November 2021 NIDUS Newsletter

Network for Investigation of Delirium: Unifying Scientists

In this issue:

NIDUS II: A New Cycle

NIDUS II has now launched! During its first five years, NIDUS achieved so many milestones, which we outlined in a past newsletter. Now, we're happy to announce **NIDUS II!**

So what's the difference between NIDUS II and NIDUS I? NIDUS I was the first grant cycle where we built much of our infrastructure, and sponsored many pilot grants for junior investigators. NIDUS II is a new grant cycle that began in July 2021.

Although there are a few different aims and focus areas, **the overarching goal remains the same: To support and establish a collaborative network to advance scientific research on the causes, mechanisms, outcomes, diagnosis, prevention, and treatment of delirium in older adults.** NIDUS II

infrastructure to catalyze and complete collaborative research projects.

Below is a list of the NIDUS Cores and Task Forces:

- Delirium Research Hub
- Measurement & Harmonization
- Pilot Awards & Innovation
- Mentorship & Career Development
- Dissemination & Blog

9th Annual NIDUS Delirium Boot Camp

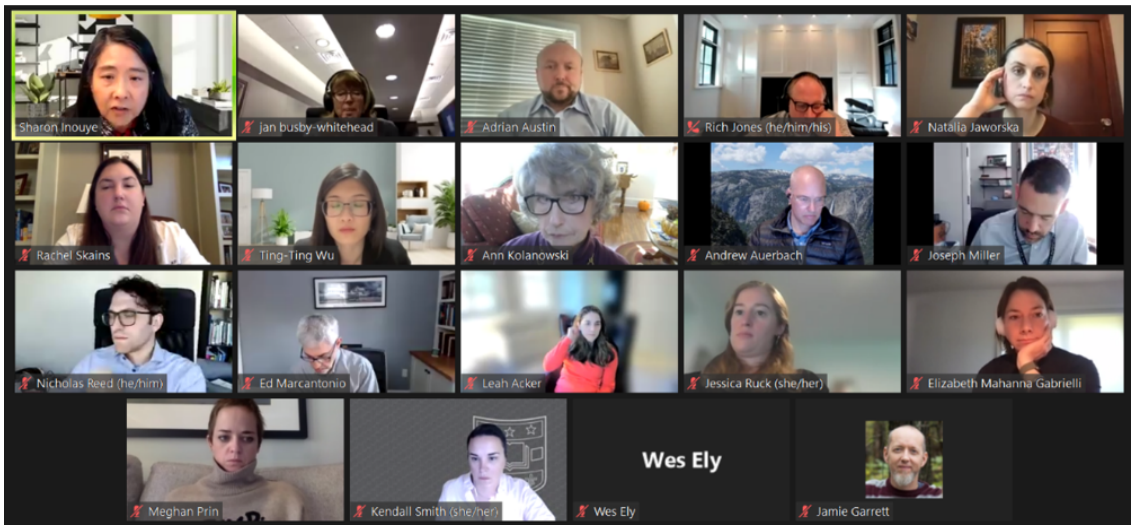
The 2021 NIDUS Delirium Boot Camp focused on the inter-relationship between delirium and ADRD was held on November 8 and 9, 2021. Founded in 2013, the 2021 Boot Camp, co-directed this year by Jan Busby Whitehead MD and John Devlin PharmD, and supported by the NIA (R13185760), brought together 12 diverse researcher mentees from various professions and clinical settings along with 4 junior faculty (prior Boot Camp alums) and 16 senior faculty researchers. Due to ongoing COVID-19 concerns, the 2021 Boot Camp was held virtually.

Over two days, senior faculty presented a number interactive delirium research-related didactic presentations, moderated networking sessions, provided CAM training, and facilitated a NIH-style mock review session where another mentee and two faculty who reviewed each research proposal, provided valuable feedback to the mentee.

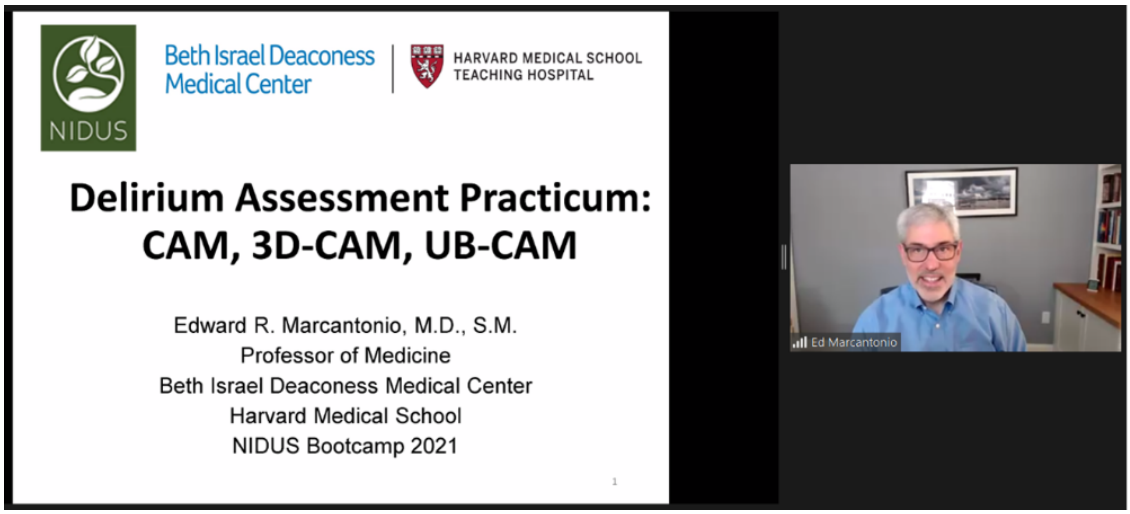
Below are a few screenshots of this year's Boot Camp. Also, for those who were unable to attend, we'll make the recorded webinars available on the NIDUS website in the coming weeks.

The 10th Annual NIDUS Delirium Boot Camp will be held in the fall of 2022 (date TBD). Applications will open in early 2022. Please check the NIDUS website for updated information on the 2022 Boot Camp.

2021 Boot Camp co-directors: Jan Busby Whitehead MD and John Devlin PharmD



A 2021 NIDUS Boot Camp Mock Study session



NIDUS January Webinar - Career Development Award Research Mentoring Session

Our next webinar will feature Dr. Thomas M. Gill, Dr. Esther Oh, and Dr. Nicholas Reed. This session's Moderator/Discussant will be Dr. Jan Busby Whitehead. Register via Zoom link below. All NIDUS webinars are free!

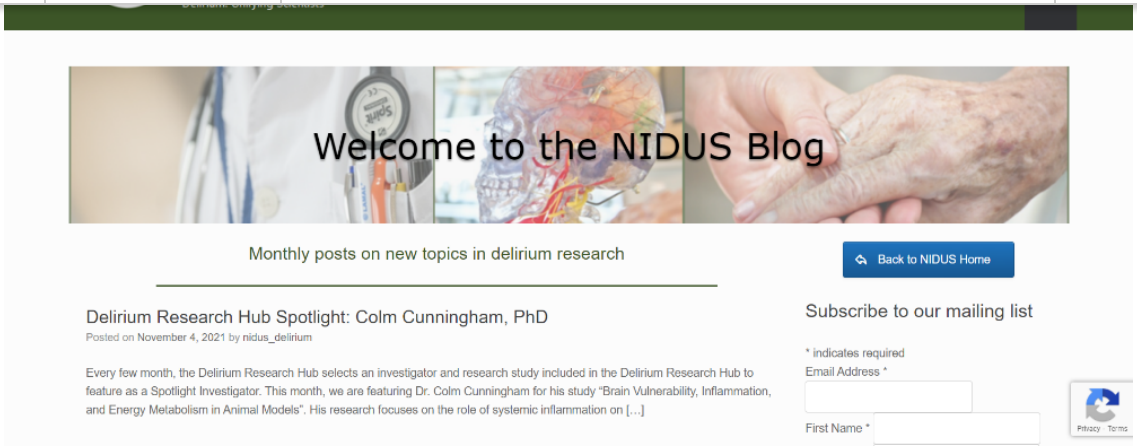
When: Wednesday, January 26, 2022, 2:00pm - 3:00pm EST
Detailed Agenda

- **2:00-2:20:** Developing a Successful Career Development Award (Dr. Thomas M. Gill)
- **2:20-2:40:** Career Development Awards: A Story of Success (Dr. Esther Oh & Dr. Nicholas Reed)
- **2:40-3:00:** Q&A; Discussion moderated by Dr. Jan Busby Whitehead

Registration Link:
link: https://zoom.us/meeting/register/tJUrcu2tqzwiEtVCxx1LXDx8Iw7Hd78cv5lS
Phone: +13126266799
Meeting ID: 916 5455 7881
Passcode: 129336

Check Out the NIDUS Blog

The NIDUS Blog features posts on a variety of topics related to delirium research with a focus on the core NIDUS II aims. Many blogs are authored by NIDUS Bootcamp alums. The latest blog post features Colm Cunningham, PhD, and his study ***Brain Vulnerability, Inflammation, and Energy Metabolism in Animal Models.*** New Blogs are posted monthly. If you haven't already, we encourage you to check out the NIDUS Blog.



Other NIDUS Communications

In addition to the NIDUS Blog, we offer regular updates on delirium-related news, events and research through social media, our email listserve, and newsletters.

- Email Listserve - Subscribe to our email list for regular updates delivered straight to your inbox.
- Newsletters - Find previous editions of NIDUS newsletters on our website.
- Social Media – For all the latest updates, follow NIDUS on Twitter (@nidus_delirium).

If you're interested in contributing to NIDUS communications with a blog post, newsletter item, or social media post, contact us.

Follow us on Twitter Visit our Website

Delirium Measurement Info Cards

If you've ever used a delirium measurement tool, you might know that they vary considerably. Although there is a wide variety of instruments for screening, it can be difficult to choose the most appropriate tool for your practice or research.

In response, we created **Delirium Info Cards** (see sample below). These cards provide a standardized summary of commonly used delirium measurement tools to assess delirium. There are two Info Card collections for use in both ICU and non-ICU settings:

- Pediatric - Includes 5 pediatric delirium screening or diagnostic tools

Instrument	Confusion Assessment Method NOTE: This card is populated with information from the instrument's original validation study only.	
Acronym	CAM	
Primary Use	Delirium Screening	
Area assessed (Number of questions)	*Short Form* – 4 questions pertaining to the following core features: Acute Onset & Fluctuating Course; Inattention; Disorganized Thinking; Altered Level of Consciousness	*Long Form* – 10 questions, includes the following features in addition to Short Form: Disorientation; Memory Impairment; Perceptual Disturbances; Psychomotor Agitation and Retardation; Altered Sleep-Wake Cycle
Description	An instrument to improve identification and recognition of delirium; a standardized method to enable non-psychiatrically trained clinicians to identify delirium quickly and accurately in clinical and research settings.	
Versions	2 (Short and Long forms)	
Scoring information	Delirium scored as 'present' (1) or 'absent' (0) based on question responses; CAM is considered positive based on the CAM algorithm: presence of acute onset or fluctuating course –AND- inattention -AND EITHER- disorganized thinking or altered level of consciousness.	
Cognitive testing	To rate the CAM, you must perform brief (5-10 min) formal cognitive testing. You can use any instrument, such as the Short Portable Mental Status Questionnaire or Mini-Cog Test.	
Estimated time to rate	3-5 minutes for cognitive testing, followed by 3 minutes for rating instrument (short form); 5 minutes for rating long form	
Require trained rater	Yes – trained lay raters or clinicians	
Administer to	Patient, in-person	
How to obtain	Detailed free instructions (registration required) at http://hospitalelderlifeprogram.org	
Licensing Fee*	None for non-profit or educational uses	
Languages available	English, Arabic, Dutch, French, German, Italian, Polish, Portuguese, Spanish, Thai, Turkish	
Highest COSMIN** rating	4.5/6†	
Test Performance Characteristics	**Inouye 1990** [Site 1: newly evaluated patients ≥65 years old at Geriatric Assessment Center and six wards at Yale-New Haven Hospital, N=30; Site 2: admitted patients with same inclusion criteria as Site 1 to Bernard Mitchell Hospital at University of Chicago, N=26]. **Reference Standard: Geriatric psychiatrist rating after comprehensive assessment.** •Reliability (inter-observer): presence/absence of delirium 100% k=1.0; for rating all nine clinical features 88% k=0.67; assessing 4 CAM features 93% K=0.81 •Convergent Validity (Compared to Mini-Mental State Examination [MMSE]): Kappa (k)=0.64, story recall k=0.59, Visual Analog Scale for Confusion k=0.82, digit span test k=0.66 •Sensitivity/Specificity: 1.00/0.95 (Site 1); 0.94/0.90 (Site 2) •Positive Predictive Accuracy: 91% (Site 1); 94% (Site 2) •Negative Predictive Accuracy: 100% (Site 1); 90% (Site 2)	

* Fees and licensing information is effective as of 2018, but is subject to change over time

** COSMIN is used to rate a study's evaluation of a survey or test's measurement properties. COSMIN does NOT rate the instrument itself, but helps readers understand if they can have confidence in the results of studies evaluating measurement properties of surveys and tests. For example, a rigorous study evaluating a test with poor measurement properties will receive a "good" COSMIN rating, while a poorly-conducted study evaluating a test with good measurement properties will receive a "poor" COSMIN rating. Small sample size can impact all COSMIN ratings. You must consider both the COSMIN rating and the results of studies provided when forming your opinion about that test. *COSMIN ratings shown are based solely on the instrument's original validation study.*

† COSMIN breakdown: content validity: GOOD, effect indicators: GOOD, internal consistency: NONE, inter-rater reliability: FAIR, construct validity: NONE, external validity: GOOD

Last updated on **October 27, 2020.** If you are aware of any updates required for this document, please notify us via nidus@hsl.harvard.edu .

These measurements come from a systematic review and a 2017 online survey*. As a result, they contain information from each instrument's original validation study.

Not seeing what you need in this measurement list? Submit information about a

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Current Research Priority Areas

NIDUS is designed to help accelerate scientific discovery in the field of delirium. As a central program for all researchers interested in delirium, NIDUS provides resources for conducting research. Below are NIDUS' four Research Priority Areas:

1. **Inter-Relationship of Delirium and ADRD:** studies on risk factors, pathophysiology, and treatment.
2. **Measurement of Delirium:** Harmonization and refinement of measurement, with a goal towards unified assessment.
3. **Pathophysiology:** Biomarker and mechanistic studies to advance our understanding and identify therapeutic targets.
4. **Clinical Trials:** Intervention Development studies for future clinical trials, especially of treatments for delirium

NIDUS Published Papers

Measurement Core:

Helfand BKI, Detroyer E, Milisen K, Adamis D, Metzger ED, Boudreaux ED, Inouye SK, Jones RN. Harmonization of Four Delirium Instruments: Creating Crosswalks and the Delirium Item-Bank (DEL-IB). Am J Geriatr Psychiatry. 2021 Jul 29;. doi: 10.1016/j.jagp.2021.07.011. [Epub ahead of print]

Ancillary Studies:

Arias F, Alegria M, Kind AJ, Jones RN, Travison TG, Marcantonio ER, Schmitt EM, Fong TG, Inouye SK. A framework of social determinants of health for delirium tailored to older adults. J Am Geriatr Soc. 2021 Oct 25;. doi: 10.1111/jgs.17465. [Epub ahead of print]

Chan CK, Sieber FE, Blennow K,Inouye SK, Kahn G, Leoutsakos JS,Marcantonio ER, Neufeld KJ,Rosenberg PB, Wang NY, ZetterbergH, Lyketsos CG, Oh ES. Associationof Depressive Symptoms WithPostoperative

doi:10.1016/j.jagp.2021.02.001. Epub2021 Feb 4. PubMed PMID:33640268. [Epub ahead of print]

Pilot Studies:

Boukrina O, Kowalczyk M, Koush Y, Kong Y, Barrett AM. Brain Network Dysfunction in Poststroke Delirium and Spatial Neglect: An fMRI Study. Stroke. 2021 Oct 8;:STROKEAHA121035733. doi: 10.1161/STROKEAHA.121.035733. [Epub ahead of print]

Reznik ME, Margolis SA, Mahta A, Wendell LC, Thompson BB, Stretz C, Rudolph JL, Boukrina O, Barrett AM, Daiello LA, Jones RN, Furie KL. Impact of Delirium on Outcomes After Intracerebral Hemorrhage. Stroke. 2021 Oct 5;:STROKEAHA120034023. doi: 10.1161/STROKEAHA.120.034023. [Epub ahead of print]

NIDUS

Join NIDUS!

Thanks to all who have signed up to become a NIDUS member or to receive our announcements and newsletters.

NIDUS is always looking to reach new audiences – please forward this newsletter to a colleague or mentee!

For more information on NIDUS

Follow NIDUS on Twitter: @NIDUS_delirium

About NIDUS

NIDUS is a collaborative research network dedicated to spurring innovation and new advances in delirium research through development of new research and measurement resources, training opportunities, pilot funding and dissemination of information. It is funded through an award from the National Institutes of Health/National Institute on Aging (grant no. R33AG071744).

Find Out More
