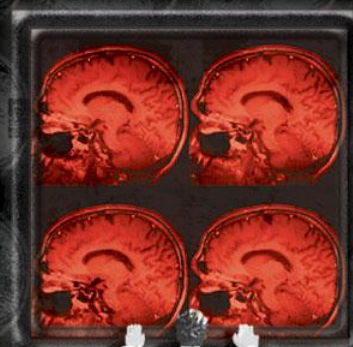


# Searching for quantitative biomarkers of ASD using computational approaches and rapid assessment fMRI

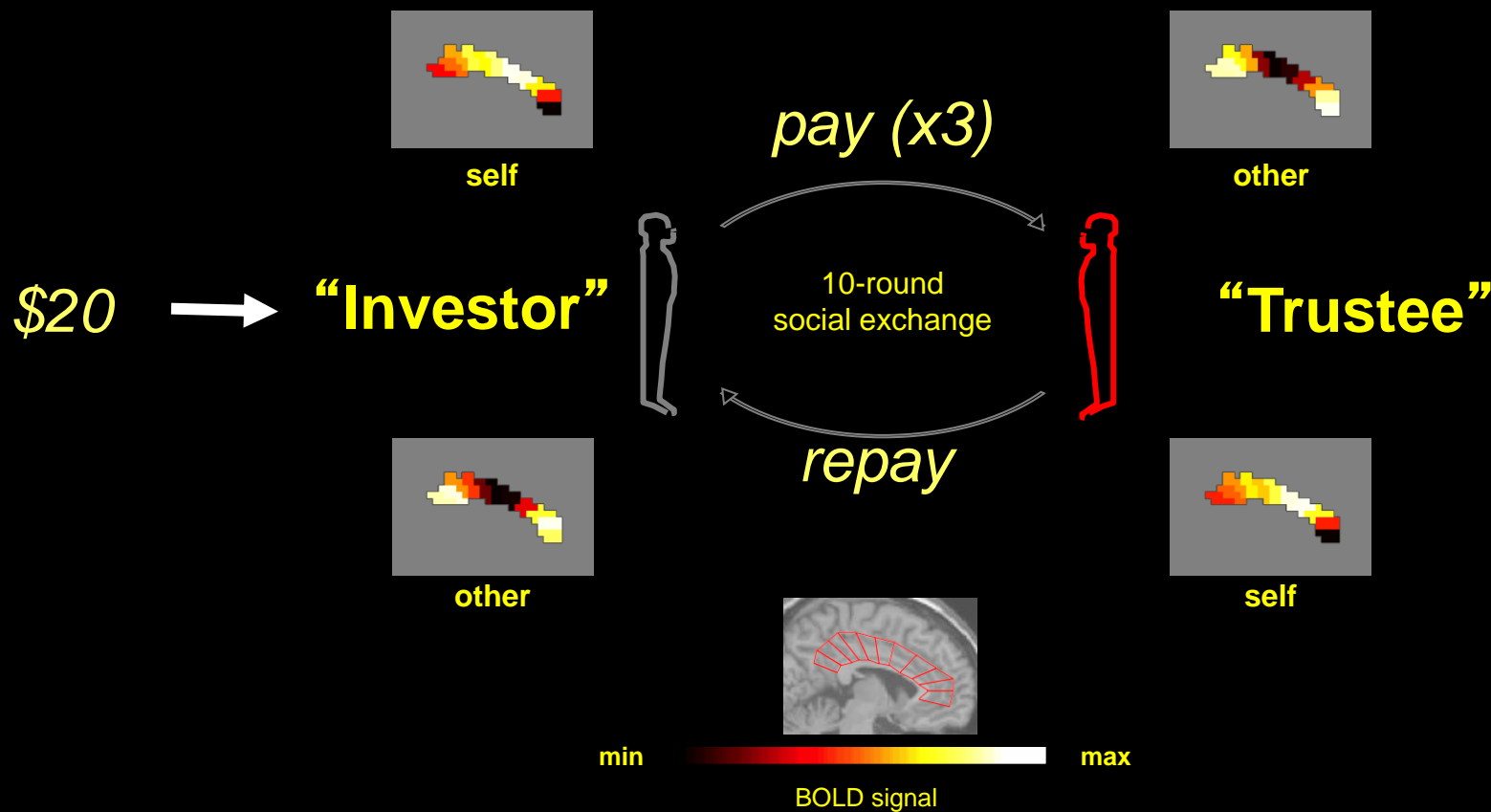
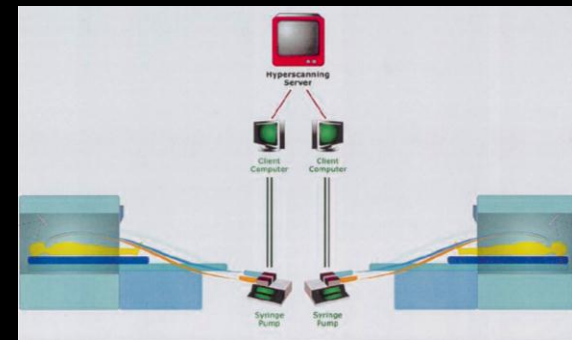
Kenneth T. Kishida, PhD

Research Scientist  
Human Neuroimaging Laboratory, and  
Computational Psychiatry Unit  
Virginia Tech Carilion Research Institute, Roanoke, VA

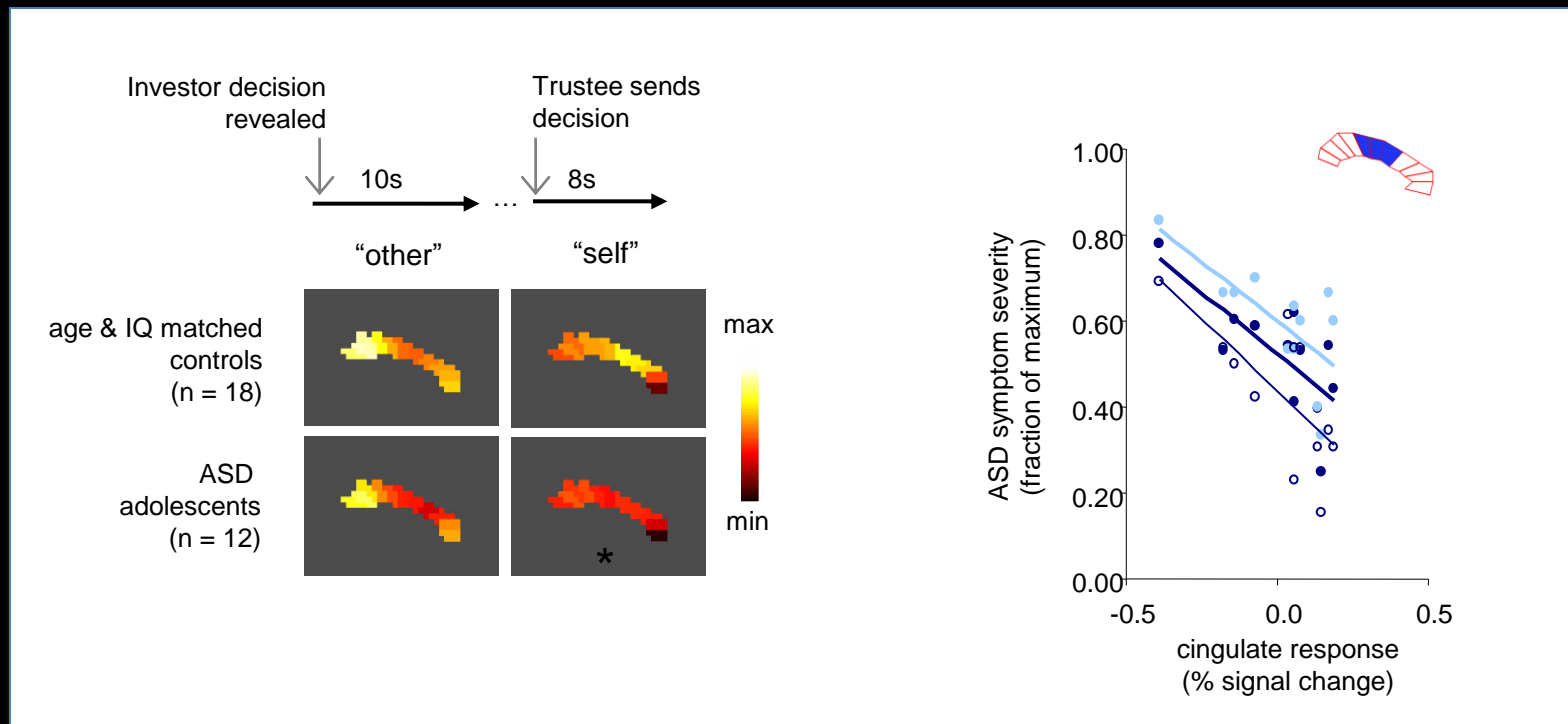
<http://research.vtc.vt.edu/employees/ken-kishida/>



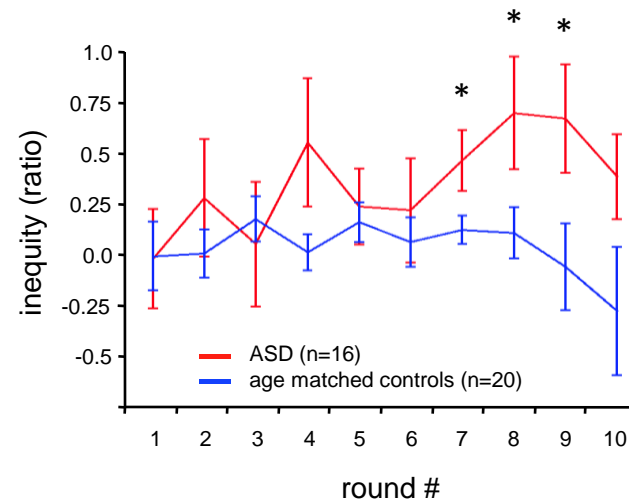
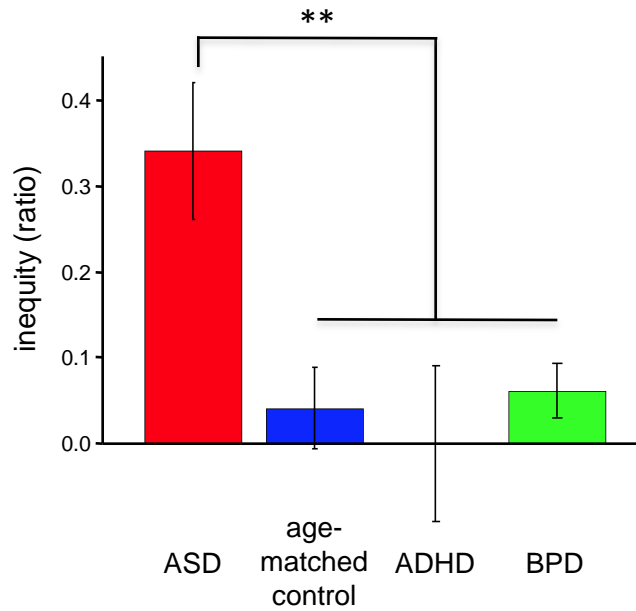
# quantifying social exchange with the 10-round 'trust' game...



# diminished self-responses in ASD

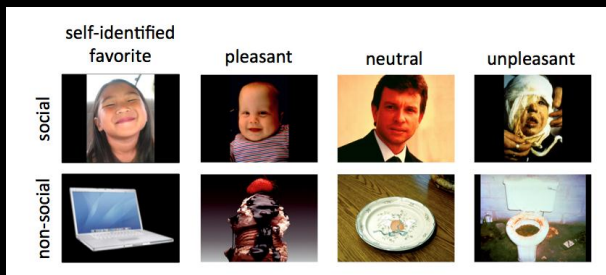
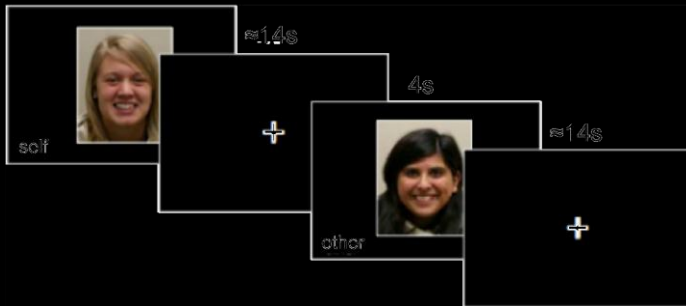


# behavior in the trust game... inequity goes towards ASD trustee's partner

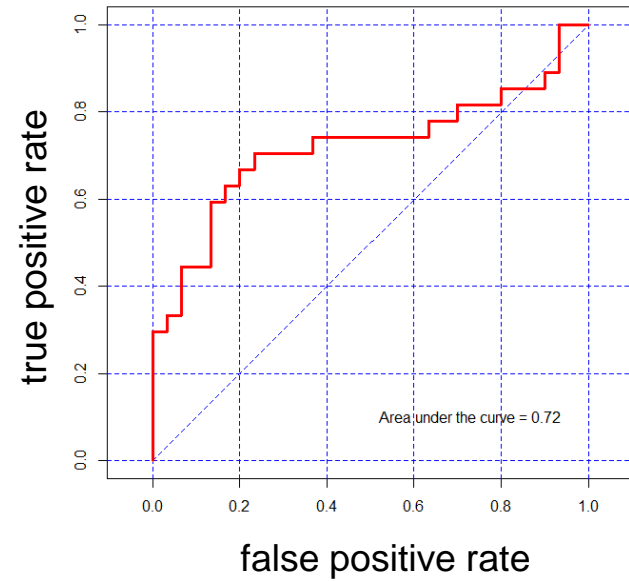
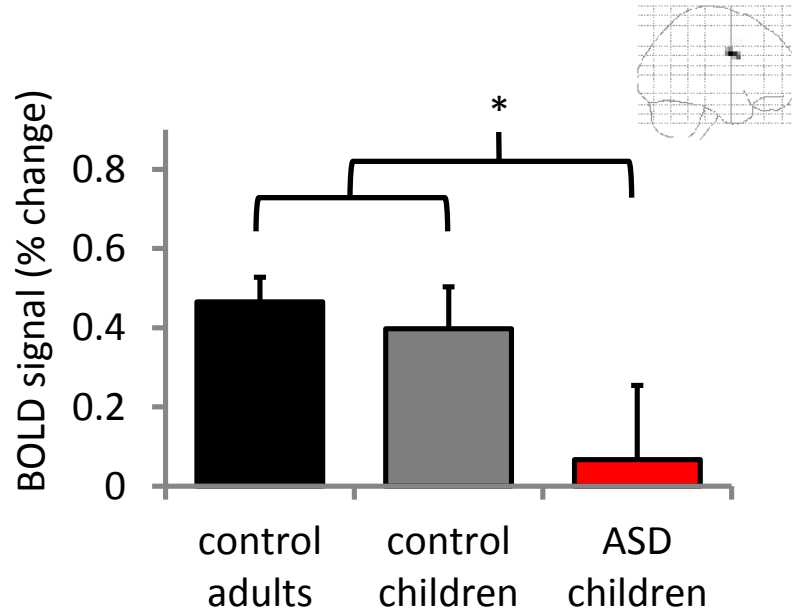


objective:

develop rapid fMRI based assays for classifying ASD neural subtypes in children

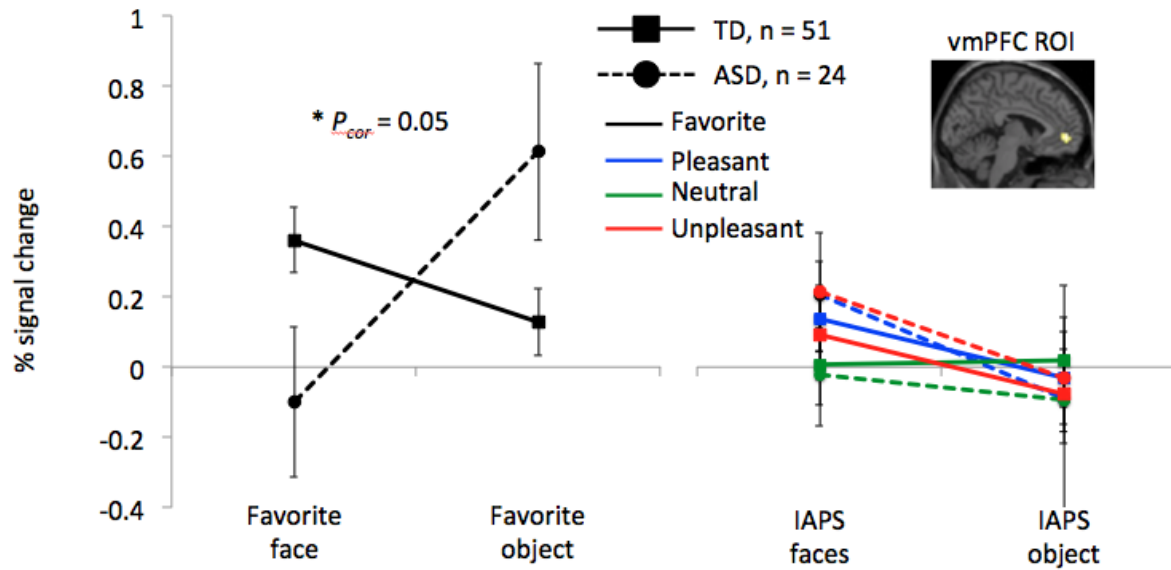


## Peak BOLD signal change in the MCC to a single presentation of a “self image”



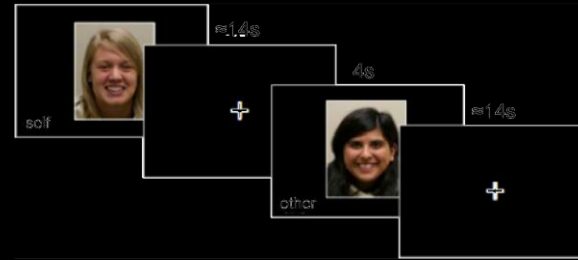
- 35 adults
- 30 typically developing children
- 27 children diagnosed with ASD

# Single-shot, vmPFC, "favorite face"

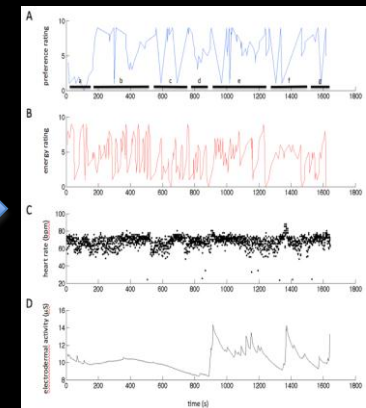
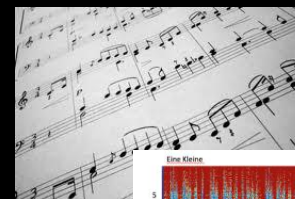
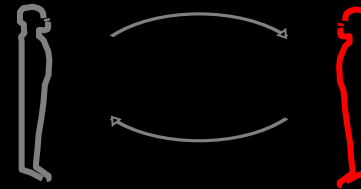


# future directions...

- rapid assessment using images, (pictures, movies)
  - (passive visual responses)
- assessment using auditory stimuli
  - (passive auditory stimuli, i.e., classical music)
- social exchange game
  - increase sample size



	self-identified favorite	pleasant	neutral	unpleasant
social				
non-social				





# acknowledgements

P. Read Montague, PhD

Director HNL and CPU, at the VTCRI

Josephine Cruz, MD and James Lu

Baylor College of Medicine

Diane Treadwell-Deering, MD

Texas Children's Hospital, Houston, TX

NEMO Software development team:

Nathan Apple, Mark Ross, Jae Shin, and  
Jason White

NIH (PRM, KTK), Kane Family Foundation  
(PRM), Autism Speaks (PRM), Charles A. Dana  
Foundation (PRM), Institute for Society  
Culture and Environment (KTK, AS)

VT Collaborators...

Angela Scarpa, PhD

Susan White, PhD

Co-Directors Virginia Tech Autism Clinic

Michelle Patriquin

Virginia Tech, (now at UAB)

Bruce Friedman, PhD

Betsy McDonnell-Herr, PhD