



# **Infectious Diseases Division Newsletter**

## **INSIDE THIS ISSUE**

- Awards and Honors
- Appointments and Transitions
- Grants
- Other News
- Newsroom Updates
- Divisional Publications
- Important Dates





# Awards and Honors



Congratulations to **Rochelle O'Brien** and **Ashley Soliwoda** – from CCTU for being selected as SUPER Star Performers in the Department of Medicine's Results, Rewards and Recognition Program.



Rochelle O'Brien



Ashley Soliwoda

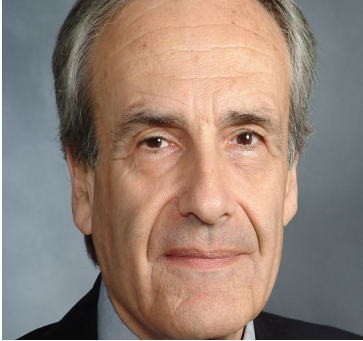
The Star Performer Program recognizes:

**Service** that is consistently exceptional,  
**Thoughtful, considerate** treatment of others,  
**Actions** that demonstrate extraordinary dedication and  
**Role models** of excellence

Feel free to nominate an employee who exhibits STAR qualities here: ([Link](#))



# Appointments and Transitions



Farewell and congratulations to **Lew Drusin**, professor of clinical medicine, who formally retired as of 12/31/2023 after decades of service to WCM. He was also appointed as WCM Professor Emeritus.



Farewell and congratulations to **Doug Nixon**, Professor of Immunology in Medicine, who will be leaving WCM and going to lead a translational research program in Northwell, effective 04/29/2024.



# Appointments and Transitions



Farewell to **Rob Furler O'Brien**, Assistant Professor in Medicine, who will be leaving WCM and going to join Doug Nixon in Northwell, effective 04/29/2024.



Farewell and congratulations to **Tim Wilkin**, Professor of Medicine, who will be leaving WCM on 06/30/2024, to become the Chief of Infectious Diseases and Global Public Health at UCSD (University of California, San Diego).

We will recognize our departing faculty members and fellows at the end-of-year celebration (06/25/2024).



# Grants



Congratulations to **Nicholas Hampilos**, who was awarded a Diversity Supplement to Lish Ndhlovu's R01 grant, entitled: "Harnessing Single Cell Epigenome-wide profiling of Myeloid cells to Compare and Contrast Alzheimer's from HIV-Associated Cognitive Dysfunction".





## Other News



### ***The Association Between Prior SARS-CoV-2 Infection and Incidence of Stroke:***

Naveed Akhtar<sup>1</sup> , Hiam Chemaitelly, Saadat Kamran, Abdul-Badi Abou-Samra, Laith J. Abu-Raddad, **Adeel A. Butt**



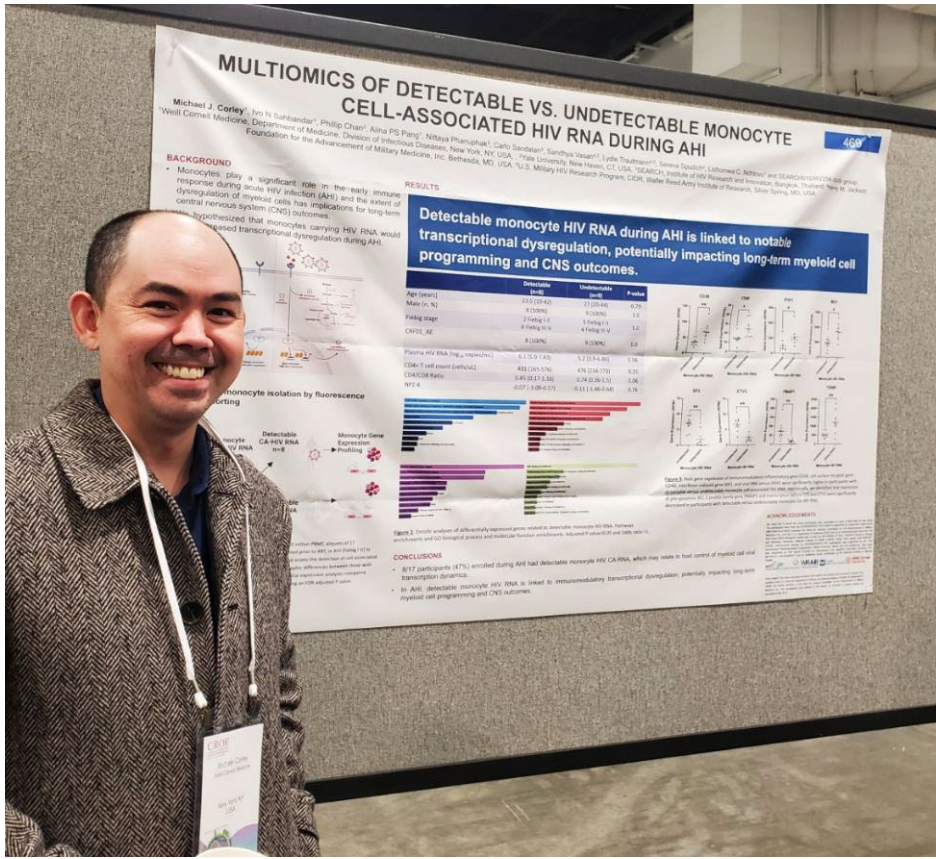


# Other News



## ***Multimomics of Detectable vs Undetectable Monocyte Cell-Associated HIV RNA During Acute HIV:***

**Michael J. Corley, Ivo Sahbandar, Phillip Chan, Alina P. Pang, Nittaya Phanuphak, Carlo P. Sacdalan, Sandhya Vasan, Lydie Trautmann, Serena S. Spudich, Lishomwa Ndhlovu, for the SEARCH010/RV254 Study Group**



**MULTIOMICS OF DETECTABLE VS. UNDETECTABLE MONOCYTE CELL-ASSOCIATED HIV RNA DURING AHI**

Michael J. Corley<sup>1</sup>, Ivo Sahbandar<sup>1</sup>, Phillip Chan<sup>1</sup>, Alina P. Pang<sup>1</sup>, Nittaya Phanuphak<sup>1</sup>, Carlo P. Sacdalan<sup>1</sup>, Sandhya Vasan<sup>1</sup>, Lydie Trautmann<sup>1</sup>, Serena S. Spudich<sup>1</sup>, Lishomwa Ndhlovu<sup>1</sup> and SEARCH010/RV254 Study Group

<sup>1</sup>Well Cornell Medicine, Department of Medicine, Division of Infectious Diseases, New York, NY, USA; <sup>2</sup>State University, New Haven, CT, USA; <sup>3</sup>SEARCH010, Institute of HIV Research and Innovation, Singapore; <sup>4</sup>Truett College of Arts and Sciences, Foundation for the Advancement of Military Medicine, Inc. Bethesda, MD, USA; <sup>5</sup>U.S. Military HIV Research Program, CDC, Walter Reed Army Institute of Research, Silver Spring, MD, USA

**BACKGROUND**

- Monocytes play a significant role in the early immune response during acute HIV infection (AHI) and the extent of dysregulation of myeloid cells has implications for long-term central nervous system (CNS) outcomes.
- We hypothesized that monocytes carrying HIV RNA would be associated with increased transcriptional dysregulation during AHI.

**RESULTS**

**Detectable monocyte HIV RNA during AHI is linked to notable transcriptional dysregulation, potentially impacting long-term myeloid cell programming and CNS outcomes.**

Gene	Detectable HIV RNA (n=18)	Undetectable HIV RNA (n=12)	P-value
Agpat2	3.5 (2.0-4.0)	2.3 (2.0-4.0)	0.79
Map3k4	0.1000	0.0000	1.0
Relb	2.7 (1.0-3.5)	1.5 (1.0-1.5)	1.0
CH2L3	0.1000	0.0000	1.0
Plasma HIV RNA (log <sub>10</sub> copies/mL)	6.1 (5.0-7.4)	5.2 (3.4-6.1)	1.0
CD4+ T cell count (cells/μL)	481 (145-576)	478 (218-771)	0.25
CD4/CD8 Ratio	0.46 (0.15-0.8)	0.48 (0.26-0.5)	0.26
NTF-4	-0.27 (-0.8-0.3)	-0.11 (-0.6-0.4)	0.78

**CONCLUSIONS**

- 817 participants (47%) enrolled during AHI had detectable monocyte HIV CA-RNA, which may serve to host control of myeloid cell and transcription dynamics.
- In AHI, detectable monocyte HIV RNA is linked to immunomodulatory transcriptional dysregulation, potentially impacting long-term myeloid cell programming and CNS outcomes.



# Other News

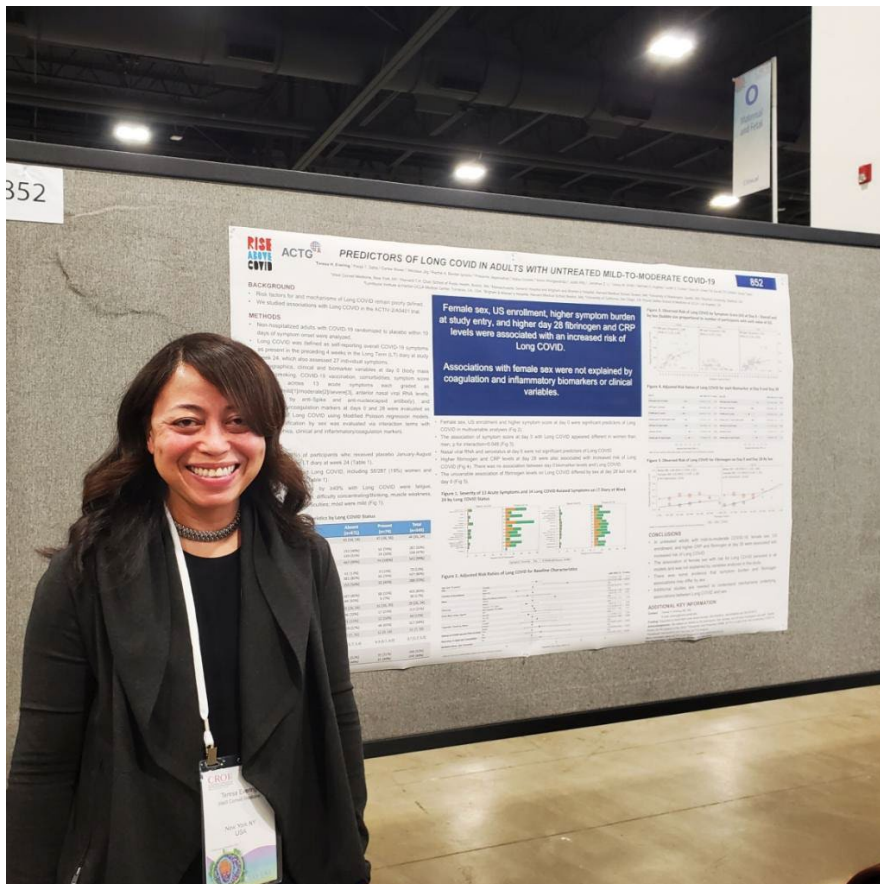


## ***Predictors of Long COVID in Adults With Untreated Mild-To-Moderate COVID-19:***

**Teresa H. Evering, M.D., M.S., Pooja T. Saha, Ph.D., Carlee Moser, Ph.D., Nikolaus Jilg, M.D., Ph.D., Rachel A. Bender Ignacio, M.D., M.P.H., Prasanna Jagannathan, M.D., Katya Corado, M.D., Kevin Wongsodirdjo, M.S., Justin Ritz, M.S., Jonathan Z. Li, M.D., Davey M. Smith, M.D., Michael D. Hughes, Ph.D., Judith S. Currier, M.D., M.Sc., Kara W. Chew, M.D., M.S., for the ACTIV-2/A5401 Study Team**

## ***Impact of Recombination on HIV-1 Evolutionary Dynamics in CSF and Plasma:***

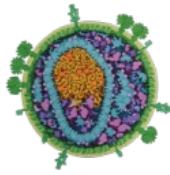
**Li Corrado, M.S., Leslie Ann St. Bernard, M.S., Daniel Dunn, B.A., Douglas F. Nixon, M.D., Ph.D.,<sup>2</sup> Weigang Qiu, PhD\*, Teresa H. Evering, M.D., M.S. (\*Equal Contribution)**







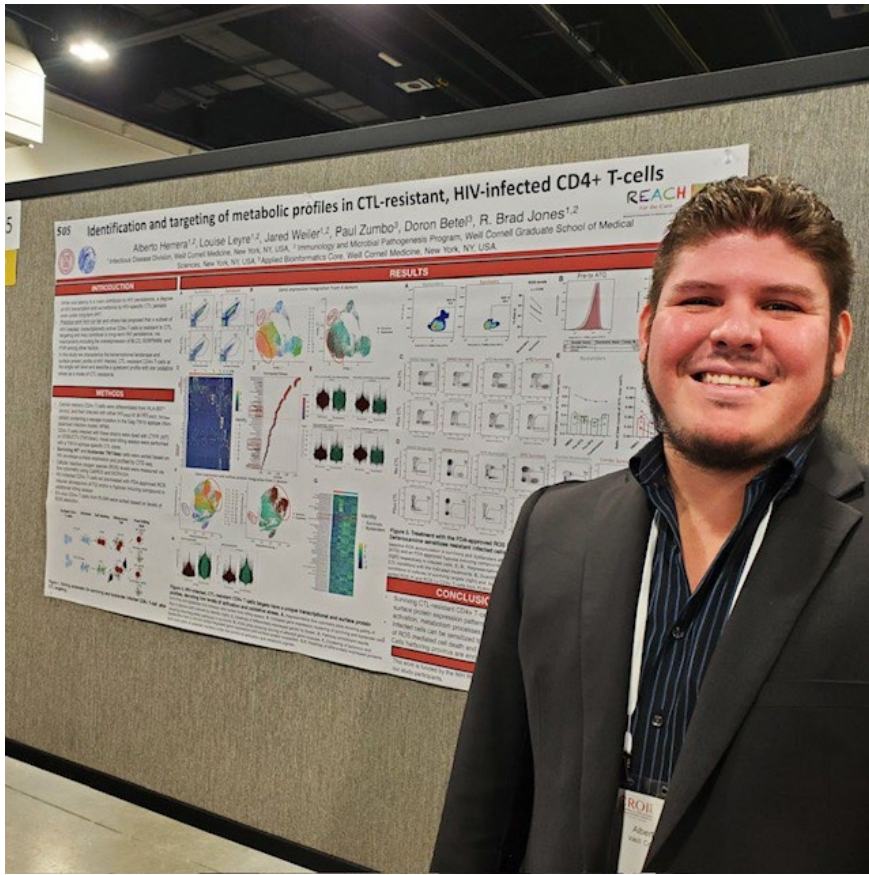
# Other News



**CROI**  
Conference on Retroviruses  
and Opportunistic Infections

## ***Identification and Targeting of Metabolic Profiles in CTL-Resistant, HIV-Infected CD4+ T-Cells:***

**Alberto Herrera, Louise Leyre, Jared Weiler, Paul Zumbo, Doron Betel, R. Brad Jones**

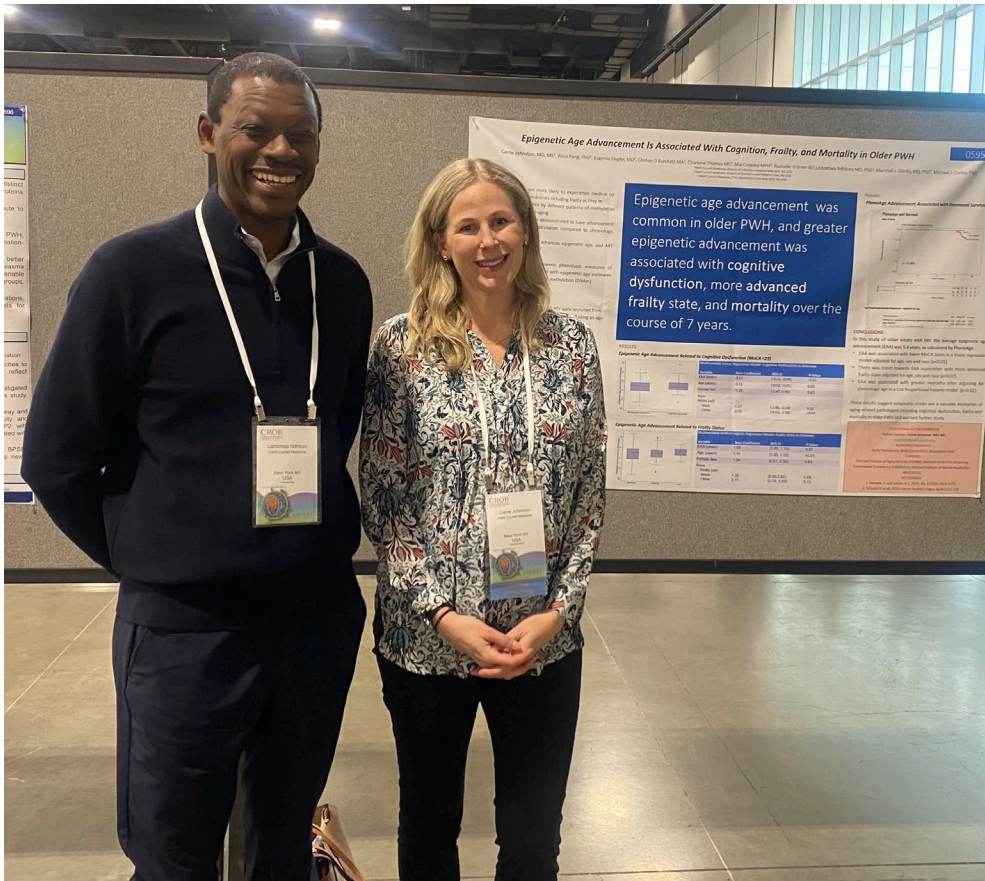




# Other News



The Division of Infectious Diseases had a major presence at this year's CROI (Conference on Retroviruses and Opportunistic Infections), Conference in Denver, from March 3-6.



## ***Epigenetic Age Advancement Is Associated With Cognition, Frailty, and Mortality in Older PWH:***

**Carrie Johnston, Alina P. Pang, Eugenia Siegler, Chelsie Burchett, Charlene Thomas, Mia Crowley, Rochelle O'Brien, Lishomwa Ndhlovu, Marshall Glesby, Michael J. Corley**



## Other News



### ***Role of Cytoskeleton and Adhesion in a Rare Subset of HIV-Infected Cells That Resist CTL:***

**Louise Leyre, Farah Mustapha, Alberto Herrera, Paul Zumbo, Micheal Galiano, Jared Weiler, Doron Betel, Morgan Huse, R. Brad Jones**





## Other News



### ***HepB-CpG Vaccine Is Superior to HepB-alum in People With HIV and Prior Vaccine Nonresponse:***

**Kristen Marks**, Minhee Kang, Triin Umbleja, Andrea Cox, Karen J. Vigil, Ngan T. Ta, Ayotunde Omoz-Oarhe, Jennifer C. Price, Josphat Kosgei, Leolin Katsidzira, Hugo Perazzo, Kevin Knowles, Beverly L. Alston-Smith, Kenneth E. Sherman, for the ACTG 5379 (BEe-HIVe) Study Team



### ***A Phase II Trial of 4 Weeks of Glecaprevir/Pibrentasvir for Early Hepatitis C Virus: ACTG A5380:***

Arthur Kim , Minhee Kang , Triin Umbleja<sup>2</sup> , Estevao P. Nunes<sup>3</sup> , **Kristen Marks** , Chanelle Wimbish , Daniel S. Fierer<sup>6</sup> , Annie Luetkemeyer, Dimas Kleimann, Sunil Suhas Solomon, Leonard Sowah, Beverly L. Alston-Smith, David L. Wyles, Susanna Naggie, for the A5380 Study Team

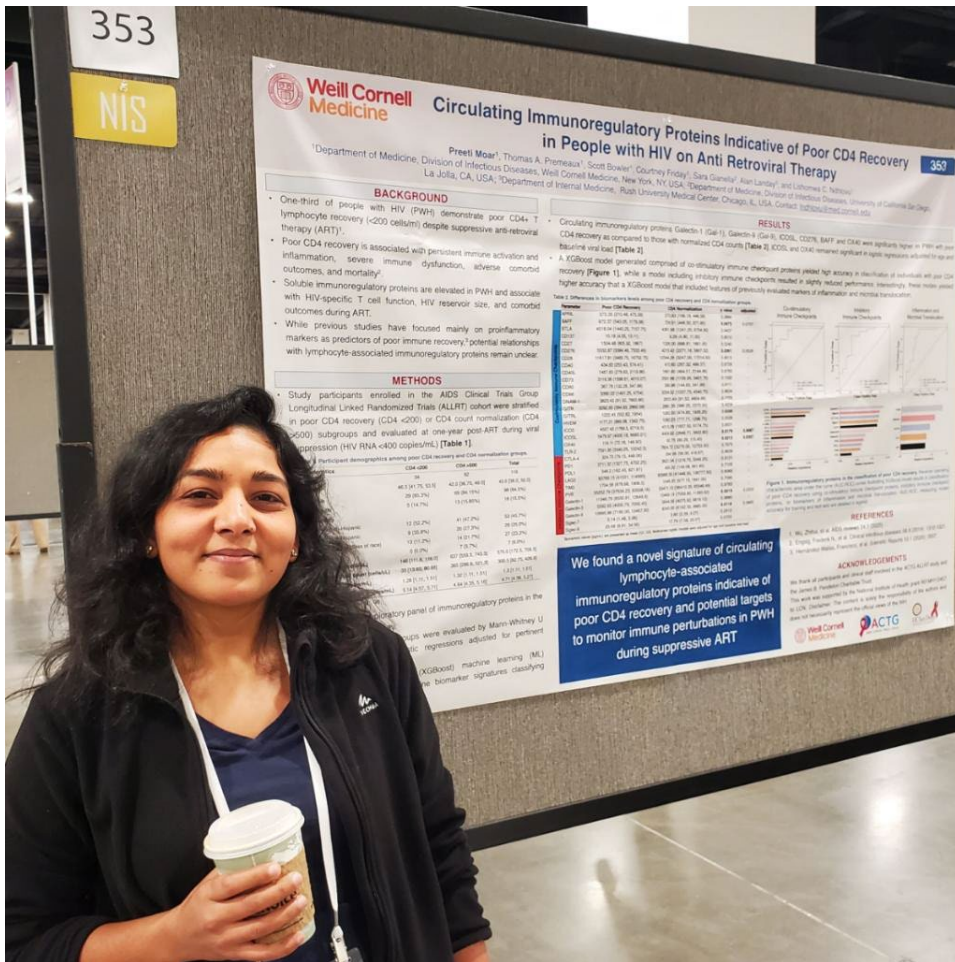


# Other News



## Circulating Immunoregulatory Proteins Indicative of Poor CD4 Recovery in People With HIV on ART:

Preeti Moar, Thomas A. Premeaux, Scott Bowler, Courtney Friday, Sara Gianella, Alan Landay, Lishomwa Ndhlovu



**Weill Cornell Medicine**

### Circulating Immunoregulatory Proteins Indicative of Poor CD4 Recovery in People with HIV on Anti Retroviral Therapy

Preeti Moar<sup>1</sup>, Thomas A. Premeaux<sup>2</sup>, Scott Bowler<sup>3</sup>, Courtney Friday<sup>4</sup>, Sara Gianella<sup>5</sup>, Alan Landay<sup>6</sup>, and Lishomwa N. Ndhlovu<sup>1</sup>

<sup>1</sup>Department of Medicine, Division of Infectious Diseases, Weill Cornell Medicine, New York, NY, USA; <sup>2</sup>Department of Medicine, Division of Infectious Diseases, University of California San Diego, La Jolla, CA, USA; <sup>3</sup>Department of Internal Medicine, Rush University Medical Center, Chicago, IL, USA; Contact: [ndhlovu@med.cornell.edu](mailto:ndhlovu@med.cornell.edu)

**BACKGROUND**

- One-third of people with HIV (PWH) demonstrate poor CD4+ T lymphocyte recovery (<200 cells/mm<sup>3</sup>) despite suppressive anti-retroviral therapy (ART).
- Poor CD4 recovery is associated with persistent immune activation and inflammation, severe immune dysfunction, adverse comorbid outcomes, and mortality<sup>1</sup>.
- Soluble immunoregulatory proteins are elevated in PWH and associated with HIV-specific T cell function, HIV reservoir size, and comorbid outcomes during ART.
- While previous studies have focused mainly on proinflammatory markers as predictors of poor immune recovery, potential relationships with lymphocyte-associated immunoregulatory proteins remain unclear.

**METHODS**

- Study participants enrolled in the AIDS Clinical Trials Group Longitudinal Linked Randomized Trial (ALLRT) cohort were stratified in poor CD4 recovery (CD4 <200) or CD4 count normalization (CD4 >500) subgroups and evaluated at one-year post-ART during viral suppression (HIV RNA <400 copies/mL) [Table 1].

Participant demographics among poor CD4 recovery and CD4 normalization groups	CD4 <200	CD4 >500	Total
N	100	100	200
Age (mean ± SD)	42.3 (8.4), 34.0	41.0 (8.0), 33.0	41.7 (8.2), 33.5
Sex (n, %)	49 (49.0%), 49 (49.0%)	50 (50.0%), 50 (50.0%)	99 (49.5%), 99 (49.5%)
Race (n, %)	11 (11.0%), 11 (11.0%)	11 (11.0%), 11 (11.0%)	22 (11.0%), 22 (11.0%)
Time since HIV diagnosis (mean ± SD)	4.1 (2.7), 3.0	3.8 (2.7), 2.8	4.0 (2.7), 2.9
Time since ART initiation (mean ± SD)	1.0 (0.7), 0.8	1.0 (0.7), 0.8	1.0 (0.7), 0.8
Time since viral suppression (mean ± SD)	1.0 (0.7), 0.8	1.0 (0.7), 0.8	1.0 (0.7), 0.8
Time since CD4 count normalization (mean ± SD)	1.0 (0.7), 0.8	1.0 (0.7), 0.8	1.0 (0.7), 0.8
Time since ART initiation and viral suppression (mean ± SD)	1.0 (0.7), 0.8	1.0 (0.7), 0.8	1.0 (0.7), 0.8
Time since CD4 count normalization and viral suppression (mean ± SD)	1.0 (0.7), 0.8	1.0 (0.7), 0.8	1.0 (0.7), 0.8
Time since ART initiation, viral suppression, and CD4 count normalization (mean ± SD)	1.0 (0.7), 0.8	1.0 (0.7), 0.8	1.0 (0.7), 0.8

**RESULTS**

- Circulating immunoregulatory proteins Galectin-1 (Gal-1), Galectin-9 (Gal-9), CD28, CD276, BAP, and CD46 were significantly higher in PWH with poor CD4 recovery as compared to those with normalized CD4 counts [Table 2].
- A XGBoost model generated comprised of immunoregulatory immune checkpoint proteins yielded high accuracy in identification of individuals with poor CD4 recovery [Figure 1], while a model including antibody immune checkpoints resulted in slightly reduced performance. Interestingly, these models possessed higher accuracy than a XGBoost model that included features of previously evaluated markers of engagement and chronic inflammation.

Protein	Poor CD4 Recovery	CD4 Normalization	P-value
CD46	17.23 (2.74), 45.32	12.61 (1.44), 31.46	0.0001
CD276	87.72 (24.82), 150.78	59.24 (10.42), 108.05	0.0001
CD28	40.12 (10.24), 70.01	30.48 (5.24), 45.72	0.0001
CD27	13.24 (3.12), 23.36	10.12 (1.84), 18.48	0.0001
Gal-1	55.84 (10.12), 101.56	42.12 (7.12), 78.12	0.0001
Gal-9	14.12 (3.12), 25.12	10.12 (1.84), 18.48	0.0001
BAP	4.12 (0.84), 7.12	3.12 (0.64), 5.12	0.0001
CD46	17.23 (2.74), 45.32	12.61 (1.44), 31.46	0.0001
CD276	87.72 (24.82), 150.78	59.24 (10.42), 108.05	0.0001
CD28	40.12 (10.24), 70.01	30.48 (5.24), 45.72	0.0001
CD27	13.24 (3.12), 23.36	10.12 (1.84), 18.48	0.0001
Gal-1	55.84 (10.12), 101.56	42.12 (7.12), 78.12	0.0001
Gal-9	14.12 (3.12), 25.12	10.12 (1.84), 18.48	0.0001
BAP	4.12 (0.84), 7.12	3.12 (0.64), 5.12	0.0001

**CONCLUSIONS**

We found a novel signature of circulating lymphocyte-associated immunoregulatory proteins indicative of poor CD4 recovery and potential targets to monitor immune perturbations in PWH during suppressive ART.

**ACKNOWLEDGMENTS**

We thank all participants and staff involved in the ALLRT cohort and the Center for Applied Immunology and Vaccine Development (CAIVD) at Weill Cornell Medicine. This work was supported by the National Institutes of Health (NIH) grant R01AI123456. The authors are grateful to the members of the Center for Applied Immunology and Vaccine Development (CAIVD) at Weill Cornell Medicine for their assistance in the laboratory.

**REFERENCES**

- Moar P, et al. AIDS. 2020;34(12):2100-2110.
- Friday C, et al. J Infect Dis. 2019;220(12):1980-1990.
- Moar P, et al. J Infect Dis. 2019;220(12):1980-1990.
- Moar P, et al. J Infect Dis. 2019;220(12):1980-1990.
- Moar P, et al. J Infect Dis. 2019;220(12):1980-1990.
- Moar P, et al. J Infect Dis. 2019;220(12):1980-1990.

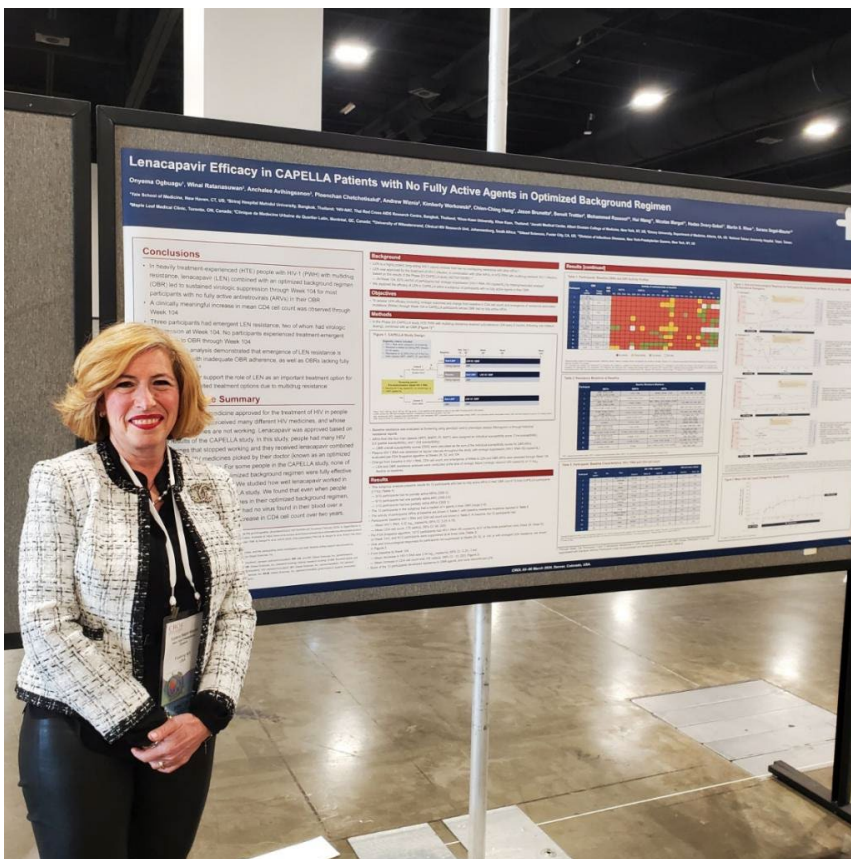


# Other News



## ***Lenacapavir Efficacy in CAPELLA Patients With No Fully Active Agents in Optimized Background Regimen:***

Onyema Ogbuagu, Winai Ratanasuwan, Anchalee Avihingsanon, Ploench Chetchotisakd, Andrew Wiznia, Kimberly Workowski, Chien-Ching Hung, Jason Brunetta, Benoit Trottier, Mohammed Rassool, Hui Wang, Nicolas Margot, Hadas Dvory-Sobol, Martin S. Rhee, **Sorana Segal-Maurer**



**Lenacapavir Efficacy in CAPELLA Patients with No Fully Active Agents in Optimized Background Regimen**  
 Onyema Ogbuagu<sup>1</sup>, Winai Ratanasuwan<sup>2</sup>, Anchalee Avihingsanon<sup>3</sup>, Ploench Chetchotisakd<sup>4</sup>, Andrew Wiznia<sup>5</sup>, Kimberly Workowski<sup>6</sup>, Chien-Ching Hung<sup>7</sup>, Jason Brunetta<sup>8</sup>, Benoit Trottier<sup>9</sup>, Mohammed Rassool<sup>10</sup>, Hui Wang<sup>11</sup>, Nicolas Margot<sup>12</sup>, Hadas Dvory-Sobol<sup>13</sup>, Martin S. Rhee<sup>14</sup>, Sorana Segal-Maurer<sup>15</sup>

**Conclusions**

- In heavily treatment-experienced (HTE) people with HIV-1 (PWH) with no fully active agents (NFAA) in their optimized background regimen (OBR), lenacapavir (LEN) combined with an integrase strand transfer inhibitor (INSTI) led to sustained virologic suppression through Week 104 for most participants with no fully active antiretrovirals (ARVs) in their OBR.
- A clinically meaningful increase in mean CD4 cell count was observed through Week 104.
- These participants had emergent INSTI resistance, few of whom had virologic success at Week 104. No participants experienced treatment-emergent INSTI through Week 104.
- Analysis demonstrated the emergence of LEN resistance in participants with moderate OBR adherence, as well as OBRs lacking fully active agents.

**Summary**

... support the role of LEN as an important treatment option for HTE people with HIV-1 who are unable to achieve viral suppression due to existing resistance.



## Other News



**Teresa Evering** gave a presentation for the Cayuga Medical Center at Ithaca Virtual Regional Lecture Series, titled "*Long COVID-Focus on the Adult Population*" on 03/01/2024.



**Priya Kodiyanplakkal** will be a panelist at the Transplant Infectious Disease (TID) - Clinicopathologic Conference Series webinar, on 04/03/2024. ([Link](#))



# Newsroom Updates



**Karen Acker** (in Pediatrics, Infectious Diseases) was featured in the following:

[Yahoo Life](#): “There's a measles outbreak in Florida. Should you change your travel plans?”.



**Dan Fitzgerald** (in Global Health, Infectious Diseases) was featured in the following:

[Pharmacy Times](#): “Second-Line Bedaquiline-Based Regimens Demonstrates Microbiological Response in Patients With TB”



**Robert Peck** (in Global Health, Infectious Diseases) was featured in the following:

[Cornell Chronicle](#): “Improving care of hospitalized patients with HIV in Tanzania”.







## Divisional Publications

- **Peck RN**, Issarow B, Kisigo GA, Kabakama S, Okello E, Rutachunzibwa T, Willkens M, Deogratias D, Hashim R, Grosskurth H, **Fitzgerald DW**, Ayieko P, Lee MH, Murphy SM, Metsch LR, Kapiga S. Linkage Case Management and Posthospitalization Outcomes in People With HIV: The Daraja Randomized Clinical Trial. JAMA. 2024 Mar 26;331(12):1025-1034. doi: 10.1001/jama.2024.2177. PMID: 38446792; [PMCID: PMC10918579](#).
- **Torres HM**, Marino J, **Simon MS**, Singh HK, **Westblade LF**, **Calfee DP**. High touch surface bioburden associated with the use of disinfectants with and without continuously active disinfection in ambulatory care settings. Infect Control Hosp Epidemiol. 2024 Feb 20:1-3. doi: 10.1017/ice.2024.27. Epub ahead of print. [PMID: 38374787](#).





# Important Dates



Columbia-Cornell  
HIV Research Symposium  
Belfer Building Rooms: 204-A and 204-B  
1PM to 4PM



WCM Community Town Hall  
([Need to Register](#))



I.D. Faculty Meetings  
12:00PM to 1:00PM  
([Zoom Link](#))



Annual IDSNY Meeting  
Albert Einstein College of Medicine  
([Register Link](#))



State of the Division  
(4PM – 5PM) (Belfer 202-3)  
End of Year Celebration  
(5PM – 8PM) (1300 York Courtyard)