



DISCOVERY

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Forum for Discovery 2015 Heralds Research Strategies for a New Scientific Era *Precision Medicine and Big Data Accelerate Discovery and Revolutionize the Future of Lupus Research*

Ushering in a new era of scientific discovery, 100 of the world's best and brightest lupus scientists gathered for the 2015 Forum for Discovery. Hosted by the [Lupus Research Institute \(LRI\)](#) and the [Alliance for Lupus Research \(ALR\)](#), the Forum captured how "precision medicine" and "big data" are transforming lupus research. The cutting-edge discoveries and innovative strategies funded by LRI and ALR capitalize on our increasing ability to collect, store and analyze vast amounts of information and radically reshape how biomedical research is conducted.



Two world-renowned trailblazers in scientific research headlined the conference – Dr. Francis Collins, Director of the National Institutes of Health (NIH) and Dr. Harold Varmus, Nobel Laureate and Former Director of the National Cancer Institute. Drs. Collins and Varmus emphasized that a critical part of precision, or personalized, medicine research is the use of big data – massive datasets and databases - to advance our understanding of the fundamental science underlying challenging diseases like lupus.

"Science is hard and disease is complex," Dr. Varmus said. "All major advances against disease have begun with efforts to understand the basic underpinnings of biological systems. These fundamentals inform our efforts to develop new preventive strategies and therapies. The critical intersection of precision medicine and big data leads us to vast new levels – as immunotherapy comes of age."



Dr. Collins, who oversees the President's Precision Medicine Initiative®, said that "science has never been at a more exciting juncture" with precision medicine and big data now poised to revolutionize autoimmune disease research and treatment. He pointed out how the recently launched NIH Accelerating Medicines Partnership (AMP) shares data on a large scale across the global research community to help identify and validate the most promising biological targets for development of new lupus treatments. Dr. Collins urged patients, scientists and the entire lupus community to 'unashamedly' advocate for government to recognize the significance of this new scientific age and to invest in this future.

Novel, Cutting-edge Lupus Research Holds Exciting Promise

Packing the most “outstanding science” into 36 hours, this landmark conference presented the progress of the present and the promise of the future. Speaker after speaker shared exciting studies that challenge the status quo, sparking discussions that could have gone on for days and generating new insights that will keep coming until these scientists meet again at *Forum for Discovery* 2016. Their unprecedented novel discoveries in basic science and fast moving studies in human lupus bring lupus patients the inspiring hope that’s grounded in brilliant science and solid results. [More](#)



2015 Industry Forum – Where Lupus Drug Discovery is on the Fast Track

The next breakthroughs in lupus will arise from the tremendous capabilities afforded by precision medicine and big data, and these advances are moving fast, according to 2015’s industry and academic panel.



Dr. Peter Gregersen, founder of the North American Rheumatoid Arthritis Consortium predicts that effectively using big databases and datasets will produce safer, more targeted therapies for diseases like lupus the way drug development is already transforming cancer treatment. Dr. Virginia Pascual, Director of the Autoimmunity Center of Excellence at Baylor University highlighted how precision medicine will be able to identify which drug candidates have the best shot at success so only the most promising are tested in trials and the time to deliver better treatments can be drastically reduced. [More](#)

Repositioning Existing Drugs for Lupus: An Update

Dr. Peter Lipsky reported rapid progress on the current repositioning drugs front – a collaborative initiative between the LRI and the ALR to speed up delivery of new treatments for lupus by testing the use of existing drugs approved for other conditions. The next exciting milestone – a new trial is about to begin testing Janssen’s drug ustekinumab (Stelara®), already approved for psoriasis, as a potential treatment for lupus. [More](#)



How Bacteria in Your Gut Play a Role in Lupus

With ten times as many microorganisms in the gut as cells in the entire body, recent research shows they influence everything from autoimmune disease to disease susceptibility. But how or why is still

unknown. Three researchers shared ground-breaking new explorations into altering gut bacteria to treat lupus.

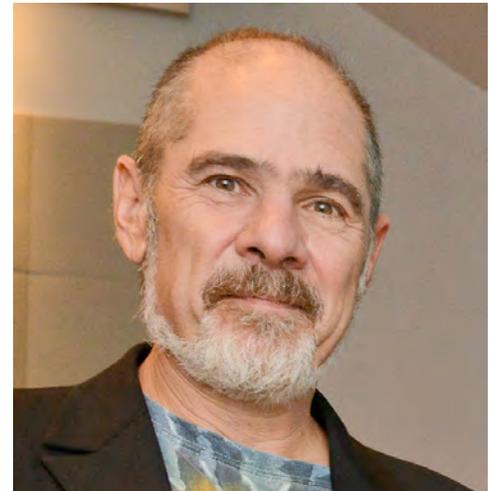


Dr. Martin Kriegel at Yale is testing if targeted antibiotics that knock out ‘bad’ bacteria in the gut can prevent antiphospholipid syndrome, abnormal blood clotting, a frequent lupus complication. Dr. Gregg Silverman, NYU is looking at whether bacteria in the gut influence why the immune system attacks healthy cells. Dr. Michele Kosiewicz, University of Louisville, is turning conventional wisdom around; instead of asking why women are more likely to have lupus, she asks why men are more protected and is looking at gut bacteria as a promising target for developing therapies to prevent the disease. [More](#)

The Body’s Inability to Dispose of Cell Corpses Linked to Lupus

If the garbage trucks in your city stopped working, trash would pile up, clogging pathways and disrupting the business of daily living. LRI’s Distinguished Innovator Awardee Dr. Douglas Green made a stunning discovery, identifying the ‘garbage trucks’ of the cell world and is now investigating how preventing their breakdown may prevent organ damage in lupus.

Previously his team identified a process called LAP that facilitates the disposal of cell corpses. Their new research found that mice lacking this ability have more inflammation and lupus-like autoantibodies. Now Dr. Green is investigating how the LAP process prevents disease – including one of the worst and most common complications of lupus, kidney disease, and whether restoring LAP can stop disease progression. [More](#)



Forum 2015 Dedicated to the late Dr. Bill Paul, Former Chief of the Laboratory of Immunology at the NIH and Chair LRI Scientific Advisory Board

While [Dr. Bill Paul’s](#) presence was sorely missed at the Forum for Discovery he founded 15 years ago, his immense contributions were evident in every presentation and remembered fondly by every colleague.

Dr. Varmus described Bill as characterized by precision – precision in his style of speech, of thought, and how he approached science. And Dr. Collins noted, “Bill was an incredibly inspiring legend in immunology and so full of enthusiasm and excitement about the field he was part of.”

LNTN Conference: Full Speed Ahead to Take on Kidney Disease in Lupus

Lupus nephritis is still one of the most common and dangerous lupus complications. To tackle its persistent challenges, top specialists spent a full day investigating this area, sharing their latest discoveries and exchanging innovative new ideas at the Lupus Nephritis Trials Network (LNTN) conference sponsored by the LRI.

Dr. Betty Diamond from The Feinstein Institute for Medical Research explained that this year's LNTN conference took a unique approach, focusing on the kidney cells under attack rather than their attackers – how to help the victims fight back rather than to reform the bullies. A particularly attention-grabbing presentation dramatically highlighted the huge disparities in survival rates among African Americans with lupus nephritis and pinpointed variations in healthcare quality and access, emphasizing the need to advocate for critical healthcare tests and more effective treatments in this and other underserved populations. [More](#)

About the Lupus Research Institute

The Lupus Research Institute (LRI), the world's leading private supporter of novel research in lupus, pioneers discovery and champions scientific creativity as it has successfully demonstrated the power of innovation to propel scientific solutions in this complex autoimmune disease.

Lupus Research Institute
330 Seventh Avenue, Suite 1701, New York, NY 10001
T: 212.812.9881 F: 212.545.1843
e-mail: Lupus@LupusNY.org

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