of new genetic mutations in cancer patients may indicate a new possibility for a targeted agent. Recently, the gene SF3B1 was identified as a possible mutation that determines the evolution of CLL. SF3B1 is part of the spliceosome, which controls alternative splicing, the process by which cells “swap” DNA fragments to create various proteins. Dr. Castro’s LRF grant will fund research investigating the precise role SF3B1 and the spliceosome system plays in the evolution and survival of CLL tumors. “Targeting the splicing system offers a potentially novel and effective therapeutic alternative that currently has not been explored in CLL or other cancers,” Dr. Castro says.

After receiving his MD at the Universidad Industrial de Santander Medical School and serving as a Research Fellow at the Instituto de Inmunologia in Colombia, Dr. Castro came to the United States for a Research Fellowship in transplantation immunology at Harvard. He went on to a residency at the University of Pennsylvania and a Hematology-Oncology fellowship at the University of California-San

Diego (UCSD). Currently at UCSD he is an Associate Clinical Professor as well as the Director of the Tumor Board in Hematological Malignancies and Bone Marrow Transplantation.

Dr. Castro says he was drawn to research by the multiple unanswered biological questions in the understanding of lymphoma. “New technologies to sequence the genetic material of cancer cells are providing us with an opportunity to understand the biology of cancer cells,” he says, adding that he also enjoys research for its potential to help patients by identifying better targets for personalized therapies.

Dr. Castro notes that the LRF grant will fund the high-throughput experiments, such as RNA sequencing, needed to truly dissect the molecular mechanism of the spliceosome in CLL tumors. Since the study will investigate a currently under-explored area of CLL biology, being able to undertake this project is particularly important. “We feel that LRF funding will help us contribute significantly to the field of lymphoma research,” Dr. Castro says, “we would like to thank [LRF] and their donors for their support.”



Nicholas Chiorazzi, MD

The Feinstein Institute
for Medical Research
Manhasset, NY

Dr. Chiorazzi received a two-year grant for a comparative study of cell kinetics and the molecular features found in CLL patient samples.

To support LRF’s
research initiatives, visit
[community.lymphoma.org/
supportresearch](http://community.lymphoma.org/supportresearch)

Dr. Chiorazzi, in collaboration with Dr. Matthew Scharff from the Albert Einstein College of Medicine, is studying CLL cell kinetics – the rate at which CLL cells are born and die. This rate varies from patient to patient, and can be measured by asking a patient to drink “heavy water” — water formed with a different hydrogen isotope that is helpful and safe in biological testing. Dr. Chiorazzi’s previous research suggests faster cell birth rates correspond with worse patient outcomes; his LRF funded project will further this analysis by comparing cell kinetics to the molecular features of individual patient samples, attempting to identify genes or biomarkers that control or predict the relative birth rates for CLL cells. “This approach may define tests to better predict patient prognosis and pinpoint processes to attack with novel therapies,” Dr. Chiorazzi says.

LRF’s disease focus area grants emphasize the need for collaboration across disciplines and institutions, an aspect of research Dr. Chiorazzi takes seriously, noting “the likelihood that [this project] can be accomplished is greatly enhanced by the collaborative nature of the study.” The cell samples in the study are derived from a previous NIH-sponsored national study, while the collaboration with Dr. Scharff’s group allows for more thorough testing and analysis of those samples.

Currently a Professor of Molecular Medicine and of Medicine at Hofstra North Shore-LIJ School of Medicine as well as an Investigator at The Feinstein Institute for Medical Research, Dr. Chiorazzi received his MD at Georgetown University before completing fellowships

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New Grantees

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at Harvard and The Rockefeller University. Noting that his LRF funding will allow him to continue his research without cutting his current staff, Dr. Chiorazzi adds, “I salute and thank the LRF and its contributors for the exceptional dedication and role that they play in the quest to conquer CLL and other types of lymphoma.”

Follicular Lymphoma Pathways Grants

LRF’s follicular lymphoma (FL) grant programs have been a part of its grant portfolio since 2006; the Pathways Grant seeks to support projects that investigate the pathogenesis, epidemiology, diagnosis, or therapy of this currently incurable disease. Over \$9.5 million has been awarded in FL research through 2013.



Steven H. Bernstein, MD

University of Rochester
School of Medicine
Rochester, NY

Dr. Bernstein received a three-year grant to study the microenvironment of T-cell tumors using xenografts of human cells into mice.

Dr. Bernstein’s interest in immunology prompted his focus on follicular

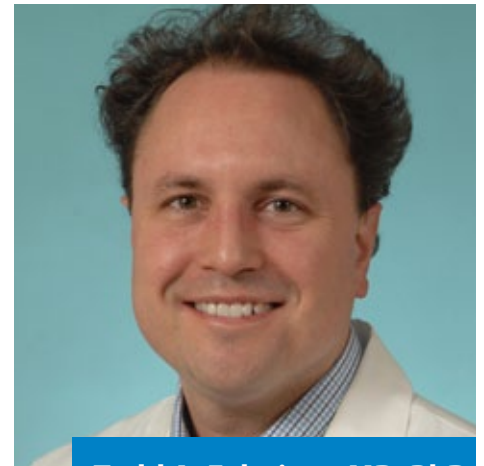
lymphoma. “FL is truly the paradigm of a disease whereby manipulation of the immune system has real potential in improving [patient] survival,” he says. Recent studies have shown that the natural history of FL is dictated in part by the interactions of the tumor cell with non-malignant immune cells in what is called the tumor microenvironment. For their LRF funded project, Dr. Bernstein and his team have developed a mouse model where they can study human lymphoma cells and the tumor microenvironment as a whole. They will use the mouse model to better understand how lymphoma cells interact with and potentially depend on the two key types of immune cells for its survival.

After witnessing how increased understanding of the disease’s biology produced better treatments and improvements in survival rates, Dr. Bernstein found himself drawn to lymphoma research. He adds, “I wanted to be part of this process and play a role in continuing to improve these strategies until all patients can be cured of these diseases.” To this end, he notes that understanding how the interactions of FL cells and immune cells affect tumor growth and survival is the first step in potentially developing new strategies to induce lymphoma cell death or make lymphoma cells more sensitive to current therapies.

Dr. Bernstein received his MD from New York University School of Medicine and was a Clinical Fellow at Harvard. Since 2002, he has been Co-Director of the Lymphoma Biology Program at the University of Rochester School of Medicine’s James P. Wilmot Cancer Center, where he is also Professor of Medicine and Oncology. A member of LRF’s Scientific Advisory Board (SAB) and MCL Consortium, Dr. Bernstein received a previous Follicular Lymphoma Research Grant from LRF in 2006. He says that LRF has played “a major role” in his career. “[LRF has] provided me with critical research funding, particularly in a time when obtaining government funding is

so difficult,” he says “[it has] also provided a wonderful forum whereby investigators like myself can interact and develop the collaborations which are so needed to develop new approaches to treatment.”

Dr. Bernstein also credits his patients with encouraging his commitment to lymphoma research. “Their courage and perseverance is inspiring. They remind me every day why we are doing this.”



Todd A. Fehniger, MD, PhD

Washington University
School of Medicine
St. Louis, MO

Dr. Fehniger received a three-year grant to identify recurrent or related sets of mutated genes in FL patients.

Dr. Fehniger started on the path to lymphoma research as an undergraduate, when he became fascinated by the biology of lymphocytes. Lymphocytes rearrange their DNA to create antibodies and T-cells to attack specific threats, but an error in this process can also lead to the mutated cells that become lymphoma. Currently, Dr. Fehniger’s research focuses in part on lymphoma genomics, seeking to identify the genetic mutations common to specific lymphomas. His FL Pathways Grant will allow him and his colleagues to use next generation DNA sequencing to examine cells from a number of follicular lymphoma patients, seeking to identify common

mutations. This new knowledge will then be used to explore correlations between gene mutations and a number of patient characteristics, such as response to therapy and survival rates. “We expect that this study will reveal clinically significant genes or sets of genes for... study in clinical trials as [possible] predictors of prognosis, as well as novel therapeutic targets or strategies in FL,” Dr. Fehniger says.

As a physician-scientist, Dr. Fehniger’s primary motivation comes from his weekly visits with patients, and his desire to improve both the effectiveness and tolerability of their treatments. He received his MD and PhD from Ohio State University before moving to St. Louis to complete his residency, fellowship, and postdoctoral work at Washington University School of Medicine in St. Louis, where he is now an assistant professor. Dr. Fehniger says receiving LRF funding has effects beyond the critical direct support for his project – it also “provides key early support to

2013 Focus Area Grants In Brief

- \$2.05 Million Awarded
- 3 Lymphoma Focus Areas: MCL, CLL/SLL, FL
- 4 Institutions Receiving Their First Focus Area Grant

expand lymphoma research in our group at Washington University, and will spark new grant proposals and lines of inquiry in my own laboratory.”

Dr. Fehniger expects his project to contribute to a deeper understanding of FL that will allow for more personalized treatments depending on the mutations in a given patient’s lymphoma cells. “While the ability to potentially personalize treatments is years in the future,” he says, “this

study will set the stage for moving research efforts into this exciting direction.”

Summary

LRF is proud to be assisting these physician-scientists in their efforts to better understand the biology of lymphoma as well as develop more effective, less toxic treatments for lymphoma patients. To support LRF’s research initiatives, visit community.lymphoma.org/supportresearch. ■

New SAB Members

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monoclonal antibodies; his clinical interests have focused recently on mantle cell lymphoma (MCL). “We have built a multidisciplinary group composed of basic scientists, physician-scientists, clinicians, and hematopathologists focusing entirely on MCL,” he says, “as part of this group, my lab is developing and testing novel vaccines and molecularly based strategies to augment immune responses in MCL.”

As a new SAB member, Dr. Sotomayor will now be able to provide young researchers with support similar to what he received from LRF early in his career. “In 1998 ... I received the Fellowship Research Award. Then, in 2002 I received the Junior Faculty Award [now the Clinical Investigator Career Development Award];”

he says. “Both grants provided me with much needed funds and protected time that allowed me to successfully compete for federal funding in the form of R01s.” Additionally, in 2005 his team received a grant as part of LRF’s MCL Initiative, which allowed them to begin assembling Moffitt’s own group of MCL research experts. “I strongly believe that all the new basic knowledge that has been generated by the investigators brought to this field by [LRF’s MCL Consortium] will provide benefit beyond the treatment of MCL and will benefit patients with other types of B-cell malignancies.”

Dr. Sotomayor received his MD from Federico Villarreal National University School of Medicine in Peru, before completing his residency at the Jackson Memorial Medical Center of the University of Miami School of Medicine in Florida. He held fellowships at Johns

Hopkins University in Maryland and the University of Miami in Florida. He credits his experience at Johns Hopkins, where he did research in Hyam Levitsky’s tumor immunology lab and clinical activities under the mentorship of Richard Ambinder, with leading him to focus exclusively on lymphoma research. While his patients are his primary reason for staying engaged in the field, Dr. Sotomayor also notes that the recent significant advances in the understanding of lymphoma have kept him devoted to his work. “It is very rewarding being part of a specialty that is at the forefront of rapidly translating new knowledge into more effective therapies for lymphoma patients,” he says.

A list of the complete SAB membership for 2013-14 can be found on page 10. ■

Lymphoma Research Foundation's

SCIENTIFIC ADVISORY BOARD 2013 - 2014

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.

John P. Leonard, MD
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New York-Presbyterian
Hospital, Weill Cornell
Medical Center

Leo I. Gordon, MD, FACP
Chair Elect
Northwestern University
Medical School

Bruce D. Cheson, MD, FACP, FAAAS
Immediate Past Chair
Georgetown University
Hospital, Lombardi
Comprehensive
Cancer Center

Ranjana Advani, MD
Stanford University
Medical Center

Stephen Ansell, MD, PhD
Mayo Clinic

Nancy Bartlett, MD
Washington University
Medical School

Steven H. Bernstein, MD
University of Rochester
Medical Center, James P.
Wilmot Cancer Center

Kristie A. Blum, MD
The Ohio State University
Comprehensive Cancer
Center

John Chan, MD
University of Nebraska
Medical Center

Morton Coleman, MD
New York-Presbyterian
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LYMPHOMA
RESEARCH FOUNDATION

Twitter Conversation

Dr. Anas Younes
Memorial Sloan-Kettering Cancer Center

Saturday, September 28
@ 1:00 pm ET

Ask one of the world's leading lymphoma experts questions about the disease, treatment options and lymphoma research during the 18th Annual North American Educational Forum on Lymphoma.

Join the Conversation

- Sign-in to your Twitter account
- Follow @lymphoma and @DrAnasYounes
- Use the hashtag #EdForumChat to join and follow the live conversation



twitter.com/lymphoma

Leave a Legacy

Remember LRF in your Will

Your bequest can have a lasting impact on LRF's mission to eradicate lymphoma and serve those touched by this disease.

To learn more about including LRF in your estate plans, please contact us at plannedgiving@lymphoma.org

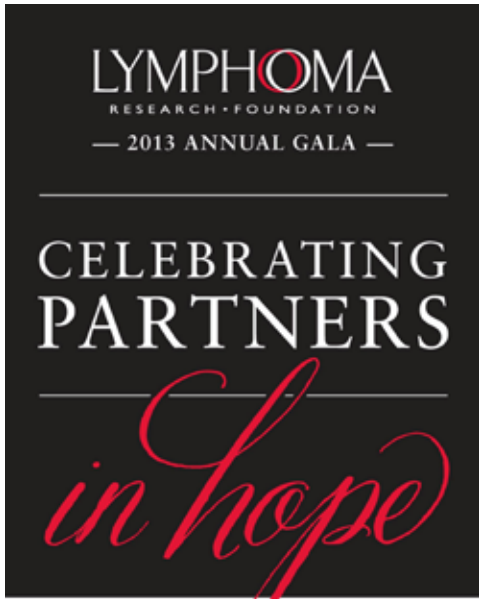
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STAY CONNECTED





OCTOBER 8, 2013
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 VISIT LYMPHOMA.ORG/GALA

Foundation Launches First-of-Its-Kind Mobile App

This September, the Lymphoma Research Foundation (LRF) will launch the *Focus On Lymphoma* mobile app, the first application developed exclusively for people with lymphoma, for use on smartphones and tablet devices.

The app includes comprehensive lymphoma information and tools to help patients and caregivers understand their lymphoma and manage their cancer treatment. "We are pleased to bring this unique resource to people with lymphoma," said Meghan Gutierrez, LRF Chief Communications Officer. "We know that a rapidly expanding number of patients and caregivers are using mobile apps to learn about their diagnosis and manage their treatment, and we hope the app will meet this growing need."

The *Focus On Lymphoma* mobile app contains comprehensive disease content which can be tailored to the users' lymphoma subtype as well as information on treatment options and clinical trials. The app also includes several unique tools designed specifically for people with lymphoma, which allow users to identify and save questions to review with their healthcare provider, track their symptoms, manage their medication schedule, chart blood work results and record doctor sessions for review later.

Focus On Lymphoma is free and available for download on Apple devices in the Apple App Store and for Android devices on Google Play. Additional information is also available on the app's dedicated website, FocusOnLymphoma.org. ■

September is National Blood Cancer Awareness Month

More than half a million people in the United States are living with, or in remission from, lymphoma, the most common form of blood cancer. Still, many people do not know much about the disease, or any blood cancer, until they are diagnosed. That is why the Lymphoma Research Foundation (LRF) is proud to recognize National Blood Cancer Awareness Month this September.

Throughout September, LRF will host a variety of national and local events intended to educate the public about the blood cancers and raise funds for lymphoma research. As part of this campaign, buildings and iconic landmarks around

the world will *Light it Red for Lymphoma*, to raise awareness of lymphoma and provide hope to all those affected by blood cancers. LRF will also post daily facts about lymphoma and the resources provided by LRF on all of its social media sites.

Please join LRF this September by sharing your lymphoma story or posting a note of encouragement on LRF's Facebook page: facebook.com/lymphomacommunity.



The Intrepid Sea, Air, & Space Museum Lights it Red for Lymphoma.

Together, we can ensure a brighter future for all those touched by lymphoma. ■

SAVE THE DATE
LRF's Fall 2013
Lymphoma Workshops

Bloomington, MN
 October 26

San Francisco, CA
 November 9 **NEW DATE**

To find out more about LRF's Education Programs, go to lymphoma.org/learn

News from the Field

Researchers at Emory University recently published a study demonstrating that the incidence of non-Hodgkin lymphoma (NHL) is significantly higher in regions close to facilities releasing benzene. The study, on which SAB member Christopher Flowers, MD collaborated, used data from the Environmental Protection Agency and United States Census Bureau to examine NHL cases in Georgia between 1998 and 2008, looking for geographic patterns. Of the more than 11,000 cases which were identified and linked to geographic data, cases were clustered in Atlanta, Augusta, and Savannah, near industrial facilities, such as petroleum refineries, which released benzene into the air or water. Moreover, researchers found that for each mile away from a benzene-producing facility, the risk of NHL dropped by

0.31 percent. The study is the first to examine the relationship between passive benzene exposure and NHL incidence at a state population level.

Source: *Cancer*

A study released in the July 25 issue of *Blood* suggests the new drug ofatumumab (Arzerra) may be a promising alternative to rituximab (Rituxan) in combination therapy for B-cell lymphomas. Researchers, including SAB members Myron Czuczman, MD (Roswell Park Cancer Institute), Izidore Lossos, MD (University of Miami Sylvester Comprehensive Cancer Center), and Craig Moskowitz, MD (Memorial Sloan-Kettering Cancer Center), treated patients who had previously relapsed or not responded to rituximab therapies with common chemoimmunotherapy regimens in combination with ofatumumab, which like rituximab is an anti-CD20 targeted agent. Of the 61 patients in the study, 61 percent reported at least a partial response to the therapy, with 37 percent

obtaining a complete response, and comparable toxicity to rituximab. Researchers are continuing to evaluate ofatumumab in an ongoing large-scale trial that directly evaluates ofatumumab and rituximab combination therapies; they hope this new drug may offer an alternative for poor prognosis patients that fail to respond to rituximab. Source: *Blood*

RF congratulates SAB member Elaine Jaffe, MD, of the National Cancer Institute on being named a 2013 recipient of the Henry M. Stratton Medal from the American Society of Hematology (ASH). ASH awards the Stratton Medal to two senior investigators in hematology each year. The award recognizes Dr. Jaffe's contributions to the field of hematology, including work on the interrelationship between Hodgkin lymphoma and B-cell lymphomas as well as the genetic and epigenetic mechanisms that cause a B-cell to become a Hodgkin cell. Source: ASH ■