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SUMMER 2009

DISCOVERY

Propelling Discovery with Wide Ranging New Grants

Innovative Studies in Human Lupus Biology Launched

LRI Research Harnesses Emerging Technologies to Advance Lupus Treatments

From the innovative design of tiny drug delivery “magic bullets” to a pioneering hunt for immune system therapies, the latest round of LRI Novel Research Grants promises to break crucial new ground in the urgent search for solutions to lupus.

The \$2.9 million in awards to 11 investigators nationwide brings the LRI’s total investment for Novel Research Grants to \$26 million for 96 novel ideas at 53 medical centers across 19 states.

Pioneering Discovery with a Broad Scope of Studies

Winners of the highly competitive 3-year awards include basic scientists, clinicians, and experts from a variety of medical disciplines.

From the researcher pursuing the design of the “magic bullets”—an assistant

professor of Biomedical Engineering & Chemical Engineering at Yale University—to the University of Florida clinician now able to pursue an entirely new approach to suppressing the overactive lupus immune system by using adult stem cells, the **grants probe for answers to lupus in myriad ways.**

In its drive to fill a significant gap in lupus research, the LRI is also now funding work that will translate basic research findings to the human disease, harnessing emerging technologies to analyze human tissue and spur the development of new therapies.

“The real need in lupus research is creative work in human lupus biology,” said Peter E. Lipsky, MD, previous chief of the Autoimmunity Branch of the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS).

“This is one of the most important areas to pursue. And now, for the first time, we have the tools to ask incisive questions

Forum for Discovery 2009

A Scientific Showcase of New Ideas
New York City, October 5-7

LRI’s Annual Scientific Conference will explore:

- **prospects for new therapies**
Harvard Medical School experts will discuss latest findings on RNA regulation of genes and implications for developing lupus treatments.

- **breakthroughs in understanding lupus and autoimmunity**
Through posters and presentations, LRI scientists will share their discoveries and insights.

- **clinical trial designs to maximize success**
A special extra meeting day will convene physicians, scientists, industry and government to find new ways to design successful clinical trials for lupus.

New LRI Grant Recipients



Roberto Caricchio, MD
Temple University, Philadelphia, PA
Role of Poly(ADP-ribose)Polymerase (PARP)-1 in Male Lupus Nephritis



Edward Chan, PhD
University of Florida, Gainesville, FL
miRNA Biomarkers Affecting the Interferon Pathway in SLE



Tarek Fahmy, PhD
Yale University School of Engineering and Applied Sciences, New Haven, CT
Combination Therapy with Nanoparticles Targeting Pathogenic T Cells



Veronika Groh-Spies, MD
Fred Hutchinson Cancer Research Center, Seattle, WA
A Novel CD4 T Cell Population Regulates Disease Activity in Pediatric Lupus



Hidde Ploegh, PhD
Whitehead Institute for Biomedical Research, Cambridge, MA
A Critical Role of Lysosomal Proteases in the TLR9 Response



Westley Reeves, MD
University of Florida, Gainesville, FL
Generation of Regulatory T Cells in Lupus Using Mesenchymal Stem Cells

Consortia Grants



Chandra Mohan, MD, PhD
UT Southwestern Medical Center, Dallas, TX & **Chaim Putterman, MD**, Albert Einstein College of Medicine, Bronx, NY

Urine Biomarkers in Lupus Nephritis




Daniel Bullard, PhD, Jeffrey Edberg, PhD & Alexander Szalai, PhD
University of Alabama at Birmingham

Biological Mechanisms of ITGAM variants for genetic risk in SLE

Continued from front

and make new insights directly in the human lupus immune system."

And so a University of Washington pediatrician will search for new therapies in tissue samples from a group of children with lupus, and a Temple University physician in Philadelphia will advance insight in kidney failure in male lupus by studying tissue, urine, and serum biopsies taken from patients of both genders.

Individual researchers as well as powerful consortia of technology and talent applied for 'Human Lupus Biology' awards. One consortium in Human Lupus Biology joins researchers at UT Southwestern Medical Center in Dallas and the Albert Einstein College of Medicine in the Bronx to evaluate the power of five highly promising urine biomarkers ("early markers") to predict the onset and progression of human lupus nephritis. 

► Check out the progress of these and other LRI researchers at LupusResearchInstitute.org.



Lupus Research Heats Up in Birmingham

When LRI President Margaret Dowd met with **U.S. Senator Richard Shelby (R-AL)** this spring, she updated him on the incredible \$4.7 million that LRI researchers at the University of Alabama in Birmingham (UAB) have won in lupus awards from the NIH since the LRI first gave researchers there \$1.3 million to test their innovative ideas.

She also briefed him on the exciting Human Lupus Biology 3-year consortium grant the LRI has just awarded UAB investigators **Daniel Bullard, PhD, Alexander Szalai, PhD, and Jeffrey Edberg, PhD** (pictured, lower left).

With this innovative grant, the researchers will use human material from healthy people to determine changes that promote the development of lupus—perfect work to take place at the 12-story Richard C. and Annette N. Shelby Interdisciplinary Biomedical Research Building dedicated just 3 years ago to promote research in such areas as autoimmunity and immunobiology.

Our Voice Heard on Capitol Hill, Congress Funds New Lupus Provider Education

As a result of long-term outreach by the LRI's National Coalition of state and local lupus organizations, President Obama signed legislation (H.R. 1105) in March, appropriating \$1 million in new funding to educate physicians and other healthcare providers about lupus.

"This is the culmination of a 10-year effort to bring attention and support to the needs of people with lupus, particularly those in underserved communities, through awareness building, advocacy, and new education programs on national, state, and local levels," said Margaret Dowd, LRI president.



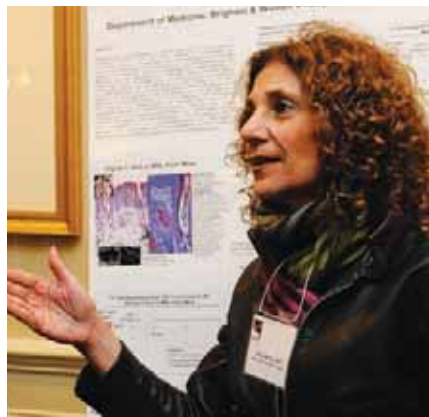
Helping to Make it Happen:

Garth Graham, MD, MPH, deputy assistant secretary of the Office of Minority Health, will lead a partnership with the U.S. Surgeon General and the Office of Women's Health to bring new medical education to America's physicians and other healthcare providers.

Reasons for Hope: LRI Discoveries Published

Every month, we get news of research discoveries published by our investigators. Here are a few recent ones.

Boston researcher starts unraveling the mystery of how sunlight triggers lupus. While scientists have long known that sunlight's ultraviolet rays can trigger cutaneous (skin) as well as systemic lupus in some people, it's been unclear exactly how this happens. LRI's **Vicki Rubin Kelley, PhD**, at Brigham and Women's Hospital, and colleagues recently reported in the ***Journal of Immunology*** that the damaging sequence is triggered when sunlight stimulates the skin to produce "Colony Stimulating Factor 1 (CSF-1)." Now, exciting studies are being planned to explore whether blocking CSF-1 with a topical lotion or other agent might be more effective than today's sunscreens in preventing cutaneous and systemic lupus.



*LRI Chicago—the new Midwest
Division of the LRI*

LRI's bold and innovative research in America's heartland is brightening the outlook for people with lupus.

Eleven researchers in 5 states from Illinois to Minnesota and Michigan to Ohio and Nebraska are forging ahead with bold new ideas. Seven already have gone on to win more than \$13 million in large-scale funding to continue the work that the LRI took a chance on when no one else would.

It was only a few years ago that prominent members of the Chicagoland community came together and founded LRI Chicago—now the headquarters of the LRI's new Midwest division.

We are grateful for their leadership and vision as we work together to strategically enhance public awareness, build a strong volunteer leadership structure, and further engage volunteers and donors in the Chicagoland community and throughout the Midwest.

► If you would like to learn more about how you can get involved, visit us at LRIChicago.org.

Berkeley scientist describes new checkpoint that prevents the immune system from making a basic error and attacking its own tissues. LRI's **Gregory Barton, PhD**, at the University of California, recently documented a key discovery in lupus immunology in the journal, ***Nature***. "Our findings are exciting because they reveal an entirely new pathway that controls the balance between immunity and autoimmunity," Dr. Barton said. "Of course it's early, but we can't help but be excited about the therapeutic potential of this discovery."

And more:

- **Alexandra Pernis, MD (New York)** on clues as to why the body's immune system sometimes turns on its own cells and tissues in ***Immunity***.
- **Marko Radic, PhD (Memphis)** on environmental triggers in the ***Journal of Innate Immunology***.
- **Anne Davidson, MD (Manhasset, NY)** on biomarkers of lupus kidney disease in the ***Journal of Immunology***.
- **Eric Greidinger, MD (Miami)** on predicting which organs are about to be attacked in lupus in the journal ***Arthritis and Rheumatism***.
- **Anne M. Stevens, MD, PhD (Seattle)** on flawed cell signaling in lupus in the journal ***Rheumatology***.

Preeminent Lupus Pediatrics Expert Joins Peer Review Task Force



Virginia Pascual, MD, a pediatric rheumatologist and scientist at the Baylor Institute for Immunology Research (Dallas), has received multiple grants from the NIH and authored over 50 articles in prominent medical journals on systemic lupus and autoimmune disease.

She joins task force chairs, Michel Nussenzweig, MD, PhD, of Rockefeller University in New York, and David S. Pisetsky, MD, PhD, of Duke University Medical Center in Durham, in chairing the annual peer review of the Institute's novel research projects.



Powerful Lupus Awareness Campaign Launched

In an effort to raise awareness among women at greatest risk for lupus, the U.S. Department of Health and Human Services' Office on Women's Health (OWH) and the Ad Council have launched a national multimedia campaign on the disease.

4th Annual Shady Ladies® Luncheon and Celebrity Sunglasses Auction

"Shady Ladies" gathered at the Palm Beach International Equestrian Center in Wellington, Florida, on March 15th to meet friends for lunch and have some fun raising research dollars for the LRI. The sunglasses theme couldn't be more relevant: people with lupus should always shade themselves from direct sunlight, which can trigger and exacerbate the illness. Hats, sunglasses, and sunblock do the job!



L to R: Madelyne Keck, Kris Keck, and Corry Walker; sunglasses from Jessica Alba and Kathy Griffin on display; Angie, Allie and Chris Paradysz.

► **Want to help raise funds for the LRI? Create an event and promote it through a personalized fundraising page. Visit www.LupusResearchInstitute.org/help/fundraiser to learn more.**