BUFFALO NEUROIMAGING ANALYSIS CENTER

Jacobs School of Medicine and Biomedical Sciences
University at Buffalo

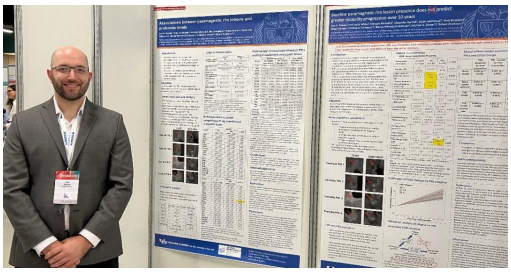
# BNAC in the Spotlight at ECTRIMS 2023

3 Platforms, 17 Posters, and the Best Poster Award!

**Buffalo, NY** – The Buffalo Neuroimaging Analysis Center (BNAC) enjoyed the spotlight at the recent European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) 2023 where its researchers were recognized for an unprecedented array of publications that are shaping the field of neuroimaging in multiple sclerosis (pwMS) and related disorders. **With three platform presentations and seventeen posters,** BNAC had an exceptionally strong presence at ECTRIMS, demonstrating its leadership in the field and unwavering commitment to advancing neuroimaging research.

The crowning moment was when **Dejan Jakimovski, MD, PhD** was honored with the prestigious Best Poster Award for his retrospective observational study of 1,893 people with MS (pwMS) using data from the New York State MS Consortium (NYSMSC). Examining the long-term disability impact of discontinuing disease-modifying treatments (DMTs),the study found that people who stopped DMTs were at five times the risk of progression to a score of 4.0 as measured by the Expanded Disability Status Scale (EDSS), a nearly four-fold chance of progression to EDSS 6.0,and had a significant chance of transitioning to secondary-progressive MS. **The study highlights the critical nature of sustained DMT use in mitigating MS progression.**

> *This award is a result of the hard work by Dr. Jakimovski, his research team, and our collaborators at MS centers in the New York State MS Consortium. It is also a testament to the innovative spirit that drives research at our Center. The findings enhance the scientific community's understanding of MS and illuminate a new path toward improved patient care.*
> -BNAC Director, Robert Zivadinov, MD, PhD



**Jack Reeves, PhD candidate,** was recognized for his 10-year follow-up study of 123 pwMS. It found that spots of chronic, inflammatory demyelination in the brain known as **paramagnetic rim lesions (PRLs) are significant predictors of increased relapse rates in pwMS.** Reeves also presented several other posters about the importance of PRLs and disease outcomes in MS.

**Tom Fuchs, PhD** presented data showing for the first time that **most cognitive decline in people with relapsing-remitting MS occurred independently of relapse.** Of the 353 patients assessed over 15 years, 51.3% experienced cognitive decline. Surprisingly, 85.9% of these declines wereclassified as progression independent of relapse activity (PIRA), meaning they happened without a close temporal relation to any clinical relapse. This was a collaborative study involving BNAC, Jacobs Multiple Sclerosis Center at the

University at Buffalo (UB) and Vrije Universiteit Amsterdam.

> *The study highlights the* ***silent wave of cognitive decline that often goes undetected, overshadowed by the more visible physical disabilities.*** *Our findings advocate for a paradigm shift in monitoring MS — one that integrates routine cognitive testing to reveal the broader impact of the disease on the brain and quality of life.*
> -Ralph Benedict, PhD and Senior Author

BNAC's findings from the **Comprehensive Assessment of Severely Affected Patients in MS (CASA-MS)** study exemplified this research center's **commitment to better understand the more severe stages of MS.** This study compared 53 pwMS with severe disease residing at The Boston Home (TBH), a specialized residential facility in Dorchester, Massachusetts where they residents receive constant care to a control group of 53 people with less severe MS progression from the Jacobs Multiple Sclerosis Center at the University at Buffalo (UB). The two cohorts were matched for age, sex, and disease duration. The study showed that **the cohort with more severe progression had less gray matter in the cortex, thalamus and spinal cord** compared to those with less severe progression. Those with more severe progression also had **greater structural brain dysconnectivity.** Another aspect of the study explored disability quantification methods for severely affected pwMS. It found that a more granular and continuous measure of physical disability such as the **Scripps Neurological Rating Scale (SNRS)** and the **Combinatorial Weight-Adjusted Disability Score (CombiWISE) may be better suited for evaluating of disease progression than the EDSS measure.**

Buffalo Neuroimaging Analysis Center's Core Lab division also participated in a series of clinical trials whose results were presented by industry partners Bristol Myers Squibb, CorEvitas and Octave Biosciences. These studies demonstrate **how collaboration between industry and academia advances neuroimaging research and fosters innovative solutions to benefit people with neurological conditions, such as MS.**

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