

# 2018 Summary of Advances Discussion

IACC Full Committee Meeting  
January 16, 2019



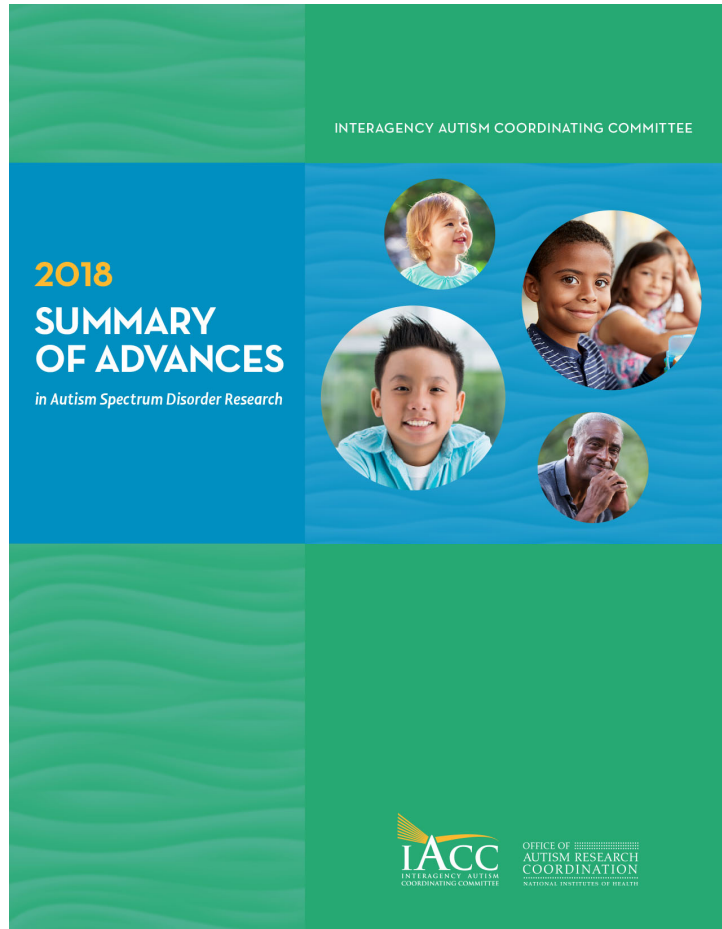
**Susan A. Daniels, Ph.D.**

Director, Office of Autism Research Coordination  
Executive Secretary, IACC  
National Institute of Mental Health

**Joshua A. Gordon, M.D., Ph.D.**

Director, National Institute of Mental Health  
Chair, IACC

# Summary of Advances



- Annual report required by the Autism CARES Act
- Lay-friendly summaries of the 20 most significant advances in ASD biomedical and services research, as selected by the IACC
- Typically includes articles addressing all 7 topic areas of the IACC Strategic Plan

# Summary of Advances Process



- ✓ Monthly emails to solicit article nominations from IACC members
- ✓ Advances compiled quarterly and discussed at IACC meetings
- ❑ **At January IACC meeting, discussion of top articles among those nominated**
- ❑ IACC members vote on top 20 articles to be included in 2018  
Summary of Advances – **ballots due February 1, 2019**
- ❑ Tie-breaker vote (if necessary)

# Summary of Advances Process



- ❑ Selected articles are summarized
- ❑ Nominated articles not selected are listed in the appendix
- ❑ Draft publication is prepared and sent out to committee for very brief review
- ❑ Final publication is prepared for release
- ❑ Target for release – April 2019 IACC meeting

# 2018 IACC Summary of Advances Nominations Statistics



- 10 IACC members submitted a total of 43 nominations:
  - Question 1 (Diagnosis & Screening): 6
  - Question 2 (Biology): 8
  - Question 3 (Risk Factors): 14
  - Question 4 (Treatments & Interventions): 3
  - Question 5 (Services): 5
  - Question 6 (Lifespan Issues): 3
  - Question 7 (Infrastructure & Surveillance): 4

# 2018 Summary of Advances Nominations October – December 2018



**Joshua A. Gordon, M.D., Ph.D.**  
Director, National Institute of Mental Health  
Chair, IACC

# Question 1: Screening and Diagnosis



*Journal of the American Academy of*  
**CHILD & ADOLESCENT**  
**PSYCHIATRY**

Nov 2018

## **Diagnosis of Autism Spectrum Disorder After Age 5 in Children Evaluated Longitudinally Since Infancy**

Ozonoff S, Young GS, Brian J, Charman T, Shephard E, Solish A, Zwaigenbaum L.

**The Journal of Child**  
**Psychology and Psychiatry**

Oct 2018

## **A longitudinal study of parent-reported sensory responsiveness in toddlers at-risk for autism.**

Wolff JJ, Dimian AF, Botteron KN, Dager SR, Elison JT, Estes AM, Hazlett HC, Schultz RT, Zwaigenbaum L, Piven J; IBIS Network.

# Question 2: Underlying Biology



## STEM CELL REPORTS

Nov 2018

### **Complete Disruption of Autism-Susceptibility Genes by Gene Editing Predominantly Reduces Functional Connectivity of Isogenic Human Neurons.**

Deneault E, White SH, Rodrigues DC, Ross PJ, Faheem M, Zaslavsky K, Wang Z, Alexandrova R, Pellecchia G, Wei W, Piekna A, Kaur G, Howe JL, Kwan V, Thiruvahindrapuram B, Walker S, Lionel AC, Pasceri P, Merico D, Yuen RKC, Singh KK, Ellis J, Scherer SW.



Aug 2018

### **Fragile X mental retardation 1 gene enhances the translation of large autism-related proteins.**

Greenblatt EJ, Spradling AC.



# Question 3: Risk Factors



Jun 2018

## **Case-control meta-analysis of blood DNA methylation and autism spectrum disorder.**

Andrews SV, Sheppard B, Windham GC, Schieve LA, Schendel DE, Croen LA, Chopra P, Alisch RS, Newschaffer CJ, Warren ST, Feinberg AP, Fallin MD, Ladd-Acosta C.



Dec 2018

## **Transcriptome-wide isoform-level dysregulation in ASD, schizophrenia, and bipolar disorder.**

Gandal MJ, Zhang P, Hadjimichael E, Walker RL, Chen C, Liu S, Won H, van Bakel H, Varghese M, Wang Y, Shieh AW, Haney J, Parhami S, Belmont J, Kim M, Moran Losada P, Khan Z, Mleczko J, Xia Y, Dai R, Wang D, Yang YT, Xu M, Fish K, Hof PR, Warrell J, Fitzgerald D, White K, Jaffe AE; PsychENCODE Consortium, Peters MA, Gerstein M, Liu C, Iakoucheva LM, Pinto D, Geschwind DH.

# Question 3: Risk Factors



## JAMA Psychiatry

Dec 2018

### **Association of Autism Spectrum Disorder With Prenatal Exposure to Medication Affecting Neurotransmitter Systems.**

Janecka M, Kodesh A, Levine SZ, Lusskin SI, Viktorin A, Rahman R, Buxbaum JD, Schlessinger A, Sandin S, Reichenberg A.

AUTISM  
RESEARCH  
January, 2017 | Volume 10 | Number 1

Jan 2018

### **Autism spectrum disorder and birth spacing: Findings from the study to explore early development (SEED).**

Schieve LA, Tian LH, Drews-Botsch C, Windham GC, Newschaffer C, Daniels JL, Lee LC, Croen LA, Fallin MD.

# Question 4: Treatments and Interventions



*Journal of Autism  
and Developmental Disorders*

Dec 2018

**Are Children Severely Affected by Autism Spectrum Disorder  
Underrepresented in Treatment Studies? An Analysis of the Literature.**

Stedman A, Taylor B, Erard M, Peura C, Siegel M.

# Question 5: Services



Autism in  
Adulthood

Apr 2018

## **Healthcare Service Utilization and Cost Among Adults with Autism Spectrum Disorders in a U.S. Integrated Healthcare System.**

Zerbo O, Qian Y, Ray T, Sidney S, Rich S, Massolo M, Croen LA.

# Question 6: Lifespan Issues



*(There were no nominations covering Question 6 topics from October – December 2018)*

# Question 7: Infrastructure and Surveillance



**MMWR**  
Surveillance Summaries

Apr 2018

## **Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years - Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2014.**

Baio J, Wiggins L, Christensen DL, Maenner MJ, Daniels J, Warren Z, Kurzius-Spencer M, Zahorodny W, Robinson Rosenberg C, White T, Durkin MS, Imm P, Nikolaou L, Yeargin-Allsopp M, Lee LC, Harrington R, Lopez M, Fitzgerald RT, Hewitt A, Pettygrove S, Constantino JN, Vehorn A, Shenouda J, Hall-Lande J, Van Naarden Braun K, Dowling NF.

**PEDIATRICS**  
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Dec 2018

## **The Prevalence of Parent-Reported Autism Spectrum Disorder Among US Children.**

Kogan MD, Vladutiu CJ, Schieve LA, Ghandour RM, Blumberg SJ, Zablotsky B, Perrin JM, Shattuck P, Kuhlthau KA, Harwood RL, Lu MC.

# Question 7: Infrastructure and Surveillance



The Journal of Child  
Psychology and Psychiatry

Oct 2018

**Child maltreatment in autism spectrum disorder and intellectual disability: results from a population-based sample.**

McDonnell CG, Boan AD, Bradley CC, Seay KD, Charles JM, Carpenter LA.

**JAMA** The Journal of the  
American Medical Association

Nov 2018

**Cumulative Incidence of Autism Into Adulthood for Birth Cohorts in Denmark, 1980-2012.**

Schendel DE, Thorsteinsson E.