

# THE INIM

WINTER 2023

Institute for  
Neuro-Immune Medicine  
NOVA SOUTHEASTERN UNIVERSITY | **NSU**  
Florida



Dr. Nancy Klimas was recently featured in Time Magazine for her work on post-viral illnesses. As Assistant Dean, Research at the Dr. Kiran C. Patel College of Osteopathic Medicine, and Director of the Institute for Neuro-Immune Medicine, Klimas has 30 years of professional experience and is internationally recognized for her research and clinical efforts with neuro-immune disorders. Klimas is currently working on a CDC-

funded study that compares people with Long COVID to those who have myalgic encephalomyelitis/chronic fatigue syndrome (ME/CFS), with the hope of uncovering similarities and differences between the conditions.

Check it out!

<https://time.com/6240058/post-viral-illnesses-common-long-covid/>

## We are excited to welcome two new INIM team members!



**Oleksandra Shchebet, M.D.**  
*Clinical Research Coordinator II*

Oleksandra Shchebet, M.D., is an experienced neurologist focusing on chronic neurological disorders, such as: chronic pain, neuro-immune (ME/CFS, long COVID), and functional neurological diseases.



**Rajendra Pangen, Ph.D.**  
Assistant Professor of Genomics

Rajendra Pangen, Ph.D., is working on identifying genes that could be used as potential biomarkers and therapeutic targets in Gulf War illness, chronic fatigue syndrome (CFS), Cancer, and other genetic/epigenetic diseases. He uses single cell transcriptomics, whole-genome bisulfite sequencing, and other state-of-the-art technologies and laboratory approaches.

# New Year, Less Toxins

With the new year, we wanted to share six ways you can reduce toxins and increase the health of your home.

## Detox your Home for the New Year



### Exchange Outdoor Shoes with Indoor Shoes

Our shoes go with us everywhere. From public bathrooms and dirty sidewalks to pesticide-sprayed lawns and crowded public spaces. We certainly don't want to track all that around our home! Leave your outdoor shoes at the door and exchange them for indoor shoes to minimize outdoor contamination within your home.

### Light your Space

Natural light is the best and plays a vital role for your health and well-being through the regulation of bodily functions. When you need to light your space, incandescent or LED is preferable. If you do use fluorescent lights, it should be at least 4 ft away from human contact.

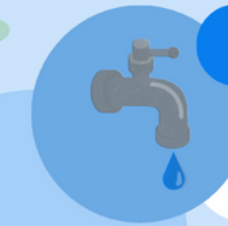


### Clean with "Clean" Products

Many of our household cleaners are full of toxic chemicals, harsh additives, and even harsher scents! Make your own with everyday ingredients, like vinegar, baking soda, and lemon. More non-toxic floor cleaners are: natural soap, Borax, Bon ami, and washing soda.

### Get Rid of These Popular Items

Sure- candles, incense, and oil diffusers can smell great; but, they are horrible for you. Air fresheners and deodorizers are just as bad. Avoid these whenever possible.



### Keep Tabs on Your Water!

First, learn what's in it! Read your annual tap water quality report. You can look up your city's water and filters that address those contaminants in the Environmental Working Group's National Water Database.

### Bring on the Water Filters

Use water filters that remove fluoride, chemicals, and heavy metals from your drinking water and shower head. Choose a filter certified to remove contaminants found in your water. Effectiveness varies and don't forget to read the fine print!



# ME/CFS Research Opportunities that you can participate in...

Study title	Where?	When
Immune/Inflammatory Priming In Exacerbating Responses To GWI Stressors	Miami VA Kendall/Davie INIM Clinic	Recruiting now!
The Use of Probiotics in ME/CFS	The Institute for Neuro-Immune Medicine Davie INIM Clinic	Recruiting Now!

## Interested in participating?

Contact Recruitment Director, Zachary Barnes:

zachary.barnes@va.gov

Office - (305) 575 - 7000 ext 14217

Cell - (617) 435 - 5634

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## Gulf War Illness Studies underway with INIM

- **The Reboot Study** - TNF & Glucocorticoid Antagonist for GWI Associated Multi-Symptom Disease Hemostasis Reset
  - Recruiting 18 male Operation Desert Shield/Desert Storm Veterans
- **Bacopa Study** - Nutraceutical for GWI Associated Cognitive Dysfunction & Biological Response
  - Recruiting Operation Desert Shield and/or Operation Desert Storm Veterans born between the years of 1946 to 1974.
- **Nicotinamide Riboside Clinical Trial for Gulf War illness**
  - Recruiting 1990- 1991 Gulf War - Operation Desert Storm and Operation Desert Shield between the age of 47-70.
- **BBRAIN for GWI**
  - Recruiting Veterans with Gulf War illness and Gulf War era healthy controls.
- **Nutraceutical Study For Gulf War Illness: Curcumin & Glutathione**
  - Operation Desert Shield and Operation Desert Storm Veterans with Gulf War illness.
- **Gulf War Illness: From Cells To Therapy**
  - Recruiting Veterans with Gulf War illness and Gulf War era healthy controls.
- **Women Vs. Men With Gulf War Illness: Differences In Computational Models And Therapeutic Target**
  - Recruiting male and female Operation Desert Shield/Desert Storm veterans located in the Miami-Dade and Broward County areas.

For more info about these studies, contact Recruitment Director, Zachary Barnes:  
zachary.barnes@va.gov | Office: (305) 575-7000 ext. 14217 | Cell: (617) 435-5634

# We're on Instagram!



Don't forget to connect with us on:

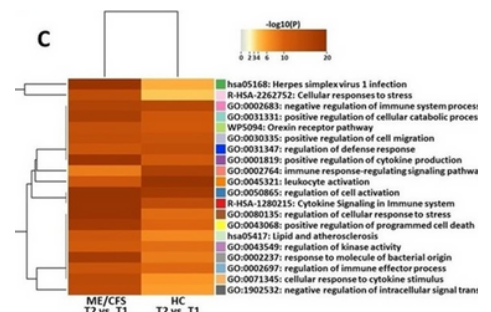
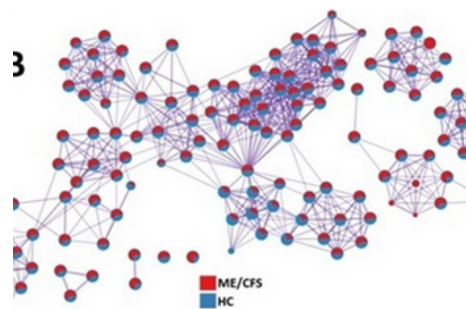


## New Publication!

Stress-Induced Transcriptomic Changes in Females with Myalgic Encephalomyelitis/Chronic Fatigue Syndrome Reveal Disrupted Immune Signatures

- Van Booven DJ, Gamer J, Joseph A, Perez M, Zarnowski O, Pandya M, Collado F, Klimas N, Oltra E, Nathanson L. International Journal of Molecular Sciences. 2023; 24(3):2698. <https://doi.org/10.3390/ijms24032698>

differentially expressed in each cohort. Cutoff values included a p-value of <0.01, a minimum count of 3, and an enrichment factor of >1.5. GO biological processes, KEGG pathways, Reactome gene sets, CORUM complexes, and canonical pathways from MsigDB were included in the search. (B) Nodes are colored by ratios ME/CFS to HC. The red color indicates functional pathways in ME/CFS patients while the blue color indicates functional pathways in HCs. (C) Heatmap of enriched terms across lists of DEGs between T2 and T1 in PBMC of ME/CFS patients and HCs.





# Food is Medicine: Cooking with Haylie Pomroy

## Italian Chicken Skillet

- 1 small spaghetti squash (about 2 lbs)
- Sea salt and black pepper
- 28-ounce can diced tomatoes
- 1 large yellow onion, chopped
- 1 tablespoon minced garlic
- ¼ cup plus ¼ cup chopped fresh basil, divided
- 3 small zucchini, diced
- 2 teaspoons Italian herbs
- 12 ounces chopped roasted chicken breast
- ½ cup pine nuts



## Directions

1. Preheat the oven to 450°F. Line a baking sheet with foil or parchment paper. Cut the spaghetti squash in half lengthwise, and scrape out and discard the seeds. Season with salt and pepper. Place cut-side-down on lined baking sheet and bake 40 to 45 minutes, or until tender. Once cool enough, scoop the tender 'noodles' out of the skins with a fork and set aside in a bowl.
2. Meanwhile, place a large nonstick skillet over medium-high heat. Add the tomatoes and their juice, onion, garlic, and ¼ cup of the chopped fresh basil. Sauté for 5 minutes, until the onion is tender. Add the chopped zucchini, Italian herbs, and ¼ teaspoon sea salt. Continue to cook for another 3 minutes, until the zucchini is tender.
3. Add the roasted chicken and tender spaghetti squash. Mix well and cook for 4 minutes. Taste and season with salt and pepper. Remove from heat and garnish with the remaining ¼ cup chopped fresh basil. Serve and enjoy! (For Days 8-10, sprinkle the pine nuts on top for healthy fat.) Phase 3 add additional healthy fat (2 servings).

<https://hayliepomroy.com/blogs/cooking-classes/lets-cook-my-italian-chicken-skillet-together>

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*Haylie Pomroy serves as the Assistant Director of the Integrative Medicine Program at the Dr. Kiran C. Patel College of Osteopathic Medicine and The Institute for Neuro-Immune Medicine at Nova Southeastern University.*

Haylie Pomroy is the founder and CEO of The Haylie Pomroy Group, an integrative health care practice that helps clients achieve their health, wellness, and weight-loss goals through strategic programs fueled by world class supplements.

Her expertise has helped diagnose and heal a wide range of issues and disorders related not just to weight and metabolic dysfunction but also to digestion, hormonal balance, autoimmunity, and more.



**NOW RECRUITING**

## The Use Of Directed Probiotics In ME/CFS

In this study, we aim to use the probiotic, Floradapt Intensive GI (other name i3.1), to reduce gastrointestinal (GI) inflammation and normalize the GI, to determine whether resetting your microbiome will help your gut health and perhaps your body as well while simultaneously assessing the effectiveness and safety of this intervention based on the severity of illness.

### Who can Participate?

INIM Researchers will evaluate the use of probiotics in 100 participants who:

- Are between 45 to 70 years of age
- Meet the Institute of Medicine (Canadian Consensus Criteria) case definition for ME/CFS
- May or may not be diagnosed with irritable bowel syndrome (IBS)

For more information, please email [KanekaStudy@nova.edu](mailto:KanekaStudy@nova.edu).



## Interested in donating to the INIM?

Text "NSUINIM" to 41444

Your gift, no matter the amount, will help advance groundbreaking research and ensure that the INIM will continue to be a vital resource for our community.

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