Data Blitz Debuts at the AACAP Annual Meeting

Tamara Vanderwal¹ and Thomas Fernandez²

IN OCTOBER 2012, the American Academy of Child and Adolescent Psychiatry (AACAP) held its 59th annual meeting in San Francisco. A new forum titled “Previews from the Pipeline: A Data Blitz Featuring Early Career Investigators” debuted at the meeting to an audience of 174 attendees. This article introduces readers to the particularities of this new format and summarizes the work that was presented in an effort to continue the momentum and interest generated by the event.

The size of the AACAP meeting and the diverse mix of clinician and researcher attendees provides a rich environment in which to present new work in the field. AACAP has also invested significant effort in supporting and promoting the development of early career investigators. The data blitz was created in order to capitalize on these strengths by facilitating a meaningful interaction between early career investigators and the AACAP community. At previous annual meetings, venues for presenting new research included poster sessions or being part of a longer (usually 3-hour) session, neither of which were particularly well-suited for the presentation of new and developing datasets. “Previews from the Pipeline” was designed specifically to provide a place and a format for the presentation of projects that are not yet ready for publication or full presentation, and to provide a fast-paced, lively forum to showcase a number of different investigators in a single session.

In general, data blitzes are events during which a number of researchers present their work in succession via a rapid-fire presentation, usually lasting between five and twelve minutes and focusing on presenting one central idea. They have been featured and well-received at several other scientific meetings (e.g., American College of Neuropsychopharmacology). This succinct, fast-paced, and lively presentation format has gained popularity across multiple disciplines (technology, entertainment, business) in the form of TED talks (see www.TED.com/talks).

“Previews from the Pipeline” featured eight early career investigators who each presented for seven minutes followed by three minutes of questions and answers. A panel of five expert clinicians and researchers (Matthew State, Daniel Pine, Barbara Coffey, F. Xavier Castellanos, and James Leckman) provided the main source of questions and comments to the presenters. (The panel was affectionately termed “From the Balcony.”) Additionally, the audience submitted questions and comments via an online chat room, accessed by laptop or smartphone, and their questions were culled and filtered by the panel moderator. This online method of gathering feedback in real-time facilitated audience interaction and participation while avoiding the delays of microphone passing and verbose commentary that often occur when taking questions from a large audience. In addition, the online forum provided a written

record of audience questions and comments that could be viewed and replied to by each presenter following the data blitz.

For this inaugural AACAP data blitz, the eight presenters were selected either from the direct recommendation of senior researchers (email correspondence was sent to leading principal investigators in the field several months prior to the meeting), or from original research posters accepted by the AACAP Program Committee for presentation at the meeting. Primary considerations during the selection process were quality of data and relevance to the field. However, we also aimed to feature speakers representing different stages of career development (i.e., medical students, residents, fellows, junior faculty), different geographic locations, different research modalities, and a broad range of disorders. The following is a brief introduction of each presenter and their work, provided to convey the caliber and diversity of the research that was presented within this ninety-minute session.

The session opened with a talk by Michael Bloch, MD, MS, titled “N-Acetylcysteine for the Treatment of Pediatric Trichotillomania.” Michael attended college at the University of Pennsylvania, and completed medical school at Yale. He was then one of the first graduates of the Albert J. Solnit Integrated Training Program at Yale, where he is now an assistant professor. Dr. Bloch made the case that trichotillomania is an important disorder to treat during childhood because impairment often worsens during adulthood. He presented new data from a double-blind, placebo-controlled trial of N-acetylcysteine (NAC) in 39 subjects. Results indicate that clinical outcomes from treatment did not differ significantly from placebo, a finding that is in contrast to similar trials in adult trichotillomania. Dr. Bloch closed by showing that pediatric trichotillomania is also different from the adult disorder insofar as frequency of urges to pull hair and the frequency of focused pulling increases with age.

Erika Nurmi, MD, PhD then spoke about “Genetic Moderators of Treatment Response in Pediatric ADHD.” Dr. Nurmi received her MD/PhD from Vanderbilt University, and completed her psychiatry residency and child psychiatry fellowship training at UCLA, where she is currently an assistant professor. Erika presented her investigation of whether common variants in selected catecholamine neurotransmitter genes can predict clinical response to commonly prescribed ADHD medications. In fact, dopamine D1 and D2 receptor variants appear to influence response to guanfacine while dopamine D2 and alpha2-adrenergic receptor variants correlate with response to dexamethylphenidate. These findings point toward the potential for genetic investigations to improve clinical treatment choices and possibly guide the design of future therapeutics.

¹Yale Child Study Center, Yale University School of Medicine, New Haven, Connecticut.

²Yale Child Study Center and Department of Psychiatry, Yale University School of Medicine, New Haven, Connecticut.

Danella Hafeman, MD, PhD, presented a talk titled "Neural Correlates of Genetic Risk for Bipolar Disorder: an fMRI Study." Danella completed her training at Columbia University, followed by residency and fellowship training at the University of Pittsburgh where she is currently a PGY-4 resident. Dr. Hafeman's research tested her hypothesis that genetic risk for bipolar disorder in youth with early mood dysregulation is associated with abnormalities in emotion regulation circuitry measured by fMRI. In a sample of 36 affected youth compared to 20 healthy controls, her data shows that those with a positive family history of bipolar disorder have differential recruitment of brain circuitry during emotion regulation compared to those with a negative family history.

Heading back to the bench, Hanna Stevens, MD, PhD, presented next on "How Prenatal Stress and Growth Factor Signaling Interact to Increase Psychiatric Risk." Dr. Stevens received her MD/PhD from the University of Illinois, and completed her residency and fellowship via the Solnit Integrated Training Program at Yale, where she is now an assistant professor and associate training director for the integrated research and clinical training program. Her work uses knockout mouse models to probe the relationship between prenatal stress and fibroblast growth factor signaling on behaviors such as working memory, hyperactivity, and social approach. Dr. Stevens presented data showing two different gene-environment interactions that may have relevance for understanding the underlying biology of attention-deficit/hyperactivity disorder, autism, and bipolar disorder.

Adding to the prenatal line of inquiry, Argyris Stringaris, MD, PhD, was the fifth presenter, and his talk was titled "Same genes, different childhoods: causality and development in the Twin Pod study." Dr. Stringaris attended medical school at the University of Gottingen in Germany, and then received his PhD at the Institute of Psychiatry in London. His psychiatric training was completed at Maudsley Hospital in London, followed by a clinical research fellowship at the NIMH. He is currently a senior lecturer at King's College, London. Dr. Stringaris presented preliminary results looking at the relationship between fetal growth and intrauterine umbilical and middle cerebral artery blood flow measured in a twin sample. These results will eventually be correlated with longitudinal follow-up, including structural and functional MRI data of these subjects in early childhood.

In another longitudinal approach, Amanda Hutchison, MD, presented her work titled "Infant p50 Sensory Gating Predicts Attention and Anxiety Symptoms at 40 months." Dr. Hutchison received her MD from the University of Colorado, and is currently a PGY-3 resident in their Integrated Clinical and Research Training Track. She presented sensory gating electroencephalographic data collected from 50 subjects at approximately 70 days of age that predict attentional scores at age 40 months. Dr. Hutchison is interested in following this sample longitudinally, and exploring possible interventions to target the early sensory gating abnormalities.

Carl Fleisher, MD, presented his talk, titled "Hippocampal volume predicts social function in those at ultra-high risk for psychosis." Dr. Fleisher received his MD from Harvard, and is currently a PGY-5 resident at the UCLA Semel Institute for Neuroscience. He presented longitudinal structural MRI data from 39 subjects with early clinical symptoms which place them at ultra-high risk for psychosis. His data show that reduced hippocampal volume predicts impaired social functioning one year later, par-

ticularly in subjects who became psychotic. The putative link between structural abnormalities, impaired social functioning, and a later transition to psychosis introduces the question of whether social skills training or cognitive behavioral therapy might improve long-term outcomes for those at ultra-high risk for psychosis.

Finally, David Cochran, MD, PhD, presented on "Non-invasive Evaluation of Neurotransmitters in Autism Spectrum Disorders: A Proton Magnetic Resonance Spectroscopy Study." Dr. Cochran completed his PhD at MIT prior to earning his MD at Harvard. He then completed residency and fellowship training at the University of Massachusetts, where he is a new assistant professor. Dr. Cochran presented data looking at glutamate, glutamine, and GABA levels measured via MRS spectroscopy in the anterior cingulate. The interest in glutamate, GABA and autism spectrum disorders (ASDs) stems in part from links between fragile X syndrome, glutamate, and autism. The results of this study indicate that though subjects in the autism spectrum disorder (ASD) and control groups show no difference in glutamate levels, the ASD group demonstrates higher glutamine levels and a trend toward lower GABA levels. These preliminary results give rise to hypotheses about abnormalities in the pathways of glutamate processing in ASDs.

In summary, the AACAP "Previews From The Pipeline" Data Blitz was a curated, fast-paced approach to scientific presentation that enabled a select group of up-and-coming investigators in child and adolescent psychiatry to present their work at an international forum, to begin networking with one another, and to interact in a meaningful way with a panel of established-career investigators who rarely convene behind a single table. The blitz also enabled clinician and researcher members of the Academy to learn about new advances in the field in a high-yield format, timed to sustain audience attention and to facilitate a high level of interaction and participation.

Several key elements contributed to the success of this event. First, AACAP was extremely supportive of this new idea, allowing the event to be created and directed by early-career investigators from beginning to end. Second, the contribution of such an expert panel cannot be underestimated, and we are grateful to Drs. Matthew State, Daniel Pine, Barbara Coffey, F. Xavier Castellanos, and James Leckman for their investment and enthusiasm. Finally and most important, the caliber of the eight presenters was first class; their willingness to conform their presentation style to a strict and stereotyped structure was essential. The surfeit of talent and the quality and innovation of the work being performed by this next generation of psychiatric researchers came through very clearly in each of their brief talks. Each presentation was self-contained and impressive in its own right, while the cadre as a whole painted an exciting picture of new ideas and research that is being conducted in the field. We hope to continue this new format at the next annual meeting and hope that it gestures towards the many innovative ways that presentation and collaboration in science can unfold.

Address correspondence to:
Tamara Vanderwal

Yale Child Study Center
Yale University School of Medicine
New Haven, Connecticut. CT 06520

E-mail: tamara.vanderwal@yale.edu