

**WHAT'S HAPPENING AT THE CTSC?****CTSC Investigator: Dr. Steven Levine –  
*Treatment of Stroke***

There is an increasing need for improved treatments for stroke patients as stroke is the most common cause of serious long term adult disability and the third most common cause of death in the U.S. Hyperglycemia is seen in approximately 40% of acute ischemic stroke patients and has been associated with worse clinical outcomes. Intravenous (IV) insulin therapy with tight glucose control has been found to improve clinical outcomes in some nonstroke acute illness trials. A clear determination of the risk and benefit of glucose control with IV insulin would have a dramatic impact on acute ischemic stroke patient therapy. Dr. Levine, Professor of Neurology, is participating in a phase III multicenter, randomized, controlled trial will determine the efficacy and provide further safety data on glycemic control in stroke patients. The hyperglycemic acute ischemic stroke patients that meet all eligibility criteria will receive up to 72 hours of hyperglycemia control with IV insulin therapy or control therapy with subcutaneous insulin. Treatment will be given within 12 hours of symptom onset and within 3 hours of arrival to the emergency department. The primary efficacy outcome to be to assess the severity adjusted difference in favorable outcome between the groups. The primary safety outcome will be the hypoglycemic event rate. This trial launches a highly collaborative model for stroke research providing a foundation for maximally generalizable results based on performance at academic, community, urban, rural, large and small hospitals throughout North America to produce a highly representative national population sample. A baseline severity-adjusted dichotomized outcome analysis will adjust for variability of individual patient characteristics to allow detection of the true clinically relevant treatment effect. In this setting an absolute 7% treatment effect is recognized as a threshold at or above which a profound effect on a large stroke population would be realized.

**CTSC Investigator: Dr. Jeanette Jakus –  
*Treatment of Psoriasis***

Psoriasis is a chronic disease of the skin that can have different features in different people. The scalp is one of the most frequent areas involved in plaque psoriasis that occurs in up to 80% of patients. Scalp hair makes applying topical therapies or use of phototherapy extremely difficult and inconvenient, subsequently limiting their effectiveness and patient compliance. Management of psoriasis may involve topical and systemic medication, as well as phototherapy. Biologics may be used in adults with moderate to severe plaque psoriasis that are inadequately controlled by topical treatments (including topical corticosteroids), ultraviolet (UV) light, or systemic therapy such as methotrexate. There remains an unmet medical need for treating plaque psoriasis of the scalp. Dr. Jakus, Assistant Professor of Dermatology, is participating in two multicenter, randomized, placebo-controlled, double-blind studies. The first aims to evaluate the efficacy and safety of Apremilast in adult subjects with moderate to severe plaque psoriasis of the scalp. Apremilast is a specific phosphodiesterase type 4 (PDE4) inhibitor approved for the treatment of both psoriasis and psoriatic arthritis. The second pediatric study is investigating the use of a biological already approved for use in adults with psoriasis, namely, ixekizumab. Pediatric plaque psoriasis affects approximately 1% of children and adolescents globally. Ixekizumab is a monoclonal antibody specific for the proinflammatory cytokine, interleukin-17. Overproduction of this cytokine has been implicated in a variety of autoimmune diseases, including psoriasis, psoriatic arthritis, axial spondyloarthritis, and rheumatoid arthritis. This study will assess whether ixekizumab is superior to placebo in male and female subjects aged 6 to 17 year of age. It will also evaluate the potential development of anti-ixekizumab antibodies and the possible impact this potential outcome on subject efficacy of ixekizumab. Each of these studies may lead to new treatment options for adults and children with moderate to severe plaque-type psoriasis.



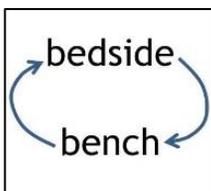
## DID YOU KNOW...?

### *NIH-funded preclinical study points to neutrophils for potential stroke treatment options.*

While neutrophils are known to act as infantry in the body's innate immune system, a recent NIH-funded pre-clinical study suggests they can act as medics as well. Researchers at the University of Texas Health Science Center showed that instead of attacking pathogens, some neutrophils may help heal the brain after an intracerebral hemorrhage, a form of stroke caused by ruptured blood vessels. In this study, the researchers found that interleukin-27 (IL-27), a cytokine that controls the activity of immune cells, may shift the role of neutrophils from harming the brain to helping with recovery. <https://www.nature.com/articles/s41467-017-00770-7>

## TRANSLATIONAL RESEARCH AT DOWNSTATE

### **Investigator: Dr. Christopher Roman –** *Systemic Lupus Erythematosus*



Work in the Christopher Roman lab is focused on understanding the molecular and cellular basis for immune pathologies, most prominently devastating autoimmune diseases like systemic lupus

erythematosus (lupus) that disproportionately affect women in our community. Specifically, their lab studies the role of the MiT family of gene regulators in leukocytes. His team, including Downstate graduate students Nanda Lahiri, Abhi Amarnani, Kamala Anumukonda, and a Hunter College/Downstate combined Masters student, Anna Zhen, has discovered that these family members are critical for immune function and preventing autoimmunity. For example, using mouse models, they discovered that loss of MiT family function in T cells leads to impaired expression of CD40L, an important ligand for communication from

a T cell to a B cell that is dysregulated in lupus, and impaired Foxp3 expression, needed for regulatory T cell function. Additionally, they found that loss of MiT family function in B cells leads to B cell hyper-activity and that inactivation of MiT family function in B cells greatly exacerbates lupus-like disease in mice. Current work focuses on identifying the gene targets that are regulated by the MiT family members in B cells and how they impact lymphocyte biology needed to curtail lupus-like autoimmunity. To establish whether paradigms in mice apply to humans, further work will include evaluation of MiT family member activity in healthy human B and T lymphocytes via isolation of peripheral blood mononuclear cells (PBMCs) from leukopaks from the NY Blood Center. Depending on the findings, future work with Downstate's CTSC would include experiments comparing healthy donor PBMCs and lupus patient donor PBMCs for MiT expression and function in collaboration with Drs. Ginzler and Dvorkina in Rheumatology.

## FUNDING OPPORTUNITIES:

The National Network of Depression Centers (NNDC) provides grant alerts for a wide range of funding opportunities. These include grants that support pilot projects not involving interventions.

<https://nndc.org/grant-alerts/>

## Q&A

**Q:** How can investigators inquire about subjects whom might also be eligible for your study too?

**A:** Just ask the CTSC; we'll try to facilitate. For example in the Genomic Psychiatry Cohort program, almost 98% of subjects agree to be recontacted to participate in other studies. So the GPC staff can notify them about being eligible for yours! All we would need is information about your inclusion criteria to see who might be eligible. *Michele Pato, 718-270-8254.*

## CTSC MEMBERS

Ovadia Abulafia | MaryAnn Banerji | Ivan Bodis-Wollner | Carl Cohen | Jack DeHovitz | Olga Dvorkina | Ellen Ginzler | Arthur Grant  
Deborah Gustafson | Jeanette Jakus | John Kral | Jason Lazar | Yi-Chun Lee | Steve Levine | William Litman | Scott Miller | Howard Minkoff  
Carlos Pato | Michele Pato | Miguel Ramirez Michael Reinhardt | Subodh Saggi | Yalini Senathirajah  
Iuliana Shapira | Tonya Taylor | Jessica Yager | Shahriar Zehtabchi

## HOW TO BECOME A CTSC MEMBER

The CTSC is a Center within the Institute for Genomic Health (IGH), Dr. Michele Pato, Director ([michele.pato@downstate.edu](mailto:michele.pato@downstate.edu)). Downstate faculty conducting IRB-approved studies are welcome to apply for CTSC membership. There are no fees associated with membership. For more information, visit <http://www.downstate.edu/ctsc>

CTSC Newsletter comments and suggestions? Email Dr. Richard Coico, CTSC Director: [richard.coico@downstate.edu](mailto:richard.coico@downstate.edu)