The 9th Annual Klingenstein Third Generation Foundation Child and Adolescent Psychiatry National Conference

Hosted by Mayo Medical School

**Friday, February 6**
6:00-9:00 pm  Dinner & Welcome Reception  
   The Loop: 318 1st Avenue SW, Rochester MN 55902

**Saturday, February 7**
8:15-8:45 am  Minnesota Hotdish Breakfast, catered by Canadian Honker  
   Mitchell Student Center (Room 1-02)

9:00-10:00 am  Keynote Speaker, Dr. Lloyd Wells  
   Geffen Auditorium (Gonda Building, Subway Level)

10:00-10:30 am  The Games!  
   Landow Atrium (Gonda Building, Subway Level)

10:30-11:50 am  Student Presentations  
   Geffen Auditorium (Gonda Building, Subway Level)

12:00-12:45 pm  Mentoring Lunch, catered by Pho Chau  
   Mitchell Student Center (Room 1-02)

12:45-1:30 pm  Mayo Clinic Tour led by Dr. Scott Schmidt, Chris Rackley, Dr. Wells  
   Begin at Mitchell 1-02, end on Mayo 16

1:30-2:00 pm  The Games! A-Mayo-zing Race  
   Mayo 16 (Pediatrics Floor)

2:15-3:45 pm  Poster Session  
   Phillips Auditorium (Siebens Building, Main Floor)

4:00-4:30 pm  Mentor and Student Speed Dating  
   Mitchell Student Center (Room 1-02)

4:30-5:00 pm  Awards Ceremony & Closing Reception, catered by Flapdoodles Ice Cream  
   Mitchell Student Center (Room 1-02)

*Conference officially ends at 5 pm on Saturday.*

5:15-5:45 pm  Generose Building Tour (Optional)  
   Generose Building  
   **Contact:** Dr. Scott Schmidt, 856-264-3093

7:30 pm  Comedy Show (Optional)  
   Goonie's Comedy Club, 7 2nd St SW, 507-288-8130  
   **Contact:** Dr. Sandra Rackley, 507-251-9192
Presentation Abstracts

Abdi, Ridwa  
UC Davis School of Medicine  
Mindfulness as medicine: The role of mindfulness in childhood/adolescent mental health

In the past decade there has been a global emergence of the practice of mindfulness in a myriad of settings ranging from U.S military training to its potential use as a tool to curb prison violence in the U.K. Most recently, mindfulness practice is gaining growing attention in the classroom as numerous schools across the country experiment with incorporating it into classroom culture. There is growing literature that aims to investigate the effectiveness of teaching children and adolescents mindfulness practices in an effort to improve their mental health, modify behavior, and provide them with lifelong tools that may extend beyond the classroom. My presentation will look at the existing research in this area and provide some insight into what this research tells us about the outcomes of implementing these practices in this population (e.g. school-based interventions) and its utility going forward.

Becker, Jessica E.  
Yale School of Medicine  
Harlan M. Krumholz, MD, SM; Gal Ben-Josef, MD; Joseph S. Ross, MD, MHS  
REPORTING OF RESULTS IN CLINICALTRIALS.GOV AND PUBLISHED ARTICLES: A CROSS-SECTIONAL STUDY

Background: The delayed or selective publication of clinical trials has led to publication bias in the medical literature, including in child psychiatry. To improve trial data availability, the 2007 FDA Amendments Act mandated results reporting to ClinicalTrials.gov within 12 months of trial completion for all FDA regulated drugs. We examined the completeness and accuracy of information on ClinicalTrials.gov by comparing clinical trial results reported on ClinicalTrials.gov with corresponding published articles.

Methods: We conducted a cross-sectional analysis of clinical trials published from July 1, 2010 through June 30, 2011 in journals with impact factor ≥10 that were registered and reported results on ClinicalTrials.gov. We compared trial results reported on ClinicalTrials.gov and within published articles for the following: cohort characteristics, trial intervention, primary and secondary efficacy endpoints, and adverse events.

Results: Overall, 95 of 96 trials (99%) were found to have at least one discrepancy in the trial results reported to ClinicalTrials.gov and corresponding published articles. Among primary endpoints, 132 (85%) were described in both sources, 14 (9%) were described only on ClinicalTrials.gov, and 10 (6%) only within articles. Results for 50 of 132 (38%) primary endpoints could not be compared because of reporting differences between the two sources (e.g., tabular versus graphs); among the remaining 102 endpoints, reported results were discordant for 21 (21%), altering interpretations for 6 (6%).

Conclusions: Our results put into question the accuracy of both ClinicalTrials.gov and the published literature, raising concerns about the usefulness of results reporting to inform evidence-based clinical practice and future research efforts.

References

Duncan, Jessie  
University of Illinois at Chicago  
Parent Management Training

The purpose of this presentation is to explain what Parent Management Training (PMT) is and how it has been utilized at the University of Illinois at Chicago Institute of Juvenile Research. PMT is a behavioral modification program that aims to implement changes in the home environment and give parents tools to communicate positively and effectively with their children with behavioral problems.
The connection between gastrointestinal symptoms and anxiety is well-cited in both medical literature and popular culture. Phrases such as “sick to my stomach” and “butterflies in my stomach” are commonly used. Furthermore, given the recent studies which suggest that the gut microbiota communicates with the brain and potentially modulates behavior, gastrointestinal symptoms are of particular interest to psychiatrists. Here we review and characterize the relationship between gastrointestinal symptoms and psychiatric disorders: do gastrointestinal symptoms precipitate mental illness, or vice versa? Is there perhaps no relationship at all? What place do gastrointestinal symptoms have in the broader context of so-called “somatization” symptoms of mental and emotional distress, particularly in the practice of cross-cultural psychiatry?
Poster Abstracts

Baddam, Suman  
Yale Child Study Center
Jessica Crawford, Jia Wu, Linda Mayes, Michael Crowley
1Child Study Center, Yale School of Medicine, New Haven, CT
2Stanford University School of Medicine

Exclusion hurts: Differential neural response to exclusion than inclusion events among childhood friends and strangers

Background: Peer relationships and friendships play a major role in the cognitive, emotional, and social development in childhood. (Hartup, 1996). Social rejection and acceptance are common in childhood and can be studied in the laboratory by a virtual game called Cyberball (William & Jarvis, 2006). We examined the neural response (P2 and slow wave) of exclusion and inclusion events in a Cyberball paradigm using best friend dyads and the role of friendship quality and psychological distress.

Methods: Forty-six children (twenty-three best friend pairs: Female Age = 10.86, SD = 1.32; Males Age = 10.66, SD = 1.28) were recruited via mass mailings along with their best friends. Initially, we evaluated the differences between inclusion and exclusion based friend and stranger ERPs. A linear mixed model ANOVA was used to test the effects of identity (friend vs stranger), friendship quality and psychological distress on the ERPs.

Results: Identity and friendship quality were not significantly associated with P2 (100-300 msec) and slow wave (450-900 msec) in inclusion or exclusion analyses. However, exclusion analyses, Identity (F1, 38 = 5.78, p = .022) and Identity x Psychological distress interaction (F1, 38 = 15.44, p = .000) were associated with P2 response. Similarly, Identity (F1, 38 = 6.76, p = .013) and Identity x Psychological distress interaction (F1, 38 = 10.795, p = .002) were significantly associated with slow wave in exclusion analysis.

Discussion: The results obtained suggest acceptance by a friend or a stranger in this virtual paradigm is equally amenable. Friendship quality did not differentiate the inclusion and exclusion trials but psychological distress plays a major role in effecting rejection-based relationships and not acceptance-based relationships.

Bommersbach, Tanner  
Mayo Medical School
Megan Chock; Dr. J. Michael Bostwick

Prevalence of the Communication of Suicidal Intent among Suicide Decedents in the Last Year of Life

Objective: This study explored what percentage of suicide decedents expressed suicidal ideation a month, six months, and a year before death in outpatient, inpatient, and emergency settings.

Methods: Using death certificate data in the Rochester Epidemiology Project, 86 adult suicide decedents from the years 2000-2009 in Olmsted County, MN, were identified and randomly matched with 258 age and sex-matched controls. A blind retrospective chart review was conducted to determine how often subjects expressed suicidal ideation to a healthcare provider in the year before death.

Results: From the sample of 86 suicide decedents, 73 individuals (84.9%) had contact with a health care provider in the 12 months before death, and 17 (23.3%) expressed suicidal ideation/intent one or more times. Of 51 decedents who had visits in the 6 months before death, 16 (31.4%) expressed suicidal ideation/intent. Finally, of 29 decedents who had visits in the month before death, 5 (17.2%) expressed ideation/intent. None of the 344 controls ever expressed suicidal ideation. Suicidal ideation or intent was expressed a total of 38 times by 17 different decedents in the year before death.

Conclusion: In a sample of 86 suicide decedents, 73 used healthcare in the year before death but less than a fourth expressed suicidal ideation or intent. For those voicing suicidality, the vast majority did so to physicians. Strikingly, not one control expressed suicidal ideation, suggesting that even though the majority of individuals who eventually kill themselves do not speak of intent to their doctors, those who do should be considered at extremely high risk.
Challa, Mamatha  University of Illinois at Chicago
Neha Mahajan BS, Dr. Mani Pavuluri MD PhD
Brain Mechanisms of Reward, Affect, Response Inhibition and Executive Control: Multi-Circuitry Model of Comorbid Pediatric Bipolar Disorder (PBD) and Substance Use Disorder (SUD)

Objective: Purpose of the poster is to present an integrative model of the overlapping pathological neural circuitry in patients with comorbid pediatric bipolar disorder (PBD) and substance use disorder (SUD).
Methods: Functional magnetic resonance imaging (fMRI) studies from our laboratory and other programs on adults and adolescents with PBD and/or SUD were used to construct an interface model of the neural domains of executive control, reward, and affect, and response inhibition.
Results: We developed a dual-circuit pathophysiological model of comorbid PBD and SUD. Specifically, the two major circuitry impaired are the affect-reward system and the executive control-response inhibition system. The affect-reward system is a frontostriatal circuit that involves interconnections between the VMPFC, the ACC, the ventral striatum, and the amygdala. The executive control-response inhibition system is a separate frontostriatal circuit that regulates the reward-affect system through its own interconnected circuit of the DLPFC, the DACC & PACC, the VMPFC, and the striatum. These two systems overlap at the hubs of the striatum, the VMPFC, and the ACC. The impairment of these circuits may explain the loss of impulse control and high reward-seeking behavior common in comorbid SUD and PBD.
Conclusion: Our model of the interface circuitry of reward and affect regulation in PBD patients gives insight into the biological causes of the comorbid nature of PBD and SUD. This framework can and should be used to help develop dual-nature interventional pharmacotherapy options for PBD adolescents.

Chambers, Tiffany  Alpert Medical School of Brown University
Elizabeth Lowenhaupt, MD, Kirsten Hull, MD
Agents of Barbara: A Medical Student Wellness Program Inspired by Live-Action Gaming

Alpert Medical School is exceptionally supportive and yet, being in medical school is still tough. For many students, medical school can lead to isolation, overwhelming stress and destructive survival oriented behaviors. In fact, nearly half of medical students in the United States suffer from burnout and 11 percent experience suicidal ideation during their training (Dyrbye, 2008). Agents of Barbara is a game-based wellness program designed to combat loneliness, burnout and stress while promoting mutual support, friendship and fulfillment. It’s about spending more time together while bettering ourselves and becoming more heroic. By the end of the 10-week program, players should have an arsenal of specific positive psychology tools for improving life, relationships and overall mental health. They also should be able to utilize game thinking to stay engaged and motivated while learning. During the program, players earn points and rewards for completing quests each week. Quests are based in positive psychology and include areas students expressed needing more support in. They are “Intelligence Gathering” to promote learning, “Alliance Strengthening” to promote social wellbeing, “Field Operations” to promote physical fitness and “Emotional Resilience” to promote self-compassion and mindfulness. Players also convene weekly to do a group mission facilitated by a psychiatrist in a plethora of topics including purpose, authenticity, vulnerability, mortality, and hope. The program is primarily in-person, but we utilize social media and a website to stay connected. https://sites.google.com/a/brown.edu/agentsofbarbara/home. 5 students piloted the program and we’re currently in the process expanding the program into a pre-clinical elective.

Cohen, Stephanie  Yale School of Medicine
Jillian Mulqueen, BA; Eduardo Oda; Zachary Stuckelman; Catherine Coughlin, BS;
Michael H. Bloch, MD, MS
Meta-Analysis: Risk of Tics Associated with Psychostimulant Medication

Objective: The Food and Drug Administration (FDA) currently requires that psychostimulants list tics and/or a family history of a tic disorder as a contraindication (methylphenidate) or significant adverse reaction (methylphenidate and amphetamines) to their use. The purpose of this study is to provide evidence-based information on treatment standards for children with ADHD who have or develop tics using a systematic review and meta-analysis.
Method: We conducted a PubMed search to identify all double-blind, randomized, placebo-controlled trials examining the efficacy of psychostimulant medications in the treatment of ADHD. We used a fixed effects meta-analysis with risk ratio of tics as our primary outcome. In secondary analysis we also examined absolute risk difference of tics between psychostimulants and placebo.

Results: We identified 17 studies involving 3068 children with ADHD. 6.7% of children receiving psychostimulants reported tics as an adverse effect in short-term trials. The risk of tics with psychostimulant treatment was similar to placebo in double-blind, randomized trials. Type of psychostimulant, trial design and duration of treatment did not significantly affect the association between psychostimulants and tics (RR=1.058, 95%CI: 0.817-1.370, p=0.67; ARD=0.000, 95%CI: -0.009-0.010, p=0.93).

Conclusion: There is no evidence from randomized, placebo-controlled trials that psychostimulant use is associated with an increased risk of tics in children with ADHD. The FDA should reconsider listing tic disorders as a contraindication to psychostimulant use in children with ADHD. Clinicians should consider re-challenging children who report new-onset or worsening tics with psychostimulant use as these symptoms are much more likely to be coincidental rather than caused by psychostimulant use.

D’Amelio, Giuseppe Washington University School of Medicine in St. Louis
Anne L. Glowinski MD, MPE; John Constantin, MD

Preliminary examination of M-CHAT performance in an English-speaking twin sample

Autism Spectrum Disorder is a pervasive developmental disorder with reported increasing prevalence rates. The Modified Checklist for Autism in Toddlers (M-CHAT) has shown success as a screening tool for early detection of ASD. However, recent studies have found that Spanish speakers fail the M-CHAT at a disproportionate rate. The purpose of this study is to conduct a preliminary examination of data to investigate the effect of language and ethnicity on M-CHAT performance. 304 twins were recruited through the Missouri (MO) Family Registry, which obtains yearly MO’ birth records. Data was collected from English speaking parents via mail and phone interviews. ANOVA and Chi Square analyses were conducted to investigate differences in M-CHAT performances based on ethnicity, race, and maternal education levels. Differences in M-CHAT performance based on ethnicity were not statistically significant. Differences in performance based on race were significant, F(4,263)=6.576, p=.00, but this was due to an outlier score. Differences in performance based on maternal education were significant, X²=15.753, p=.046 particularly responses to questions 18, 20, and 21. These results support previous findings that maternal education levels may relate to M-CHAT performance. This examination found that children whose mothers graduated high school or received an associate’s degree had higher failure rates compared with children whose mothers had some college or higher education. This preliminary examination suggests that variables such as maternal education should be controlled for in the final study, which includes Spanish speaking California twins, in order to truly examine the effect of language on M-CHAT performance.

Gits, Cohon Washington University School of Medicine in St. Louis
Christina N. Lessov-Schiagar, Rachel A. Paul, Josh S. Shimony, Cynthia E. Rogers

Maternal Smoking, Neonatal Brain Alterations, and Risk of ADHD in Preterm Children

Objectives: Very preterm birth and prenatal nicotine exposure (PNE) are associated with increased risk of behavioral disorders in children, particularly ADHD. The aims of this study are to assess the differences in neonatal brain structure and behavioral outcomes in preterm children born with and without PNE.

Methods: Infants born at <30 weeks gestation were recruited from the St. Louis Children’s Hospital Neonatal Intensive Care Unit within the first 72 hours of life. MRI scans were performed at term equivalent age (gestational age 36-42 weeks) to obtain morphological and diffusion tensor imaging data. At age 2 and 5 years, child ADHD symptomatology was assessed using structured interviews and parent questionnaires.

Results: Twelve preterm infants with PNE were propensity score matched with 26 unexposed preterm controls. Infants with PNE had significantly higher mean diffusivity and lower fractional anisotropy in the corpus callosum and lower mean diffusivity in the left superior temporal lobe. Brain volumes, measures of surface morphometry, and behavior outcomes did not differ significantly between the two groups.
Conclusions: Differences in regional diffusion associated with PNE in preterm infants was observed. It is possible that PNE mediates further structural and behavioral differences that could not be detected by the methods used. A larger sample size could increase the power of the study and further investigation and follow up is needed.

Horst, Robert
UC Davis School of Medicine
Ridwa Abdi
The Klingenstein Third Generation Foundation Fellowship Program in Child and Adolescent Psychiatry at the University of California, Davis

Description of KTGF Fellowship Program at UC Davis including longitudinal and summer course. Emphasis in student leadership, mentorship and clinical experiences.

Howell, Kaitlin
Harvard Medical School
John R. Petee, MD; Sabine Hildebrandt, MD
1Department of Psychiatry, Brigham and Women’s Hospital Div. of General Pediatrics/Dpt. of Medicine
2Boston Children’s Hospital, Harvard Medical School
Scholarly Personal Narrative of Recovery after Trauma

Scholarly personal narrative (SPN) is a method combining scholarly writing and personal narrative, which is used in many academic and professional fields. SPN acknowledges that personal experience contains valid information worthy of study. The approach begins with a personal narrative from which scholarly themes are identified. Literature on these themes is examined and reflected upon to provide insight into related experiences of a larger population. SPN is considered especially powerful for giving voice to victimized populations and minorities who are often studied by academics but rarely have the opportunity to share their own narratives in a scholarly form.

In medicine, SPN is an important approach to narrative medicine. This project aims to show that SPN can also be a valuable tool in the field of psychiatry. This specific SPN will depict the experience of a child and adolescent seeking restoration of various aspects of life lost through extensive trauma. These aspects include academic recovery and achievement when beginning college with only a first-grade education due to forced non-attendance of school, recovery of family structure after being taken away from biological parents in early adolescence, and personal healing after extensive abuse and trauma.

While this approach is limited by describing the experience of only one person, scholarly themes such as resilience, spirituality and faith, and forgiveness will be generalizable to other trauma survivors’ recovery. As few scholarly narratives exist on the subject of recovery after trauma, this project brings a unique, new perspective to any professional interacting with trauma survivors.

Key, J.C.
Icahn School of Medicine at Mount Sinai
T. Tavassoli1, P.M. Weinger1, A. Kelevzon1
1Seaver Autism Center for Research and Treatment, Department of Psychiatry, Icahn School of Medicine at Mount Sinai, New York, NY
Development of a sensory reactivity assessment for minimally verbal children with neurodevelopmental disorders

Sensory hyperreactivity, hyporeactivity and sensation seeking is a new criterion for autism spectrum disorder (ASD) in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). However, currently there is no consensus on how to reliably measure sensory reactivity, particularly in minimally verbal children. This study aims to examine a novel objective assessment of sensory reactivity, the Seaver Autism Sensory Assessment (SASA). The SASA and Short Sensory Profile (SSP) were used to measure sensory reactivity in children with ASD (n=18) and typically developing (TD) children (n=13) (2-6 years). The SASA combines direct observation and caregiver interview to assess sensory hyperreactivity, hyporeactivity, and seeking behaviors in vision, hearing and touch. All participants successfully
completed the SASA observation. There were significant differences in SASA total scores between the ASD and TD groups (p < .001). SSP scores were highly correlated with SASA scores (r = .66). Data collection is ongoing. Our results demonstrate feasibility of the SASA in a sample of minimally verbal children with ASD. Our findings suggest that a combination of direct observation and caregiver interview may be most sensitive in identifying sensory reactivity in this population. Future studies will examine sensory reactivity in other neurodevelopmental disorders.

Mulvey, Bernard J Washington University School of Medicine in St. Louis Chunzi Peng and Andrey Anokhin
Adolescent History of ADHD Symptoms Predicts Associated Electrophysiological Differences in the Anterior Cingulate Cortex of 26-Year Olds

In the performance of behavioral tasks, event-related potentials (ERPs) are reliably evoked by response preparation, response execution, response inhibition, and behavioral monitoring and awareness. Respectively, these brief electrographic waveforms are known as the Go N2, the Go P3, the No-Go N2/P3 complex, the error-related negativity (ERN), and the error positivity (Pe). In case-control studies of childhood ADHD, impairments of the Go N2/P3, the No-Go N2/P3, and Pe have been reliably demonstrated. Results on the ERN in childhood ADHD have been more ambiguous. In contrast to ERP findings in clinically diagnosed ADHD children, the relationship between ERPs and subclinical ADHD symptoms has not been examined. Moreover, very little research exists regarding electrophysiological differences in young adults with either current or past ADHD symptoms. In this study, it was hypothesized that similar ERP impairments would exist in young adults with a previous history of ADHD symptoms at age 14—the period after which ADHD is thought to be developmentally "decided"—and that these ERP differences would scale with the severity of the previously experienced symptoms. With regards to the ERN, it was hypothesized that ADHD symptom history would not correlate to ERN strength, as the best-designed studies of the contradicting literature on this topic suggest that the ERN is not altered in ADHD at any age.

Patel, Nikhil “Sunny” Mayo Medical School, Harvard School of Public Health
Brina Einstein, M.S.
Impacts of Mentorship in a Therapeutic Day School: A Model Program at the Manville School

Mentors serve as important non-parental role models to demonstrate positive social skills for children and adolescents. School-based mentorship programs for general populations of adolescents in a recent meta-analysis have shown little impact on academic performance, emotional or behavioral indicators. Despite equivocal evidence, high risk children and adolescents—particularly suffering from emotional or behavioral conditions—benefit from mentorship programs and result in improved academic achievement, reduction in problem behaviors (e.g. delinquency), and improved psychological and physical well-being. The individual mentorship program at the Manville School of the Judge Baker Children’s Center is an important program for at-risk youth with emotional, behavioral and learning problems. Mentors from Harvard Medical School, Harvard School of Public Health, and Harvard Graduate School of Education participate in this longitudinal, yearlong program with weekly/hourly meetings with mentees. Additionally, there is a formal bi-weekly didactic curriculum for mentors to provide a foundation to understand the social, psychological, and medical complexities for children at the Manville School. The curriculum includes interdisciplinary talks from clinical psychologists, social workers, admissions coordinator, and parents of Manville students, nurses, and occupational therapists.

As medical/education trainees, interactions with children and adolescents occur in clinical/classroom milieu which provide a limited glimpse into their lives. This mentorship program provides the opportunity for a deeper, richer therapeutic relationship to be formed between the mentors and the mentee. Mentors benefit from an increased empathic connection, towards children and adolescents at Manville School, to help inform future careers as budding physicians and educators.

References
BD and ASD, two of the most impairing pediatric behavioral diagnoses, are linked by the severe irritability that can result from the inability to adapt to changing rewards or expectations. Cognitive flexibility, or reversal learning, measures this ability to adapt to fluctuating stimulus-reward contingencies. In this study, cognitive flexibility was assessed using the Cambridge Neuropsychological Testing Automated Battery (CANTAB) intra-dimensional/extra-dimensional set-shifting task (IDED), and the KSADS-PL was used to confirm diagnoses. Past studies suggest that BD and ASD youth are impaired on measures of cognitive flexibility, but none have directly compared the two populations.

Methods: Three groups of children and adolescents (7-17) were enrolled: (1) children with ASD, (2) children and adolescents with BD who met DSM-IV-TR criteria for at least one episode of mania or hypomania, and (3) typically developing controls (TDC).

Results: No significant associations were found in a three-group comparison of trials, errors and latency on simple and compound reversal stage shifts. When the group was restricted to BD and ASD participants with a comorbid KSADS-PL ADHD diagnosis, compound reversal trials and errors were found to be significantly different, with BD subjects performing worse than ASD.

Conclusions: Reversal learning differences are not significant between a BD and ASD population, but BD subjects with comorbid ADHD performed significantly worse than ASD with ADHD. Future studies should continue to examine ways in which CANTAB data can best be used to understand the cognitive basis of irritability in these two populations.

Yu, Haining
Harvard Medical School

White matter tract integrity and externalizing symptoms in 12 year olds with history of early childhood neglect.

Background: The aim of this study was to determine whether white matter integrity is related to the development of externalizing symptoms in early adolescence in a sample of institutionalized, previously institutionalized and never institutionalized children in Bucharest Romania.

Methods: DTI data from 69 participants (ages 8-11 years) in the Bucharest Early Intervention Project (BEIP) were selected for the Tract Based Spatial Statistics (TBSS) analysis in order to investigate potential white matter abnormalities due to institutional rearing during early development. Participants included children randomized out of the institution who were placed into foster care (FCG; n = 23, mean age = 9.87, standard deviation (SD) = 0.63 years), children randomly assigned to remain in institutional care (CAUG; n = 26, mean age = 9.69 years, SD = 0.93 years), and children who had never been in institutional care (NIG; n = 20, mean age = 9.80, SD = 0.52 years). Four DTI parameters, Fractional Anisotropy (FA), Mean Diffusivity (MD), Axial Diffusivity (AD), and Radial Diffusivity (RD) were included in analyses. Externalizing symptoms examined included ADHD, conduct disorder, and oppositional defiant disorder. Symptoms scores were tallied from parent/guardian interview responses to the Diagnostic Interview Schedule for Children-IV (DISC-IV). Gender, percent time in institution, and subject group (CAUG, NIG, FCG) were assessed as covariates in sub-analysis of data to determine the any modifying effect that gender and institutionalization have on the association between white-matter tract integrity and development of symptoms of externalizing conditions.
Travel Arrangements

Incoming Travel
Taxi and Shuttle services will be waiting at RST to meet all incoming flights. These do NOT require a reservation. For assistance please visit the Ground Transportation Desk in the terminal lobby.

Shuttle to Downtown $15 per person  
Taxi to Downtown $30 flat rate + $5 for each additional passenger

Departing Rochester
When leaving Rochester, you might consider these services.

Taxi Cabs
Med City Taxi (507) 282-8294  
Yellow Cab Taxi (507) 282-2222

Shuttles
Med City Transportation (507) 282-8294  
Go Shuttle (507) 280-9270

Limousines / Sedans
Destiny Limousine (507) 206-7437  
Gold Crown Limousine (507) 285-9528  
Best Ride Black Car (507) 529-4222  
Star Limousine (507) 281-0969