

The Honorable Robert J. Bryan

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UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF WASHINGTON  
AT TACOMA

UGOCHUKWU GOODLUCK  
NWAUZOR, FERNANDO AGUIRRE-  
URBINA, individually and on behalf of all  
those similarly situated,

Plaintiffs,

v.

THE GEO GROUP, INC., a Florida  
corporation,

Defendant.

No. 3:17-cv-05769-RJB

DECLARATION OF JAMAL N.  
WHITEHEAD IN SUPPORT OF  
PLAINTIFFS' OPPOSITION TO  
DEFENDANT'S MOTIONS IN  
LIMINE

I, JAMAL N. WHITEHEAD, declare as follows:

1. I am over the age of eighteen, competent to testify in this matter, and do so based on personal knowledge.

2. Attached as Exhibit 1 is a true and correct copy of Plaintiffs' expert Jeffrey A. Munson, Ph.D.'s amended report dated February 6, 2020.

3. Attached as Exhibit 2 is a true and correct copy of a letter from my law partner Adam J. Berger to Defendant's counsel dated February 24, 2020, regarding the production of Dr. Munson's amended report and GEO's late-production of certain financial data.

1 I declare under penalty of perjury under the laws of the United States that the  
2 foregoing is true and correct.

3 DATED at Seattle, Washington this 23rd day of March, 2020.  
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5 s/ Jamal N. Whitehead  
6 JAMAL N. WHITEHEAD  
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# **EXHIBIT 1**

Jeff Munson  
University of Washington  
Box 357920  
Seattle, Washington 98195

February 6, 2020

Jamal Whitehead  
Schroeter Goldmark & Bender  
810 Third Avenue, Suite 500  
Seattle, WA 98104

*Re:* Supplemental Expert Report  
*Nawauzor et al. v. The GEO Group, Inc.*, No. 17-cv-5769-RJB (W.D. Wash.)

Dear Mr. Whitehead:

I have been retained by your firm to assess the economic damages sustained by detained persons participating in the “Voluntary Wage Program” (VWP) at the Northwest Detention Center. Specifically, you asked me to assume that the Washington State minimum wage applied to VWP participants and to calculate back wages owed for work performed at subminimum wage rates from September 26, 2014, through April 10, 2020. This report contains the results of my analysis and explains my methodology as well as the sources of data upon which I relied. This report amends my report of September 10, 2019 based on new information provided to me after that date that has allowed a more precise calculation of individual and aggregate damages.

Attached to this report are my *curriculum vitae* (Appendix A), a list of cases in which I have testified over the past four years (Appendix B), a statement of my compensation (Appendix C), and an Excel file containing the results of my analysis (Appendix D).

## I. BACKGROUND

The GEO Group, Inc. (“GEO”) owns and operates the Northwest Detention Center (NWDC), and uses civil immigration detainees participating in the VWP to perform

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many non-security functions in the facility.<sup>1</sup> The jobs performed by VWP participants include work that is broadly characterized as janitorial and maintenance, kitchen, barber, and laundry.<sup>2</sup> GEO pays these detainees \$1.00 a day for their labor regardless of how many hours they actually work.<sup>3</sup> GEO submits monthly bills to U.S. Immigration and Customs Enforcement for reimbursement of wages paid to VWP participants.<sup>4</sup> GEO uses the Keefe banking system to manage detainee trust accounts. The Keefe banking records reflect GEO's daily payments to detainees for their work in the VWP.<sup>5</sup>

Plaintiffs argue that an employment relationship exists between GEO and the detained persons taking part in the VWP, and that GEO's practice of paying subminimum wages to these workers violates Washington's Minimum Wage Act ("MWA"), RCW 49.46 et seq.<sup>6</sup>

## II. MATERIALS CONSIDERED

In the course of my analysis, I reviewed the following documents:

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| 1. First Amended Complaint                         | 10. GEO-State 047378 (May 2017<br>GEO Bill to ICE)   |
| 2. NWDC Detainee Handbook                          |  |
| 3. R. Kimble Deposition Transcript                 | 11. GEO-State 045103 (Jun. 2017<br>GEO Bill to ICE)  |
| 4. R. Kimble Deposition, Exhibit 20                |  |
| 5. R. Kimble Deposition, Exhibit 22                | 12. GEO-State 045250 (Jul. 2017<br>GEO Bill to ICE)  |
| 6. GEO-State 045059 (Jan. 2017<br>GEO Bill to ICE) | 13. GEO-State 045052 (Aug. 2017<br>GEO Bill to ICE)  |
| 7. GEO-State 046463 (Feb. 2017<br>GEO Bill to ICE) | 14. GEO-State 045138 (Sept. 2017<br>GEO Bill to ICE) |
| 8. GEO-State 046465 (Mar. 2017<br>GEO Bill to ICE) | 15. GEO-State 230438 (Oct. 2017<br>GEO Bill to ICE)  |
| 9. GEO-State 045232 (Apr. 2017<br>GEO Bill to ICE) |  |

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<sup>1</sup> Compl., ¶¶ 4.2-4.7.

<sup>2</sup> Kimble Dep., Ex. 20.

<sup>3</sup> NWDC Handbook at GEO-Nwauzor 001003.

<sup>4</sup> Kimble Dep. at 164-170; Ex. 22.

<sup>5</sup> GEO 30(b)(6) dep. at 98-99, 112-114; Heye Dep. at 114-118.

<sup>6</sup> Compl., ¶¶ 4.2-4.12, 6.1-6.4.

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| 16. GEO-State 046622-21 (Nov. 2017<br>GEO Bill to ICE) | 19. GEO-State 047718 (Feb. 2018<br>GEO Bill to ICE)                |
| 17. GEO-State 230459 (Dec. 2017<br>GEO Bill to ICE)    | 20. Keefe Banking Records, <i>see</i><br>Appendix D (by Month tab) |
| 18. GEO-State 046536 (Jan. 2018<br>GEO Bill to ICE)    |  |

To the extent additional relevant information becomes available, I reserve the opportunity to revise my analysis and the opinions stated in this report.

### III. ASSUMPTIONS APPLIED

You asked me to assume the Washington State minimum wage applied to VWP participants, and to calculate aggregate damages for the certified class from September 26, 2014, to April 10, 2020. During this time, the following State minimum wage rates applied:<sup>7</sup>

- In 2014, the State minimum wage was \$9.32 per hour.
- In 2015, the State minimum wage was \$9.47 per hour.
- In 2016, the State minimum wage was \$9.47 per hour.
- In 2017, the State minimum wage was \$11.00 per hour.
- In 2018, the State minimum wage was \$11.50 per hour.
- In 2019, the State minimum wage was \$12.00 per hour.
- In 2020, the State minimum wage is currently \$13.50 per hour.

Other assumptions are discussed below (*see infra*, § IV) in the course of explaining my analysis.

### IV. ECONOMIC ANALYSIS

I have calculated the aggregate economic damages under the Washington state minimum wage for the VWP participants from September 26, 2014, through April 10, 2020.

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<sup>7</sup> History of Washington Minimum Wage, Washington State Department of Labor & Industries, available at <https://www.lni.wa.gov/WorkplaceRights/Wages/Minimum/History/default.asp> (last visited, Sept. 4, 2019).

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In order to calculate this amount, data and information (collectively, “data”) were imported into the R programming environment. The R language is a freely available language for statistical computing and graphics which provides a wide variety of statistical and graphical techniques.

Most of the Keefe banking data Excel files contained more than one worksheet. To avoid duplication, I extracted the daily payments to VWP participants as reflected in the worksheets labeled “ICE”, “Sheet1”, or “GEO” in the Keefe banking records. I used only information dated September 26, 2014, or later. However, for the months October 2014, March 2015, and September 2015, comparison with the GEO Bills indicated that the Keefe banking data were either overstated (October 2014) or incomplete (March and September 2015). Therefore, for those months I extracted and used monthly bill amounts from GEO to ICE from the billing records identified above.

The Keefe banking data include narrative location data for the work performed by detainees. I was asked to group the data into 13 different locations based on the terms included in the location data and to assume the following regarding the hours worked by detainees for each shift in these locations:

<b>LOCATION</b>	<b>HOURS</b>
BARBERSHOP	4
CLEANING_BARBERSHOP	0.5
CLEANING_KITCHEN	3
GREY MILE	1.5
INTAKE	1
JANITORIAL_MAINT	0.5
KITCHEN	4.5
KITCHEN_BRK	4.5
KITCHEN_DIN	5

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LOCATION	HOURS
KITCHEN_LCH	6
LAUNDRY	4
LAUNDRY-FEMALE/POD	1
MEDICAL	0.5

A complete list of the locations included in each Location group is contained in the corresponding tabs of Appendix D attached hereto.

Based on these assumptions and the Keefe banking data that reflect worker pay, I calculated damages owed to VWP participants. I understand that individuals were paid \$1 per day while they participated in the voluntary work program. Thus, the Keefe banking figures can be considered the number of shifts worked by individuals in the Voluntary Work Program. I was asked to assume that these individuals were entitled to receive the Washington State minimum wage for the time that they worked in the VWP.

To calculate the damages, I multiplied each daily worker pay entry by the appropriate Washington State minimum wage and the assumed shift hours for the work location. This value would be the amount of pay VWP participants would be entitled to receive if the minimum wage is applicable. I then subtracted the amount of worker pay from the banking data to obtain the daily wages owed.

For the three months for which billing data were used, I multiplied the amount of the monthly invoice (which can be considered the total number of shifts worked by detainee workers in that month) by the applicable minimum wage for that time period and by the average shift length calculated for all other months on the basis of the Keefe banking data. That average shift length was 1.4569 hours, derived from 718,004 records and 1,046,066.5 shift hours applying the location/shift length assumptions described above.

Data were available through September 2019. For later dates, I applied the average daily damages calculated for September 2019 to each individual day from October 1, 2019 through April 10, 2020. This daily average was \$6,661.20.



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The grand total of damages across the period from September 26, 2014 through April 10, 2020 is **\$12,428,341.41**, including \$10,674,987.46 in damages calculated from the Keefe banking data, \$467,742.34 calculated on the basis of the billing data, and \$1,285,611.60 extrapolated for October 1, 2019 through April 10, 2020. The “by Month” tab of Appendix D (attached) contains the results of my calculations. The “by Individual” tab shows the results of the Keefe banking data calculations by individual detainee. The “locations” tab shows the number of Keefe banking record entries by location group used in this analysis.

I reserve the right to amend or modify this report to the extent additional documents or information come to my attention.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey A. Munson". The signature is written in a cursive, flowing style.

Jeffrey A. Munson, Ph.D.

**APPENDIX A**  
***CURRICULUM VITAE***

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## Jeffrey A Munson

Department of Psychiatry and Behavioral Sciences

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### EDUCATION

B. A. *Stanford University, 1988*  
Psychology, with Departmental Honors

Ph.D. *University of Washington, 1998*  
Major area: Child Clinical Psychology

Dissertation: Structure and variability in the developmental trajectory of children's externalizing problems: Impact of child sex, infant attachment, and maternal depression

### PROFESSIONAL POSITIONS

2013 – present Research Associate Professor of Psychiatry and Behavioral Sciences, University of Washington

2007-2013 Research Assistant Professor of Psychiatry and Behavioral Sciences, University of Washington

1998-2007 Research Scientist, Center on Human Development and Disability, University of Washington

Data analysis responsibilities (1998 - present)

- Oversee data analysis and data management of several large multi-project, collaborative studies.
- Extensive use of SPSS, HLM, EQS, R software programs for various data analytic tasks such as general linear models, hierarchical linear models, latent variable models, and data visualization.
- Extensive use of Microsoft SQL Server 2005, 2008 and Microsoft Access to manage the entry and organization of experimental data

- Use of the Python, Visual Basic, Visual C#, ASP.NET programming languages to create custom solutions for various data manipulation and management tasks.

#### Clinical and assessment responsibilities (1998 - 2001)

- Clinical assessments of children with autism and developmental disabilities, including standardized cognitive testing and play-based observational diagnostic assessments.
- Provide clinical feedback and recommendations to parents.

### PROFESSIONAL ACTIVITIES

Ad hoc reviewer: Archives of Clinical Neuropsychology  
Autism: International Journal of Research and Practice  
Development and Psychopathology  
Developmental Psychology  
Journal of Autism and Development Disorders  
Autism Research  
New England Journal of Medicine

Grant Review Panels: Small Business: Biobehavioral and Behavioral Processes Across the Lifespan (NIH ZRG1 BBBP-T (10) B) (2009, 2010)

### PUBLICATIONS

#### Journal Articles

1. Gehring, T. M., Wentzel, K. R.; Feldman, S. S., Munson, J. (1990). Conflict in families of adolescents: The impact on cohesion and power structures. *Journal of Family Psychology*, 3, 290-309.
2. Feldman, S. S., Wentzel, K. R., Weinberger, D. A., Munson, J. A. (1990). Marital satisfaction of parents of preadolescent boys and its relationship to family and child functioning. *Journal of Family Psychology*, 4, 213-234.
3. Marachi R., McMahon R.J., Spieker S.J., & Munson J.A. (1999). Longitudinal assessment of the low-end specificity of maternal reports of depressive symptoms. *Behavior Research and Therapy*, 37,483-501.
4. Munson J.A., McMahon R.J., & Spieker S.J. (2001) Structure and variability in the developmental trajectory of children's externalizing problems: impact of infant attachment, maternal depressive symptomatology, and child sex. *Development and Psychopathology*, 13, 277-296.
5. Dager, S.R., Friedman, S.D., Shaw, D., Echelard, D., Artru, A., Strauss, W.L., Sparks, B., Carver, L., Richards, T.L., Munson, J., & Dawson, G. (2000). Neuroimaging of the Autistic Child's Brain: Brain Structure, Chemistry and Function. *J Intellectual Disability Research* 44:253.
6. Osterling, J., Dawson, G., & Munson, J. (2002). Early recognition of one year old infants with autism spectrum disorder versus mental retardation: A study of first birthday party home videotapes. *Development and Psychopathology*, 14: 239-51.

7. Dawson, G., Munson, J., Estes, A., Osterling, J., McPartland, J., Toth, K., et al. (2002). Neurocognitive function and joint attention ability in young children with autism spectrum disorder. *Child Development*, 73, 345-358.
8. Sparks, B.F., Friedman, S.D., Shaw, D.W., Aylward, E.H., Echelard, D., Artru, A.A., Maravilla, K.R., Giedd, J.N., Munson, J., Dawson, G., & Dager, S.R. (2002). Brain Structural Abnormalities in Young Children with Autism Spectrum Disorder. *Neurology*, 59: 184-192.
9. Unis, A., Munson, J., Rogers, S.J., Goldson, E., Osterling, J., Gabriels, R., Abbott, R., & Dawson, G. (2002). A randomized, double-blind, placebo-controlled trial of porcine versus synthetic secretin for reducing symptoms of autism. *Journal of the Academy of Child and Adolescent Psychiatry*, 41: 1315-21.
10. Yu, C., Dawson, G., Munson, J., D'Souza, I., Osterling, J., Estes, A., et al. (2002). Presence of Large Deletions in Autism Kindred. *American Journal of Human Genetics*, 71: 100-115.
11. Sultana, R., Yu, C.-E., Yu, J., Munson, J., Chen, D., Hua, W., Estes, A., Cortes, F., de la Barra, F., Yu, D., Haider, S. T., Trask, B. J., Green, E. D., Raskind, W. H., Disteche, C. M., Wijsman, E., Dawson, G., et al. (2002). Identification of a Novel Gene on Chromosome 7q11.2 Interrupted by a Translocation Breakpoint in a Pair of Autistic Twins. *Genomics*: 80, 129-134.
12. Carver, L., Dawson, G., Panagiotides, H., Meltzoff, A. N., McPartland, J., Gray, J., & Munson, J. (2003). Age-related differences in neural correlates of face recognition during the toddler and preschool years. *Developmental Psychobiology*, 42:148-59.
13. Dawson, G., Toth, K., Abbott, R., Osterling, J., Munson, J., Estes, A., Liaw, J. (2004). Early Social Attention Impairments in Autism: Social Orienting, Joint Attention, and Attention to Distress. *Developmental Psychology*, 40, 271-283.
14. Ozonoff, S., Cook, I. Coon, H., Dawson, G., Joseph, R. M., Klin, A., McMahon, W. M., Minshew, N., Munson, J. A., Pennington, B. F., Rogers, S. J., Spence, M. A., Tager-Flusberg, H., Volkmar, F. R., Wrathall, D. (2004). Performance on Cambridge Neuropsychological Test Automated Battery Subtests Sensitive to Frontal Lobe Function in People with Autistic Disorder: Evidence from the Collaborative Programs of Excellence in Autism Network. *Journal of Autism & Developmental Disorders*, 34, 139-150.
15. Sung, J.U., Dawson, G., Munson, J., Estes, A., Schellenberg, J., & Wijsman, E.M. (2005). Genetic Investigation of Quantitative Traits Related to Autism: Use of Multivariate Polygenic Models with Ascertainment Adjustment. *American Journal of Human Genetics*, 76, 68-81.
16. Werner, E., Dawson, G., Munson, J., & Osterling, J. (2005). Variation in early developmental course in autism and its relation with behavioral outcome at 3-4 years of age. *Journal of Autism & Developmental Disorders*, 35, 337-350.
17. Dawson G., Webb S.J., Wijsman E., Schellenberg G., Estes A., Munson J., Faja S. (2005). Neurocognitive and electrophysiological evidence of altered face processing in parents of children with autism: Implications for a model of abnormal development of social brain circuitry in autism. *Developmental Psychopathology*, 17, 679-697.
18. Munson, J, Dawson, G., Abbott, R., Faja, S., Webb, S.J., Friedman, S.D. Shaw, D., Artru, A., and Dager, S. (2006). Amygdalar volume and behavioral development in autism. *Archives of General Psychiatry*, 63, 686-693.
19. Schellenberg, G.D., Dawson, G., Sung, Y.J., Estes, A., Munson, J., Rosenthal, E., Rothstein, J., Flodman, P., Smith, M., Coon, H., Leong, L., Yu, C.E., Stodgell, C., Rodier, P.M., Spence, M.A., Minshew, N., McMahon, W.M., & Wijsman E.M. (2006). Evidence for multiple loci from a genome scan of autism kindreds. *Molecular Psychiatry*, 140, 1049-1060.

20. Schellenberg, G.D., Dawson, G., Sung, Y.J., Estes, A., Munson, J., Rosenthal, E., Rothstein, J., Flodman, P., Smith, M., Coon, H., Leong, L., Yu, C.E., Stodgell, C., Rodier, P.M., Spence, M.A., Minshew, N., McMahon, W.M., & Wijsman E.M. (2006). Evidence for genetic linkage of autism to chromosomes 7 and 4. *Molecular Psychiatry*, 140, 2257-2274.
21. Toth, K. Munson, J., Meltzoff, A., Dawson, G. (2006). Early predictors of communication development in young children with autism spectrum disorder: Joint attention, imitation, and toy play. *Journal of Autism & Developmental Disorders*, 36, 993-1005.
22. Lainhart JE, Bigler ED, Bocian M, Coon H, Dinh E, Dawson G, Deutsch CK, Dunn M, Estes A, Tager-Flusberg H, Folstein S, Hepburn S, Hyman S, McMahon W, Minshew N, Munson J, Osann K, Ozonoff S, Rodier P, Rogers S, Sigman M, Spence MA, Stodgell CJ, Volkmar F. (2006). Head circumference and height in autism: a study by the Collaborative Program of Excellence in Autism, *American Journal of Medical Genetics. Part A.*, 140, 2257-74.
23. Dawson, G., Estes, A., Munson, J., Schellenberg, G., Bernier, R., & Abbott, R. (2007). Quantitative assessment of autism symptom-related traits in probands and parents: Broader Phenotype Autism Symptom Scale. *Journal of Autism and Developmental Disorders*, 37, 523-536.
24. Dawson, G., Munson J., Webb S.J., Nalty, T., Abbott, R., & Toth, K. (2007). Rate of head growth decelerates and symptoms worsen in the second year of life in autism. *Biological Psychiatry*, 61, 458-464.
25. Autism Genome Project Consortium: (2007) Mapping autism risk loci using genetic linkage and chromosomal rearrangements. *Nature Genetics*, 39, 319-28.
26. Estes A. M, Dawson, G., Sterling, L., Munson, J. (2007). Level of intellectual functioning predicts patterns of associated symptoms in school-age children with autism spectrum disorder. *American Journal on Mental Retardation*, 112, 439-449.
27. Webb, S.J., Nalty, T., Munson, J., Brock, C., Abbott, R., & Dawson, G. (2007) Rate of head circumference growth as a function of autism diagnosis and history of autistic regression. *Journal of Child Neurology*, 22, 1182-1190.
28. Elder, L. M., Dawson, G., Toth, K., Fein, D., Munson, J. (2007). Head circumference as an early predictor of autism symptoms in younger siblings of children with autism spectrum disorder. *Journal of Autism and Developmental Disorders*, 38, 1104-1111.
29. Brune, C.W., Korvatska, E., Allen-Brady, Cook, E.H. Dawson G., Devlin, B., Estes, A., Hennesly, M., Hyman, S., McMahon, W.M., Munson, J., Rodier, P.M., Schellenberg, G.D., Stodgell, C.J., & Coon, H. (2008). Heterogeneous Association between Engrailed-2 and Autism in the CPEA Network. *Neuropsychiatric Genetics*, 147, 187-193.
30. Sterling L, Dawson G, Webb S, Murias M, Munson J, Panagiotides H, Aylward E. (2008). The Role of Face Familiarity in Eye Tracking of Faces by Individuals with Autism Spectrum Disorders, *Journal of Autism and Developmental Disorders*, 38, 1666-1675.
31. Liu XQ, Paterson AD, Szatmari P; Autism Genome Project Consortium. (2008). Genome-wide linkage analyses of quantitative and categorical autism subphenotypes. *Biological Psychiatry*, 64, 561-570.
32. Munson, J., Dawson, G., Sterling, L., Beauchaine, T., Zhou, A., Koehler, E., Lord, C., Rogers, S., Sigman, M., Estes, A., & Abbott, R. (2008). Evidence for latent classes of IQ in young children with autism spectrum disorder, *American Journal on Mental Retardation*, 113, 427-438.

33. Munson, J., Faja, S., Meltzoff, A., Abbott, R., & Dawson, G. (2008). Neurocognitive predictors of social and communicative developmental trajectories in preschoolers with autism spectrum disorders, *Journal of the International Neuropsychological Society*, *14*, 956-966.
34. Liu XQ, Paterson AD, Szatmari P; Autism Genome Project Consortium. (2008). Genome-wide linkage analyses of quantitative and categorical autism subphenotypes. *Biological Psychiatry*, *64*, 561-70.
35. Glessner, JT, Wang, K, Cai, G, Korvatska, O., Kim, CE., Wood, S., Zhang, H., Estes, A., Brune, C., Bradfield, JP., Imielinski, M., Frackelton, EC, Reichert, J., Crawford, E., Munson, J., Sleiman, P., Chiavacci, R., Annaiah, K., Thomas, K., Hou, C., Glaberson, W., Flory, J., Otieno, F., Garris, M., Soorya, L., Klei, L., Piven, J., Meyer, KJ., Anagnostou, E., Sakurai, T., Game, RM., Rudd, DS., Zurawiecki, D., McDougle, C., Davis, LK., Miller, J., Posey, D., Michaels, S., Kolevzon, A., Silverman, J., Bernier, R., Levy, SE., Dawson, G., Owley, T., McMahon, WM., Wassink, TH., Sweeney, JA., Nurnberger Jr., Coon, H., Sutcliffe, JS., Minshew, NJ., Grant, S., Bucan, M., Cook, EH., Buxbaum, JD., Devlin, B., Schellenberg, GD., Hakonarson, H. (2009). Autism genome wide copy number variation reveals ubiquitin and neuronal genes, *Nature*, *459*, 569-573.
36. Wang, K., Zhang, H., Ma, D., Bucan, M., Glessner, J.T., Abrahams, BS., Salyakina, D., Imielinski, M., Bradfield, J.P., Sleiman, P., Kim, C.E., Chiavacci, R., Takahashi, N., Sakurai, T., Rappaport, E., Lajohchere, C.M., Munson, J., Estes, A., Korvatska, O., Piven, J., Sonnenblick, L.I., Alvares Retuerto, A., Herman, E.I., Dong, H., Hutman, T., Sigman, M., Ozonoff, S., Klin, A., Owley, T., Sweeney, J.A., Brune, C.W., Cantor, R., Bernier, R., Gilbert, JR., Cuccaro, ML., Wassink, TH., McMahon, WM., Coon, H., Miller, J., Nurnberger, JI., State, M., Haines, JL., Levy, S., Sutcliffe, J.S., Cook, EH., Minshew, N.J., Buxbaum, J.D., Dawson, G., Grant, S., Geshwind, DH., Pericak-Vance, M., Schellenberg, G.D., Hakonarson, H. (2009). Common genetic variation in the intergenic region between CDH10 and CDH9 is associated with susceptibility to autism spectrum disorders. *Nature*, *459*, 528-533.
37. Weiss, L.A., Weiss LA, Arking DE; Gene Discovery Project of Johns Hopkins & the Autism Consortium, Daly MJ, Chakravarti A. (2009). A genome-wide linkage and association scan reveals novel loci for autism. *Nature*, *461*, 802-808.
38. Estes, A. Munson, J., Dawson, G., Koehler, E., Zhou, X.H., Abbott, R. (2009). Parenting stress and psychological functioning among mothers of preschool children with autism and developmental delay. *Autism*, *13*, 375-387.
39. Dawson, G., Rogers, S., Munson, J., Smith, M., Wontner, J., Greenson, J., Donaldson, A., Varley, J. (2010). Randomized, controlled trial of an intervention for toddlers with autism: The early start Denver model. *Pediatrics*, *125*, e17-e23.
40. Pinto D, Pagnamenta AT, Klei L, Anney R, Merico D, Regan R, Conroy J, Magalhaes TR, Correia C, Abrahams BS, Almeida J, Bacchelli E, Bader GD, Bailey AJ, Baird G, Battaglia A, Berney T, Bolshakova N, Bölte S, Bolton PF, Bourgeron T, Brennan S, Brian J, Bryson SE, Carson AR, Casallo G, Casey J, Chung BH, Cochrane L, Corsello C, Crawford EL, Crossett A, Cytrynbaum C, Dawson G, de Jonge M, Delorme R, Drmic I, Duketis E, Duque F, Estes A, Farrar P, Fernandez BA, Folstein SE, Fombonne E, Freitag CM, Gilbert J, Gillberg C, Glessner JT, Goldberg J, Green A, Green J, Guter SJ, Hakonarson H, Heron EA, Hill M, Holt R, Howe JL, Hughes G, Hus V, Iglizzi R, Kim C, Klauck SM, Kolevzon A, Korvatska O, Kustanovich V, Lajonchere CM, Lamb JA, Laskawiec M, Leboyer M, Le Couteur A, Leventhal BL, Lionel AC, Liu XQ, Lord C, Lotspeich L, Lund SC, Maestrini E, Mahoney W, Mantoulan C, Marshall CR, McConachie H, McDougle CJ, McGrath J, McMahon WM, Merikangas A, Migita O, Minshew NJ, Mirza GK, Munson J, Nelson SF, Noakes C,

Noor A, Nygren G, Oliveira G, Papanikolaou K, Parr JR, Parrini B, Paton T, Pickles A, Pilorge M, Piven J, Ponting CP, Posey DJ, Poustka A, Poustka F, Prasad A, Ragoussis J, Renshaw K, Rickaby J, Roberts W, Roeder K, Roge B, Rutter ML, Bierut LJ, Rice JP, Salt J, Sansom K, Sato D, Segurado R, Sequeira AF, Senman L, Shah N, Sheffield VC, Soorya L, Sousa I, Stein O, Sykes N, Stoppioni V, Strawbridge C, Tancredi R, Tansey K, Thiruvahindrapduram B, Thompson AP, Thomson S, Tryfon A, Tsiantis J, Van Engeland H, Vincent JB, Volkmar F, Wallace S, Wang K, Wang Z, Wassink TH, Webber C, Weksberg R, Wing K, Wittemeyer K, Wood S, Wu J, Yaspan BL, Zurawiecki D, Zwaigenbaum L, Buxbaum JD, Cantor RM, Cook EH, Coon H, Cuccaro ML, Devlin B, Ennis S, Gallagher L, Geschwind DH, Gill M, Haines JL, Hallmayer J, Miller J, Monaco AP, Nurnberger Jr JI, Paterson AD, Pericak-Vance MA, Schellenberg GD, Szatmari P, Vicente AM, Vieland VJ, Wijsman EM, Scherer SW, Sutcliffe JS, Betancur C. (2010). Functional impact of global rare copy number variation in autism spectrum disorders. *Nature*, 466: 368-372.

41. Anney R, Klei L, Pinto D, Regan R, Conroy J, Magalhaes TR, Correia C, Abrahams BS, Sykes N, Pagnamenta AT, Almeida J, Bacchelli E, Bailey AJ, Baird G, Battaglia A, Berney T, Bolshakova N, Bölte S, Bolton PF, Bourgeron T, Brennan S, Brian J, Carson AR, Casallo G, Casey J, Chu SH, Cochrane L, Corsello C, Crawford EL, Crossett A, Dawson G, de Jonge M, Delorme R, Drmic I, Duketis E, Duque F, Estes A, Farrar P, Fernandez BA, Folstein SE, Fombonne E, Freitag CM, Gilbert J, Gillberg C, Glessner JT, Goldberg J, Green J, Guter SJ, Hakonarson H, Heron EA, Hill M, Holt R, Howe JL, Hughes G, Hus V, Iglizzi R, Kim C, Klauck SM, Kolevzon A, Korvatska O, Kustanovich V, Lajonchere CM, Lamb JA, Laskawiec M, Leboyer M, Le Couteur A, Leventhal BL, Lionel AC, Liu XQ, Lord C, Lotspeich L, Lund SC, Maestrini E, Mahoney W, Mantoulan C, Marshall CR, McConachie H, McDougale CJ, McGrath J, McMahan WM, Melhem NM, Merikangas A, Migita O, Minshew NJ, Mirza GK, Munson J, Nelson SF, Noakes C, Noor A, Nygren G, Oliveira G, Papanikolaou K, Parr JR, Parrini B, Paton T, Pickles A, Piven J, Posey DJ, Poustka A, Poustka F, Prasad A, Ragoussis J, Renshaw K, Rickaby J, Roberts W, Roeder K, Roge B, Rutter ML, Bierut LJ, Rice JP, Salt J, Sansom K, Sato D, Segurado R, Senman L, Shah N, Sheffield VC, Soorya L, Sousa I, Stoppioni V, Strawbridge C, Tancredi R, Tansey K, Thiruvahindrapduram B, Thompson AP, Thomson S, Tryfon A, Tsiantis J, Van Engeland H, Vincent JB, Volkmar F, Wallace S, Wang K, Wang Z, Wassink TH, Wing K, Wittemeyer K, Wood S, Yaspan BL, Zurawiecki D, Zwaigenbaum L, Betancur C, Buxbaum JD, Cantor RM, Cook EH, Coon H, Cuccaro ML, Gallagher L, Geschwind DH, Gill M, Haines JL, Miller J, Monaco AP, Nurnberger JI Jr, Paterson AD, Pericak-Vance MA, Schellenberg GD, Scherer SW, Sutcliffe JS, Szatmari P, Vicente AM, Vieland VJ, Wijsman EM, Devlin B, Ennis S, Hallmayer J. (2010). A genome-wide scan for common alleles affecting risk for autism. *Hum Mol Genet*, 19(20):4072-4082.
42. Noor A, Whibley A, Marshall CR, Gianakopoulos PJ, Piton A, Carson AR, Orlic-Milacic M, Lionel AC, Sato D, Pinto D, Drmic I, Noakes C, Senman L, Zhang X, Mo R, Gauthier J, Crosbie J, Pagnamenta AT, Munson J, Estes AM, Fiebig A, Franke A, Schreiber S, Stewart AF, Roberts R, McPherson R, Guter SJ, Cook EH Jr, Dawson G, Schellenberg GD, Battaglia A, Maestrini E; Autism Genome Project Consortium, Jeng L, Hutchison T, Rajcan-Separovic E, Chudley AE, Lewis SM, Liu X, Holden JJ, Fernandez B, Zwaigenbaum L, Bryson SE, Roberts W, Szatmari P, Gallagher L, Stratton MR, Gecz J, Brady AF, Schwartz CE, Schachar RJ, Monaco AP, Rouleau GA, Hui CC, Lucy Raymond F, Scherer SW, Vincent JB. (2011). Disruption at the PTCHD1 Locus on Xp22.11 in Autism spectrum disorder and intellectual disability. *Sci Transl Med*, 2(49):49ra68.



43. Chapman NH, Estes A, Munson J, Bernier R, Webb SJ, Rothstein JH, Minshew NJ, Dawson G, Schellenberg GD, Wijsman EM. (2011). Genome-scan for IQ discrepancy in autism: evidence for loci on chromosomes 10 and 16. *Hum Genet.* 129(1):59-70.
44. Korvatska O, Estes A, Munson J, Dawson G, Bekris LM, Kohen R, Yu CE, Schellenberg GD, Raskind WH. (2011). Mutations in the TSGA14 gene in families with autism spectrum disorders. *Am J Med Genet B Neuropsychiatr Genet.* 156(B): 303-311.
45. Casey JP, Magalhaes T, Conroy JM, Regan R, Shah N, Anney R, Shields DC, Abrahams BS, Almeida J, Bacchelli E, Bailey AJ, Baird G, Battaglia A, Berney T, Bolshakova N, Bolton PF, Bourgeron T, Brennan S, Cali P, Correia C, Corsello C, Coutanche M, Dawson G, de Jonge M, Delorme R, Duketis E, Duque F, Estes A, Farrar P, Fernandez BA, Folstein SE, Foley S, Fombonne E, Freitag CM, Gilbert J, Gillberg C, Glessner JT, Green J, Guter SJ, Hakonarson H, Holt R, Hughes G, Hus V, Iglizzi R, Kim C, Klauck SM, Kolevzon A, Lamb JA, Leboyer M, Le Couteur A, Leventhal BL, Lord C, Lund SC, Maestrini E, Mantoulan C, Marshall CR, McConachie H, McDougale CJ, McGrath J, McMahon WM, Merikangas A, Miller J, Minopoli F, Mirza GK, Munson J, Nelson SF, Nygren G, Oliveira G, Pagnamenta AT, Papanikolaou K, Parr JR, Parrini B, Pickles A, Pinto D, Piven J, Posey DJ, Poustka A, Poustka F, Ragoussis J, Roge B, Rutter ML, Sequeira AF, Soorya L, Sousa I, Sykes N, Stoppioni V, Tancredi R, Tauber M, Thompson AP, Thomson S, Tsiantis J, Van Engeland H, Vincent JB, Volkmar F, Vorstman JA, Wallace S, Wang K, Wassink TH, White K, Wing K, Wittemeyer K, Yaspan BL, Zwaigenbaum L, Betancur C, Buxbaum JD, Cantor RM, Cook EH, Coon H, Cuccaro ML, Geschwind DH, Haines JL, Hallmayer J, Monaco AP, Nurnberger JI Jr, Pericak-Vance MA, Schellenberg GD, Scherer SW, Sutcliffe JS, Szatmari P, Vieland VJ, Wijsman EM, Green A, Gill M, Gallagher L, Vicente A, Ennis S. (2012). A novel approach of homozygous haplotype sharing identifies candidate genes in autism spectrum disorder. *Hum Genet.* 131(4), 565-79.
46. Bernier R, Gerds J, Munson J, Dawson G, Estes A. (2012). Evidence for broader autism phenotype characteristics in parents from multiple-incidence autism families. *Autism Res.* 5, 13-20.
47. Anney R, Klei L, Pinto D, Almeida J, Bacchelli E, Baird G, Bolshakova N, Bölte S, Bolton PF, Bourgeron T, Brennan S, Brian J, Casey J, Conroy J, Correia C, Corsello C, Crawford EL, de Jonge M, Delorme R, Duketis E, Duque F, Estes A, Farrar P, Fernandez BA, Folstein SE, Fombonne E, Gilbert J, Gillberg C, Glessner JT, Green A, Green J, Guter SJ, Heron EA, Holt R, Howe JL, Hughes G, Hus V, Iglizzi R, Jacob S, Kenny GP, Kim C, Kolevzon A, Kustanovich V, Lajonchere CM, Lamb JA, Law-Smith M, Leboyer M, Le Couteur A, Leventhal BL, Liu XQ, Lombard F, Lord C, Lotspeich L, Lund SC, Magalhaes TR, Mantoulan C, McDougale CJ, Melhem NM, Merikangas A, Minshew NJ, Mirza GK, Munson J, Noakes C, Nygren G, Papanikolaou K, Pagnamenta AT, Parrini B, Paton T, Pickles A, Posey DJ, Poustka F, Ragoussis J, Regan R, Roberts W, Roeder K, Roge B, Rutter ML, Schlitt S, Shah N, Sheffield VC, Soorya L, Sousa I, Stoppioni V, Sykes N, Tancredi R, Thompson AP, Thomson S, Tryfon A, Tsiantis J, Van Engeland H, Vincent JB, Volkmar F, Vorstman JA, Wallace S, Wing K, Wittemeyer K, Wood S, Zurawiecki D, Zwaigenbaum L, Bailey AJ, Battaglia A, Cantor RM, Coon H, Cuccaro ML, Dawson G, Ennis S, Freitag CM, Geschwind DH, Haines JL, Klauck SM, McMahon WM, Maestrini E, Miller J, Monaco AP, Nelson SF, Nurnberger JI Jr, Oliveira G, Parr JR, Pericak-Vance MA, Piven J, Schellenberg GD, Scherer SW, Vicente AM, Wassink TH, Wijsman EM, Betancur C, Buxbaum JD, Cook EH, Gallagher L, Gill M, Hallmayer J, Paterson AD, Sutcliffe JS, Szatmari P, Vieland VJ, Hakonarson H, Devlin B. (2012). Individual common variants exert weak effects on the risk for autism spectrum disorders. *Hum Mol Genet.* 21(21):4781-92.

48. O'Roak BJ, Vives L, Fu W, Egertson JD, Stanaway IB, Phelps IG, Carvill G, Kumar A, Lee C, Ankenman K, Munson J, Hiatt JB, Turner EH, Levy R, O'Day DR, Krumm N, Coe BP, Martin BK, Borenstein E, Nickerson DA, Mefford HC, Doherty D, Akey JM, Bernier R, Eichler EE, Shendure J. (2012). Multiplex targeted sequencing identifies recurrently mutated genes in autism spectrum disorders. *Science*, 338(6114):1619-22.
49. Estes A, Olson E, Sullivan K, Greenson J, Winter J, Dawson G, Munson J. (2013). Parenting-related stress and psychological distress in mothers of toddlers with autism spectrum disorders. *Brain Dev*, 35(2):133-8.
50. Krumm N, O'Roak BJ, Karakoc E, Mohajeri K, Nelson B, Vives L, Jacquemont S, Munson J, Bernier R, Eichler EE. (2013). Transmission disequilibrium of small CNVs in simplex autism. *Am J Hum Genet*, 93(4):595-606.
51. Corrigan NM, Shaw DW, Estes AM, Richards TL, Munson J, Friedman SD, Dawson G, Artru AA, Dager SR. (2013). Atypical developmental patterns of brain chemistry in children with autism spectrum disorder. *JAMA Psychiatry*, 70(9):964-74.
52. Kuhl PK, Coffey-Corina S, Padden D, Munson J, Estes A, Dawson G. Brain responses to words in 2-year-olds with autism predict developmental outcomes at age 6. (2013). *PLoS One*, 8(5):e64967. doi: 10.1371/journal.pone.0064967.
53. Sterling L, Munson J, Estes A, Murias M, Webb SJ, King B, Dawson G. (2013). Fear-potentiated startle response is unrelated to social or emotional functioning in adolescents with autism spectrum disorders. *Autism Res*. 6(5):320-31. doi: 10.1002/aur.1289.
54. Estes A, Vismara L, Mercado C, Fitzpatrick A, Elder L, Greenson J, Lord C, Munson J, Winter J, Young G, Dawson G, Rogers S. (2014). The impact of parent-delivered intervention on parents of very young children with autism. *J Autism Dev Disord*, 44(2):353-65.
55. Estes A, Munson J, Rogers SJ, Greenson J, Winter J, Dawson G. Long-Term Outcomes of Early Intervention in 6-Year-Old Children With Autism Spectrum Disorder. *J Am Acad Child Adolesc Psychiatry*. 2015 Jul;54(7):580-7. doi: 10.1016/j.jaac.2015.04.005. PubMed PMID: 26088663; PubMed Central PMCID: PMC4475272.
56. Chapman NH, Nato AQ Jr, Bernier R, Ankenman K, Sohi H, Munson J, Patowary A, Archer M, Blue EM, Webb SJ, Coon H, Raskind WH, Brkanac Z, Wijsman EM. Whole exome sequencing in extended families with autism spectrum disorder implicates four candidate genes. *Hum Genet*. 2015 Oct;134(10):1055-68. doi: 10.1007/s00439-015-1585-y. PubMed PMID: 26204995; PubMed Central PMCID: PMC4578871.
57. Neuhaus E, Jones EJ, Barnes K, Sterling L, Estes A, Munson J, Dawson G, Webb SJ. The Relationship Between Early Neural Responses to Emotional Faces at Age 3 and Later Autism and Anxiety Symptoms in Adolescents with Autism. *J Autism Dev Disord*. 2016 Jul;46(7):2450-63. doi: 10.1007/s10803-016-2780-y. PubMed PMID: 27055415.
58. Cidav Z, Munson J, Estes A, Dawson G, Rogers S, Mandell D. Cost offset associated with Early Start Denver Model for children with autism. *J Am Acad Child Adolesc Psychiatry*. 2017 Sep;56(9):777-783. doi: 10.1016/j.jaac.2017.06.007. Epub 2017 Jul 4. PubMed PMID: 28838582.
59. Zhou V, Munson JA, Greenson J, Hou Y, Rogers S, Estes AM. An exploratory longitudinal study of social and language outcomes in children with autism in bilingual home environments. *Autism*. 2017 Dec 1:1362361317743251. doi: 10.1177/1362361317743251. [Epub ahead of print] PubMed PMID: 29237275.

60. Estes A, Munson J, John TS, Dager SR, Rodda A, Botteron K, Hazlett H, Schultz RT, Zwaigenbaum L, Piven J, Guralnick MJ; IBIS network. Parent support of preschool peer relationships in younger siblings of children with Autism Spectrum Disorder. *J Autism Dev Disord*. 2018 Apr;48(4):1122-1132. doi: 10.1007/s10803-017-3202-5. PubMed PMID: 28634707; PubMed Central PMCID: PMC5738288.
61. Rogers, SJ, Estes, A, Vismara, L, Munson, J, Zierhut, C, Greenson, J, Dawson, G, Rocha, M, Sugar, C, Senturk, D, Whelan, F, Talbott, M. Enhancing low-intensity coaching in parent implemented Early Start Denver Model intervention for early autism: A randomized comparison treatment trial. *J Autism Dev Disord*, 2018 Sep. doi: 10.1007/s10803-018-3740-5. [Epub ahead of print] PMID: 30203308
62. Chapman NH, Bernier RA, Webb SJ, Munson J, Blue EM, Chen DH, Heigham E, Raskind WH, Wijsman EM. Replication of a rare risk haplotype on 1p36.33 for autism spectrum disorder. *Hum Genet*. 2018 Oct;137(10):807-815. doi: 10.1007/s00439-018-1939-3. Epub 2018 Oct 1. PMID: 30276537
63. Talbott MR, Young GS, Munson J, Estes A, Vismara LA, Rogers SJ. The developmental sequence and relations between gesture and spoken language in toddlers with Autism Spectrum Disorder. *Child Dev*. 2018 Dec 31. doi: 10.1111/cdev.13203. [Epub ahead of print] PMID: 30597550
64. Rogers SJ, Estes A, Lord C, Munson J, Rocha M, Winter J, Greenson J, Colombi C, Dawson G, Vismara LA, Sugar CA, Hellemann G, Whelan F, Talbott M. A Multisite Randomized Controlled Two-Phase Trial of the Early Start Denver Model Compared to Treatment as Usual. *J Am Acad Child Adolesc Psychiatry*. 2019. Jan 24. pii: S0890-8567(19)30044-9. doi: 10.1016/j.jaac.2019.01.004. PMID: 30768394 [Epub ahead of print]

#### Book Chapters

1. Abbott, R. D., Amtmann, D., Munson, J. (2003). Exploratory and confirmatory methods in learning disabilities research. Swanson, H. L., Harris, K. R., et al. (Eds), *Handbook of learning disabilities* (pp. 471-482). New York, NY, US: Guilford Press.
2. Abbott, R. D., Amtmann, D., & Munson, J. (2006). Statistical analysis for field experiments and longitudinal data in writing research. In C. Macarthur, S. Graham, & J. Fitzgerald (Eds.) *Handbook of Writing Research*, pp. 374-386. New York: Guilford Press.

#### Professional Articles and Editorials

1. Munson, J. A. (2009). Book Reviews. Autism: Current Theories and Evidence; The Ethics of Autism: Among Them, but Not of Them, *New England Journal of Medicine*, 360, 2485-2486
2. Munson, J., & Pasqual, P. (2012). Technology in autism research: The promise and perils. *IEEE Computer Mag*, 45(6).

#### Conference Presentations

1. Dawson, G., Schellenberg, J., Wijsman, E., Osterling, J., Estes, A., & Munson, J. Genetic study of autism. Presented at the 1999 Meeting of the Autism Society of America, Kansas City, KS.
2. Dager, S.R., Friedman S.D., Shaw, D., Echelard, D., Artru, A.A., Strauss, W., Sparks, B., Carver, L., Richards T., Munson J., & Dawson G. (2000, March). Brain Structural and Chemical Imaging of Autistic Children, Developmentally Delayed Children and Age-Matched Controls. 20th Annual Meeting, European Winter Brain Conference. Geneva, Switzerland.
3. Dager, S.R., Friedman, S.D., Shaw, D., Echelard, D., Artru, A.A., Strauss, W.D., Sparks, B., Carver, L., Richards, T.L., Munson, J., & Dawson, G.(2000, August). Neuroimaging of the autistic child's brain: Brain, structure chemistry and function. IASSID Seattle, WA.
4. Dawson, G., Rogers, S., Sigman, M., Munson, J., & Abbott, R. Cognitive Functioning in Young Children with Autism versus Mental Retardation. Presented at the 2000 meeting of the Collaborative Programs of Excellence in Autism (CPEA). Denver, CO.
5. Werner, E., Dawson, G., Osterling, J., & Munson, J. Autistic regression: A validation of the phenomenon based on home videotapes and parent report. Presented at the 2001 meeting of the Society for Research in Child Development, Minneapolis, MI.
6. Dager, S.R., Friedman, S.D., Shaw, D.W.W., Sparks, B., Richards, T.L., Munson, J., Artru, A.A., Giedd, J., & Dawson G. (2001, December). Brain Structural and Chemical Abnormalities in Childhood Autism. Annual Meeting, American College of Neuropsychopharmacology.
7. Dager, S., Munson, J., Friedman, S., Webb, S., Shaw, D., Sparks, B., Artru, R., Abbott, R., & Dawson, G. (2002, November). Neuroimaging relationship to behavioral performance and clinical course in young children with ASD. Presented at the 2002 Meeting of the International Society for Autism Research, Orlando, FL.
8. Dawson, G., Schellenberg, G., Wijsman, E., Munson, J., & Estes, A. (2002, November). Quantitative assessments of autism symptoms in probands and family members: Broader Phenotype Autism Scale. Presented at the 2002 Meeting of the International Society for Autism Research, Orlando, FL.
9. Dawson, G., Munson, J., Estes, A., & Abbott, R. (2003, April). Early neurocognitive predictors of variations in developmental trajectory in autism. Accepted for presentation at the 2003 meeting of the Society for Research in Child Development. Tampa, FL.
10. Toth, K., Munson, J., Estes, A., Abbott, R., & Dawson, G. (2003, April). Joint Attention Predicts Rate of Language and Social Growth in Young Children With Autism. Poster presented at the 2003 meeting of the Society for Research in Child Development. Tampa, FL.
11. Toth, K., Dawson, G., Meltzoff, A., & Munson, J. (2004). Early predictors of language growth in young children with autism: Joint attention, imitation, and toy play. Poster presented at the International Meeting for Autism Research, Sacramento, CA.
12. Dawson, G., Webb, S.J., Wijsman, E., Schellenberg, G., Estes, A., Munson, J., & Faja, S. Face Processing is Altered in Parents of Children With Autism: Neurocognitive and Neurophysiological Evidence. Accepted for presentation at the 2005 Meeting of the Society for Research in Child Development. Atlanta, GA.
13. Estes, A. M., Munson, J., Clary, L., & Dawson, G. Presence of a Broader Phenotype of Autism in Siblings From Multiplex Autism Families Accepted for presentation in the Symposium on "Autism in Infancy" S. Ozonoff and N. Yirmiya (Chairs) at the 2005 Meeting of the Society for Research in Child Development. Atlanta, GA.

14. Munson, J., Dawson, G., Lord, C., Rogers, S., Sigman, M., & Abbott, R. Evidence for a bimodal distribution of neurocognitive function in autism. Presented at the 2005 meeting of the Collaborative Programs of Excellence in Autism (CPEA). Bethesda, MD.
15. Munson, J.A. (2009). Inferences on cognition in nonverbal children via real-time analysis of eye gaze. Poster presented at the International Meeting for Autism Research, Chicago, IL.

## EXPERT TESTIMONY

Dr. Munson has worked as an expert in relation to data management and statistical analysis on over 40 cases with attorneys from Schroeter, Goldmark, & Bender, the Law Office of David Mark, Terrell Marshall Law Group, Rehki & Wolk, and Barnard, Iglitzin, & Lavitt.

### Trial Testimony:

*Pellino v. Brinks, Incorporated*

*Hill v. Garda CL Northwest, Inc.*

*Bruner, et al. v. Davis Wire Corporation*

*Espinoza v. MH Janitorial Services, LLC*

*Washington State Nurses Association v.*

*Yakima HMA LLC, d/b/a Yakima Regional Medical and Cardiac Center*

### Deposition Testimony:

*Pellino v. Brinks, Incorporated*

*Hill v. Garda CL Northwest, Inc.*

*Bruner, et al. v. Davis Wire Corporation*

*Owens v. Bethlehem Construction Inc.*

*Watkins et al. v. United Parcel Service, Inc.*

*Elliott v. Cadman, Inc.*

*Thompson, Edwards, and Rowe v. Peterson Brothers, Inc.*

*Ott v. Mortgage Investors Corporation*

*Washington State Nurses Association v.*

*Yakima HMA LLC, d/b/a Yakima Regional Medical and Cardiac Center*

*Hardie et al. v. Best Parking Lot Cleaning Inc.*

## GRANTS

Special Hope Foundation                      Munson (PI)    7/1/08-6/30/09

Communication and Gaze in Children with Disabilities

The purpose of this project is to develop an innovative assessment tool using eye-tracking technology that is integrated in real-time with real-time 3D rendered graphics. The integration of these two technologies will provide a means to investigate social-cognition and language comprehension in children with limited communication abilities.

Role: Principal Investigator

P50HD055782 NICHD/NIDCD                      King (PI), Munson (Core PI)    8/1/07– 7/31/12

UW Autism Center of Excellence

The goals of this project are to (1) discover genetic and environmental risk factors for autism, (2) identify early behavioral and neurophysiological risk indices of autism, (3) examine early manifestations of abnormal brain development in autism, (4) conduct a randomized clinical trial aimed at reducing and preventing the onset of autism symptoms, (5) conduct a follow-up study of early intensive behavioral intervention in autism, and (6) identify risk factors for the development of associated conditions in adolescence in autism.

Role: Principal Investigator of Statistics and Data Management Core

Simons Foundation                                      Munson (PI)    2/1/12-1/31/13

Novel Measurement of Imitation and Motor Control in Severe Autism

This project will use novel computer-based activities to study imitation and motor planning skills in a sample of severely impaired adolescents with autism. The activities use the Microsoft Kinect depth camera to record body movement in fine-detail as the students pop balloons, balance blocks, play “follow the leader”, and pilot an airplane. During these activities we will measure how students modify their movements in response to what they observe on the screen. This will allow us to assess the learning process as it unfolds based on behavior the student initiates on his or her own. Tools that can assess subtle changes in behavior and learning are needed to support treatment research for those with the most severe impairments.

Role: Principal Investigator

## TEACHING

Faculty sponsor for Jae Kim, Student of Dr. Kelvin Sung in the senior internship program in the UW Bothell Department of Computing and Software Systems. Project Title: *Integrating Eye-tracking Device-Driven Applications for Studying Autism Using Valve's Source Real-time Game Engine*. (2009).

Faculty sponsor for Young Youn, Student of Dr. Kelvin Sung in the senior internship program in the UW Bothell Department of Computing and Software Systems. Project Title: *Eye-tracking Across Multiple Monitors Using Valve's Source Game Engine To Investigate Nonverbal Measures of Theory of Mind*. (2009).

Faculty Mentor to David Xue, Senior Capstone Project in the UW Department of Engineering (Department sponsor, Tom Lewis, PhD). Project Title: *Design of a toolset for evaluating visual attention variability in autistic children*. (2010).

## SERVICE

Discussion Leader for the Biomedical Research Integrity Program Series, Department of Bioethics & Humanities, UW School of Medicine. (2010, 2012).

## PROFESSIONAL AFFILIATIONS

International Society for Autism Research

## APPENDIX B PREVIOUS TESTIMONY

Over the past five years I have provided trial and/or deposition testimony in the following cases:

Case	Case No.	Court	Trial testimony	Deposition testimony
Rojas v. Damco Distribution Services, Inc./Damco USA, Inc.	17-2-14133-5	Pierce County Superior Court		5/25/2019
Hardie et al. vs. Best Parking Lot Cleaning Inc.	17-2-27730-4	King County Superior Court		4/2/2019
Mendis v. Schneider National Carriers, Inc.	C15-0144-JCC	US District Court for the Western District of WA		2/7/2018
WA State Nurses Assoc v. Yakima Regional Medical and Cardiac Center	15-2-01109-9	Yakima County Superior Court	1/26/2018 & 2/5/2018	1/10/2017 & 5/19/2017
Espinoza v. MH Janitorial Services, LLC	14-2-26201-9	King County Superior Court	1/23/2017	
Hill, et al. v. Garda CL Northwest, Inc	09-2-07360-1	King County Superior Court	6/16/2015	4/23/2015
Southwell v. Mortgage Investors Corp.	2:23-cv-01289-MJP	US District Court for the Western District of Washington		7/18/2014
Bruner v. Davis Wire Corp.	12-2-15676-0	King County Superior Court	9/3/2014	6/27/2014



## **APPENDIX C COMPENSATION**

I am working at my current rate of \$350 per hour for analysis and testimony for this case.

# **EXHIBIT D**

**EXCEL SPREADSHEET  
PRODUCED IN NATIVE FORMAT**

# **EXHIBIT 2**



ESTABLISHED 1969

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February 24, 2020

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Denver, CO 80202

Re: *Nwauzor v. The GEO Group, Inc.*

Dear Mr. Barnacle:

I am responding to your letter of February 13, 2020 regarding the amended report of Dr. Munson. As explained below, we are not going to withdraw the amended report and believe your arguments for asking us to do so are misplaced.

Rule 37(c)(1) provides that expert testimony disclosed after the normal deadline may still be allowed if it was substantially justified or is harmless. Both exceptions are met here.

To begin, the timing of Dr. Munson's amended report is substantially justified by GEO's delays in providing electronic Keefe banking data that had been repeatedly requested in discovery by Plaintiffs' counsel. These data were not produced in usable format until after the deadline for Plaintiffs' expert report. Amendment of Dr. Munson's report was not only substantially justified, but inevitable given the timing of GEO's document production.

To provide just a brief history of this issue, Plaintiffs first requested all records showing "work hours and work assignments performed by detainees participating in the Voluntary Work Program" and all records showing compensation paid to VWP participants on January 31, 2018. *See* Plaintiff's First Interrogatories and Request for Production (Interrogatories 4 & 6, Requests for Production A, D, & Z). Those requests specifically directed that "[f]iles such as spreadsheets and drawing files ... should be produced in native format." There is no reasonable dispute that the Keefe banking data are responsive to these requests.

On August 6, 2019, following review of the 30(b)(6) deposition of Ryan Kimble, we specifically requested production of the Keefe banking data in Excel or similar comma-delimited format. We noted at the time that PDFs of individual pay data produced to the State of Washington were incomplete and from outside the class period.

On September 20, 2019, after the September 11 deadline for Dr. Munson's report, GEO produced Excel spreadsheets through June 2018, but those spreadsheets did not contain any



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work location data. Therefore, although they provided individual pay data, they did not provide any information that would enable a different aggregate analysis than the ICE invoice data initially used by Dr. Munson. Plaintiffs emailed defense counsel about this omission on October 15, noting that the PDFs produced to the State contained job location data, but received no response.

On October 31, 2019, GEO's expert, Serena Morones, produced a report that relied in significant part on analysis of the Keefe banking data to critique Dr. Munson's initial report. Unlike the spreadsheets produced to Plaintiffs on September 20, the data provided to Ms. Morones did include work location data. By itself, the fact that GEO provided its own expert with these important data at the same time it was being withheld from Plaintiffs' expert provides substantial justification for the post-deadline amendment of Dr. Munson's opinions.

On November 1, the day after receiving Ms. Morones's rebuttal report, we emailed regarding the discrepancy between the data produced to Plaintiffs and that provided to Ms. Morones. GEO finally produced the complete Keefe banking data, with work location information, on November 13, 2019.

After learning that the Keefe banking data were available in usable format, Plaintiffs consistently made it clear that Dr. Munson would be preparing a revised report once he received and had adequate time to analyze the data. For example, on November 8, Mr. Whitehead emailed that Dr. Munson had not had a chance to review the Worker Pay files and that "[t]his data may necessitate supplementation of his initial report." Subsequently, we advised defense counsel that it might make sense to defer Dr. Munson's deposition until he completed his new analysis, but you nonetheless decided to proceed with his deposition. At deposition, Dr. Munson repeatedly stated that he was still working with the Keefe banking data and would be revising his calculations accordingly. *See* Munson Dep. 35, 69-70, 71-72. And in opposing GEO's motion to strike, Plaintiffs expressly told defense counsel and the Court that Dr. Munson "anticipates supplementing his report to refine his aggregate damages calculations and to determine individual damages owed to the Class Members" based on the banking data. *Opp. Mot. To Strike* at 4 n.3. Thus, there is absolutely no surprise to GEO from the present amendment.

Finally, your assertion that there is no substantial justification for the new opinions because GEO produced the banking records in TIF format in April 2019 is flawed on two grounds. First, GEO did not produce comprehensive records for the entire class period. Rather, the records it produced only covered certain months, were repetitive, and were scattered throughout other document production, not consolidated or identified in any way. Second, even if GEO had produced a comprehensive set of records in TIF format, that would not have been usable for Dr. Munson's calculations. The Keefe spreadsheets contain over 700,000 rows of information. The TIFs for *one month* of banking records used by GEO as an exhibit

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during Dr. Munson's deposition ran 182 pages alone and were produced as separate TIF files for every single page. Reliably transcribing these records into a format where it could be used for electronic computations simply would not have been feasible, a fact apparently recognized by Ms. Morones when she asked for the data in Excel format.

Beyond the issue of substantial justification, the amendment of Dr. Munson's report is also harmless. If anything, Dr. Munson's amended report benefits GEO because his damage calculations decreased by approximately \$736,000, even with the addition of an extra six weeks of extrapolated damages. Dr. Munson's amended report also calculates an average shift length of 1.4569 hours (compared to the 1.72 hours calculated by Mr. Heye and used in Dr. Munson's initial report), which is virtually identical to the average shift length calculated by Ms. Morones in her rebuttal report.<sup>1</sup> Given the consistency of Dr. Munson's revised calculations to those of GEO's own expert, there is no harm to GEO from allowing the amended opinion.

Moreover, the bifurcation of the trial into liability and damage phases further eliminates any theoretical harm from amendment of Dr. Munson's opinion, since Dr. Munson would not testify until the second trial, if one even occurs. For similar reasons, your reference to *Luke* is wholly inapposite. In that case, the late disclosed opinion introduced an entirely new liability theory into a complex medical malpractice case after the close of discovery and in response to defendant's motion for summary judgment. Here, the amended opinion simply provides a lower, and more precise, calculation of damages utilizing the same basic mathematical methodology, and does not affect the determination of liability at all.

Finally, there is no harm to GEO from the fact that the company brought, and lost, its motion to exclude before provision of the amended report. GEO's motion first argued that Dr. Munson lacks specialized knowledge and is not qualified to provide an expert opinion on damages in this case. That argument was rejected by the Court. Nothing in the amended report changes Dr. Munson's knowledge or qualifications or affects the outcome of that argument at all. Next, GEO argued that Dr. Munson's methods were unreliable, because he simply applied the assumptions provided by counsel to the data, rather than engaging in any sort of sampling or statistical analysis. The Court also rejected this argument, reasoning that whether the assumptions he was asked to apply are proper and supported by the evidence is a matter for trial and does not affect the admissibility of his testimony. Again, nothing in Dr. Munson's amended report changes this argument or conclusion, because Dr. Munson is

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<sup>1</sup> Ms. Morones critiqued Dr. Munson's original report by reevaluating the average shift length after adjusting separately for the proportion of kitchen and barbershop work based on the Keefe banking data. After analyzing the kitchen data, she determined that the average shift length should be reduced to 1.49 hours, rather than 1.72. After analyzing the barber data, she calculated a reduction of .04 hours, from 1.72 to 1.68. Combining these two reductions results in an average shift length of 1.45 hours.

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still simply performing mathematical calculations by applying assumptions provided by counsel to the data. Finally, GEO argued that Dr. Munson's opinion should be excluded because he simply accepted the average shift length figure of 1.72 hours from Exhibit 20, rather than verifying that figure against other sources like the TIF Keefe banking records. The Court rejected this argument. Given that rejection, GEO suffers no harm from the fact that Dr. Munson has now done what Defendant argued was lacking before – using the more detailed banking data to calculate potential damages. The only “harm” GEO suffers is the inability to use its own dilatory conduct in responding to discovery as a launchpad for attacking Dr. Munson's opinion, which is not the type of harm contemplated by the rule.

In short, we will not voluntarily withdraw Dr. Munson's amended report, and would be happy to take the issue up with the Court.

Sincerely,



ADAM J. BERGER