

## OED-SIG Awards

Learn what our award winners will be presenting about at this year's convention.

### Graduate Student Research Award Winner

*To be presented at the OED-SIG meeting on Saturday, Nov. 17<sup>th</sup> from 3:30-5:00 pm in Wilson C, Mezzanine Level.*

#### Title: An Application of Machine Learning to Predict Patterns of Response to Eating Disorder Treatment

**Authors & Affiliations:** Hallie Espel-Huynh and Fengqing Zhang, *Drexel University*, J. Graham Thomas, *Warren Alpert Medical School at Brown University*, James F. Boswell, *University at Albany—State University of New York*, Heather Thompson-Brenner, *Boston University*, Adrienne S. Juarascio and Michael Lowe, *Drexel University*

In outpatient psychotherapy, use of empirically-derived algorithms to predict treatment outcome can improve treatment efficiency and reduce risk of nonresponse. However, existing algorithms have limited generalizability to intensive eating disorder (ED) treatment. No research has yet explored the feasibility of developing an empirically-derived, "machine learning" model to predict treatment response patterns among ED patients. Three distinct, latent patterns of treatment response from admission to discharge were previously identified in a residential ED patient sample (N = 343): Typical Response, Rapid Response, and Non-Response (Espel-Huynh et al., 2017). The present study sought to extend upon these prior findings by predicting which pattern a patient would follow, using only early treatment data (i.e., 1-2 weeks post-admission). A k-Nearest Neighbors machine learning analytic approach was applied to "train" the predictive algorithm, using data from a randomly selected subset of the full sample (n = 280). Predictive accuracy was evaluated based on performance on the held-out "test" subset (n = 63). The

algorithm correctly identified treatment response patterns for 83% of test cases (Overall Accuracy Rate 0.83, 95% CI [0.71, 0.91]), significantly better than chance prediction ( $p < .0001$ ). Findings support the feasibility and accuracy of machine learning methods for prediction of ED treatment response. In the future, data from a patient's active course of treatment could be entered into this algorithm; information on the likely response pattern would inform therapeutic treatment planning and alert providers of risk for nonresponse.

### Graduate Poster Award Winner

*To be presented at the ABCT Friday Night Welcome Party and SIG Expo on Friday, Nov. 16<sup>th</sup> from 6:30-8:30 pm in the Marriott Ballroom, 1, 2, & 3, Lobby Level.*

#### Title: Machine Learning to Predict Longitudinal Illness Course of Eating Disorders

**Authors & Affiliations:** Shirley B. Wang, *Harvard University*, Scott J. Crow and Carol B. Peterson, *University of Minnesota*, Ross D. Crosby, *Neuropsychiatric Research Institute*, W. Stewart Agras, *Stanford University*, Katherine Halmi, *Weill Cornell Medicine*, James E. Mitchell, *Neuropsychiatric Research Institute*, and Ann F. Haynos, *University of Minnesota*

The ability to predict the illness course of eating disorders (EDs) is limited. Few robust and consistent predictors of outcome have been identified and replicated across samples (Vall & Wade, 2015). Machine learning represents a novel analysis approach that allows for modeling of complex, inter-dependent relationships, which can enhance the ability to predict complicated behaviors, such as ED symptoms. The current study examined whether machine learning algorithms provided more accurate predictions of longitudinal ED symptom severity than traditional statistical methods. Participants were 277 individuals with anorexia nervosa, bulimia nervosa, or binge-eating disorder. At baseline, one-year, and two-year follow-up, participants completed

semi-structured interviews assessing ED symptoms and self-report measures of depressive symptoms, self-esteem, impulsivity, and additional disordered eating psychopathology. We applied two machine learning algorithms (lasso regression, decision trees), using internal cross-validation to protect against overfitting, to predict severity of ED symptoms at one-year and two-year follow-up. Results indicated that the machine learning algorithms were more accurate in predicting ED symptoms at one-year follow-up ( $r_s = .34 - .59$ ,  $p_s < .001$ ) than multivariate regressions ( $r = .27$ ,  $p = .05$ ). Similarly, machine learning algorithms produced more accurate predictions of ED symptoms at two-year follow-up ( $r_s = .31 - .38$ ,  $p_s < .03$ ) than multivariate regressions ( $r = .15$ ,  $p = .28$ ). In the machine learning models, items related to guilt/shame over eating, overvaluation and dissatisfaction with weight/shape, fear of weight gain, self-dislike, dietary restraint, and demographics (age, ethnicity, living situation) emerged as important predictors of ED symptoms. Results indicate that machine learning techniques can optimize prediction of clinically-important outcomes, such as ED symptom severity, beyond traditional statistical techniques.

## OED-Related Sessions

Below you will find information about OED-related sessions during this year's convention.

### Remaining OED-SIG Posters

*To be presented at the ABCT Welcoming Cocktail Party and SIG Expo on Friday, Nov. 16<sup>th</sup> from 6:30-8:30 pm in the Marriott Ballroom 1, 2, & 3.*

#### Anomalous Perceptual Experiences Prospectively Predict Eating Disorder Symptoms but Not Vice Versa

Brenna Williams, *University of Louisville*, Michelle H. Lim, *Swinburne University of Technology*, and Cheri A. Levinson, *University of Louisville*

### **Appetitive Traits and Binge Eating Disorder in Bariatric Surgery**

#### **Candidates**

Emily C. Stefano, Hana F. Zickgraf, and Andrea Rigby, *Penn State College of Medicine*

### **Barriers to Physical Activity Throughout Behavioral Weight Loss**

Christine C. Call, Savannah R. Roberts, Leah M. Schumacher, and Jocelyn E. Remmert, *Drexel University*, Stephanie G. Kerrigan, *Yale School of Medicine*, and Meghan L. Butryn, *Drexel University*

### **Difficulties With Impulse Control Predict Rate of Change in Intensive Eating Disorder Treatment**

Danielle E. MacDonald and Kathryn Trottier, *University of Toronto*

### **Emotion Dysregulation and Behavioral Activation/Inhibition on the Go/No-Go Task in Individuals who Binge Eat**

Ashley F. Jennings, *Fairleigh Dickinson University*, Lisa M. Anderson, Scott Crow, and Carol B. Peterson, *University of Minnesota*, Ilana Brodzki and Abigail R. Cooper, *Fairleigh Dickinson University*, and Carolyn Pearson Carter, *University of Minnesota*

### **Neurocognition in Children With Eating Disorders: Results From a Nationally Representative Sample**

Da Yeoun Moon, *San Diego State University*, Patrycja Klimek and Aaron J. Blashill, *San Diego State University/University of California, San Diego*

### **Prevalence of Eating Disorders Among 9-10 Year Old Children: Results From a U.S. Representative Sample**

Kaitlin N. Rozzell and Hanna Moon, *San Diego State University*, Patrycja Klimek, *San Diego State University/University of California, San Diego*, Tiffany A. Brown, *University of California, San Diego*, and Aaron J. Blashill, *San Diego State University/University of California, San Diego*

### **Shared Vulnerabilities Between Eating Disorder and Obsessive-Compulsive Disorder Symptoms**

Shruti Shankar Ram, Caroline Christian, and Cheri A. Levinson, *University of Louisville*

### **The Role of Hedonic Hunger in Behavioral Weight Loss**

Savannah R. Roberts, *Drexel University*, Cara F. Colao, *Villanova University*, and Meghan L. Butryn, *Drexel University*

### **The Trajectory of Sleep-Quality and Weight-Change in Family-Based Treatment for Adolescent Anorexia Nervosa**

Abigail R. Cooper and Kathryn M. Huryk, *Fairleigh Dickinson University*, Eleanor McGlinchey, *Fairleigh Dickinson University, Columbia University Medical Center*, Daniel Le Grange, *University of California, San Francisco*, Elizabeth Hughes and Susan M. Sawyer, *The University of Melbourne*, and Katharine L. Loeb, *Fairleigh Dickinson University*

## **Institutes**

**THURSDAY, NOV. 15<sup>th</sup>, 8:30 AM-5:00 PM**

**Location:** Hoover, Mezzanine Level  
**Title:** Radically Open-Dialectical Behavior Therapy (RO-DBT) for Disorders of Overcontrol (*Institute 3*)  
**Presenter(s):** Thomas Lynch

## **Conference Symposia, Clinical Roundtables, Workshops & Panel Discussions**

**FRIDAY, NOV. 16<sup>th</sup>, 8:30-10:00 AM**

**Title:** Do They "Like" Me or Just Want Me to #Follow Them? The Relevance of Social Media to Clinical Issues and Treatment (*Clinical Roundtable 1*)  
**Location:** Harding, Mezzanine Level  
**Moderator(s):** Amanda McGovern  
**Presenter(s):** Erin Engle, Rachel Ginsberg, Jeneane Solz, Caitlin Shepherd, Sarah Anolik Katz

**FRIDAY, NOV. 16<sup>th</sup>, 10:15-11:45 AM**

**Title:** Borrowing Wisdom from the Anxiety Field: How Lessons Learned in the Exposure-Based Treatment of Anxiety Disorders Can Advance the Eating Disorders Field (*Clinical Roundtable 3*)  
**Location:** Roosevelt 4, Exhibition Level  
**Moderator(s):** Jamal Essayli & Lisa Anderson  
**Presenter(s):** Richard Heimberg, Bunmi Olatunji, Elizabeth Hembree, Cheri Levinson, Stuart Murray

**FRIDAY, NOV. 16<sup>th</sup>, 10:15-11:45 AM**

**Title:** Novel Research Approaches to Self-Destructive Behaviors and Associated Psychopathology (*Symposium 16*)

**Location:** Thurgood Marshall North, Mezzanine Level

**Chair(s):** Kenneth Allen

**Discussant(s):** Michael Armev

**OED-relevant talk(s):**

- **Title:** Emotional Stop-Signal: Assessing Negative Urgency in Self-Destructive Behaviors;  
**Presenter:** Kenneth Allen

**FRIDAY, NOV. 16<sup>th</sup>, 10:15-11:45 AM**

**Title:** Recent Advances in OC Spectrum Disorders: A Transdiagnostic and Translational Perspective (*Symposium 19*)

**Location:** Roosevelt 5, Exhibition Level  
**Chair(s):** Berta Summers, Brittany Mathes

**Discussant(s):** Eric Storch

**OED-relevant talk(s):**

- **Title:** Dysfunctional Beliefs and Flexibility in Understanding Body Image Disturbance; **Presenter:** Lillian Reuman

**FRIDAY, NOV. 16<sup>th</sup>, 1:45-2:45 PM**

**Title:** Friend or Foe: Social Media's Relationship with Eating Disorders and its Impact on Research, Prevention, and Clinical Work (*Panel Discussion 7*)

**Location:** Harding, Mezzanine Level

**Moderator(s):** Laura Sproch

**Panelist(s):** Laura Sproch, Kimberly Anderson, Kate Clemmer

**FRIDAY, NOV. 16<sup>th</sup>, 3:30-5:00 PM**

**Title:** Family-Based Healthy Weight Coaching (*Mini Workshop 7*)

**Location:** Coolidge, Mezzanine Level

**Presenter(s):** Linda Craighead



**SATURDAY, NOV. 17<sup>th</sup>, 8:30-10:00 AM**

**Title:** Transdiagnostic Processes in Eating Disorders: How Shared Mechanisms Can Inform Treatment (*Symposium 56*)

**Location:** Wilson A, Mezzanine Level

**Chair(s):** Leigh Brosolf

**Discussant(s):** Drew Anderson

**OED-relevant talk(s):**

- **Title:** Emotional Impulsivity and Maladaptive Perfectionism of Higher Bulimic Symptoms; **Presenter:** Leigh Brosolf
- **Title:** Rumination and Lack of Mindful Awareness Prospectively Predict ED Symptoms; **Presenter:** Irina Vanzhula
- **Title:** The Relative Importance of Interoceptive Awareness Facets in Binge Eating; **Presenter:** Lisa Anderson
- **Title:** A Predictor of Treatment Response for Individuals With Anorexia Nervosa; **Presenter:** Erin Reilly

**SATURDAY, NOV. 17<sup>th</sup>, 8:30-10:00 AM**

**Title:** Hello World: Applying Machine Learning Data Analytic Approaches to Clinical Psychology Research (*Symposium 57*)

**Location:** Wilson B, Mezzanine Level

**Chair(s):** Megan Hughes-Feltenberger, Madeline Marks

**Discussant(s):** David Feltenberger

**OED-relevant talk(s):**

- **Title:** Machine Learning to Predict Longitudinal Illness Course of Eating Disorders; **Presenter:** Shirley Wang
- **Title:** Adaptive Interventions for Dietary Lapses and Emotional and Binge Eating Episodes; **Presenter:** Adrienne Juarascio

**SATURDAY, NOV. 17<sup>th</sup>, 9:00-10:00 AM**

**Title:** Seeing the Trees for the Forest: Personalized and Precision Approaches to Discrete Behavior Change (*Symposium 67*)

**Location:** Delaware B, Lobby Level

**Chair(s):** Aaron Fisher, Peter Soyster

**Discussant(s):** Aaron Fisher

**OED-relevant talk(s):**

- **Title:** Personalized Networks of Symptoms at Mealtime in Individuals With ED; **Presenter:** Cheri Levinson

**SATURDAY, NOV. 17<sup>th</sup>, 10:15-11:45 AM**

**Title:** Longitudinal Investigations of the Complex Relationships Between Body Dissatisfaction, Coping Behaviors, and Health Outcomes (*Symposium 81*)

**Location:** Delaware A, Lobby Level

**Chair(s):** Lauren Stutts

**Discussant(s):** c. Alix Timko

**OED-relevant talk(s):**

- **Title:** Body Dissatisfaction as a Predictor of Health and Wellness in Adult Women; **Presenter:** Lisa Kilpela
- **Title:** Self-Compassion on Weight and Shape Concerns and Eating Pathology; **Presenter:** Kerstin Blomquist
- **Title:** Yoga, ED Symptoms, Body Dissatisfaction/Appreciation of University Students; **Presenter:** Rachel Kramer

**SATURDAY, NOV. 17<sup>th</sup>, 10:15-11:45 AM**

**Title:** The Hierarchical Taxonomy of Psychopathology: An Emerging Dimensional Approach to Mental Disorder Research and Treatment (*Symposium 76*)

**Location:** Thurgood Marshall West, Mezzanine Level

**Chair(s):** Christopher Conway

**Discussant(s):** Jennifer Tackett

**OED-relevant talk(s):**

- **Title:** Empirical Methods to Delineate Diagnostic Dimensions and Inform Care; **Presenter:** Kelsie Forbush

**SATURDAY, NOV. 17<sup>th</sup>, 10:15-11:45 AM**

**Title:** Cognitions, Behaviors, and Emotions Across the Romantic Relationship Life Span: Assessing Relational Conflict Competencies Using Novel Methodology (*Symposium 77*)

**Location:** Maryland A, Lobby Level

**Chair(s):** Binguang Wang, Judith Biesen

**Discussant(s):** Christina Balderrama-Durbin

**OED-relevant talk(s):**

- **Title:** Symptom Accommodation and Emotional Coregulation in Couples With BED; **Presenter:** Danielle Weber

**SATURDAY, NOV. 17<sup>th</sup>, 10:15-11:45 AM**

**Title:** Examining the Role of Anxiety in Maladaptive Health Behaviors

**Location:** Lincoln 4, Exhibition Level

**Chair(s):** Andrew Rogers, Arielle Horenstein

**Discussant(s):** Jasper Smits

**OED-relevant talk(s):**

- **Title:** Relationship Between Body Mass Index and Motivation to Avoid Exercise; **Presenter:** Sima Kaplan

**SATURDAY, NOV. 17<sup>th</sup>, 1:45-3:15 PM**

**Title:** Conceptualization of Sensory Over-Responsivity: Implications for Classification of Psychopathology (*Symposium 99*)

**Location:** Washington 5, Exhibition Level

**Chair(s):** Martha Falkenstein, David Haaga

**Discussant(s):** Eric Storch

**OED-relevant talk(s):**

- **Title:** Sensory Sensitivity and Picky Eating: Fruit/Vegetable Variety and Daily Intake; **Presenter:** Hana Zickgraf

**SATURDAY, NOV. 17<sup>th</sup>, 3:30-5:00 PM**

**Title:** Adopting vs. Adapting DBT Across Cultures and Diagnoses (*Panel Discussion 30*)

**Location:** Delaware A, Lobby Level

**Moderator(s):** Andre Ivanoff

**Panelist(s):** Tony Dubose, Ahmed Abdelkarim, Helene Sher, A. Meltem Ustundag-Budak, Suhadee Henriquez

**SATURDAY, NOV. 17<sup>th</sup>, 3:30-5:00 PM**

**Title:** If You Build It, They Will Come... But How Do We Get Them to Stay? The Role of Support in e-Health Interventions (*Symposium 116*)

**Location:** Lincoln 2, Exhibition Level

**Chair(s):** Carmen McLean

**Discussant(s):** Michelle Newman

**OED-relevant talk(s):**

- **Title:** Optimize Level of Supportive Accountability in Weight Loss Intervention; **Presenter:** Evan Forman

**SUNDAY, NOV. 18<sup>th</sup>, 8:30-10:00 AM**

**Title:** Novel Insights on Eating Disorder Treatment and Etiology from Network and Complexity Science (*Symposium 131*)

**Location:** Delaware B, Lobby Level

**Chair(s):** Shirley Wang, Payton Jones

**Discussant(s):** Cheri Levinson

**OED-relevant talk(s):**

- **Title:** Core Psychopathology of Patients With Binge-Eating Disorder: Network Analysis; **Presenter:** Shirley Wang
- **Title:** Anorexia Core Symptoms Predict Poor Prognosis: A Network Analysis in a RCT; **Presenter:** Payton Jones
- **Title:** Bridging Eating Disorder Symptoms and Anxiety Symptoms in Patients With ED; **Presenter:** Lauren Forrest
- **Title:** Network Model: Symptoms in Two Eating Disorder Measures; **Presenter:** Leigh Brosos
- **Title:** Using Social Network Analysis to Understand Peer Influences on Eating Pathology; **Presenter:** Jean Forney

**SUNDAY, NOV. 18<sup>th</sup>, 8:30-10:00 AM**

**Title:** Bridging the Gap Between Observed and Real-World and in-lab Self-Report: Applications of Technology to Understanding Psychosis and Related Psychopathology Behavior

**Location:** Thurgood Marshall East, Mezzanine Level

**Chair(s):** Charlie Davidson

**Discussant(s):** William Spaulding

**OED-relevant talk(s):**

- **Title:** Use of a Mobile App to Assess Daily Eating Behaviors; **Presenter:** Linda Craighead

**SUNDAY, NOV. 18<sup>th</sup>, 10:15-11:45 AM**

**Title:** The Transdiagnostic Role of Anxiety-related Factors in Treatment Outcomes Across Weight-related Disorders (*Symposium 143*)

**Location:** Coolidge, Mezzanine Level

**Chair(s):** Diana Rancourt, Nicholas Farrell

**Discussant(s):** Carolyn Becker

**OED-relevant talk(s):**

- **Title:** Severity and Change in ED Symptoms: CBT-Based Residential Treatment Program; **Presenter:** Nicholas Farrell
- **Title:** Food Anxiety During Exposure Therapy in Patients With Eating Disorder; **Presenter:** Cheri Levinson
- **Title:** Family Accommodation and CBT Treatment Outcomes for Eating Disorders; **Presenter:** Lisa Anderson
- **Title:** Physical and Locus of Control Among Adolescents for Binge Eating; **Presenter:** Rebecca Kamody
- **Title:** Psychiatric Symptom Contributors to Weight Loss After Bariatric Surgery; **Presenter:** Christina Verzijl

**OED-Related Poster Sessions**

**POSTER SESSION 2-** FRIDAY, NOV. 16<sup>th</sup>, 9:45-10:45 AM; Exhibit Hall B South

**POSTER SESSION 5-** FRIDAY, NOV. 16<sup>th</sup>, 1:30-2:30 PM; Exhibit Hall B South

**POSTER SESSION 8 –** SATURDAY, NOV. 17<sup>th</sup>, 8:30-9:30 AM; Exhibit Hall B South

**POSTER SESSION 9–** SATURDAY, NOV. 17<sup>th</sup>, 9:45-10:45 AM; Exhibit Hall B South

**POSTER SESSION 12 –** SATURDAY, NOV. 17<sup>th</sup>, 1:30-2:30 PM; Exhibit Hall B South

**POSTER SESSION 14 –** SATURDAY, NOV. 17<sup>th</sup>, 4:00-5:00 PM; Exhibit Hall B South