Navigating NC TraCS: Examples from my research

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….or how $2k can shape your career
Pilot 2k

- “to assist clinical and translational researchers in implementing a proposed study or moving a research project forward by providing rapid access to funds that will support almost any aspect of promising and innovative translational research”
- Monthly submission deadlines
- Faculty, non-faculty researchers, postdoctoral trainees, medical residents, clinical fellows, and doctoral students all eligible.
ASD has a 4:1 ratio
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Reduced attention to faces

Circumscribed Interests
ASD has a 4:1 ratio

These have been characterized through eye tracking

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Circumscribed Interests

These have been characterized through eye tracking

Reduced attention to faces

What about girls?
Study One

- Direct replication of paired preference paradigm (Sasson & Touchstone, 2014)
- Equal representation of ASD males and females
- Very different pattern of results
- Equal inclusion of females essentially wiped out diagnostic effects
Study One

ASD Females

ASD Males

Harrop et al., 2018. Autism Research
Study Two

- Adapted Visual Search Paradigm (Sasson et al., 2008, 2011) to include *male, female* and *neutral* images based on findings that interests in ASD females fall along traditional gender lines (Harrop et al., 2016; Hiller et al., 2014; Sutherland et al., 2017).

- Again, large diagnostic effects were not found

- Number of sex effects and male specific findings
Visual Search Arrays

Courtesy of Noah Sasson (UT Dallas)
Visual Search Arrays

Courtesy of Noah Sasson (UT Dallas)
ASD Male

Harrop et al. (2018). JADD
ASD Female
What my 2k led to

- An add-on grant from an ASD foundation
- 2 papers in press, 2 under review, 2 in prep
- 7 conference presentation/posters
- Podcast covering our findings
- Presented findings at NIH Future Research Leader Conference
- Chance to train and mentor students and RAs
- Collaborations outside my primary mentor
- Application for NIMH K01 Career Development Award
- Funded KL2 Career Development Award
KL2 Career Development Grant

- “designed for individuals who need mentorship and additional training to achieve their research and career goals.”
- “develop a personalized training plan that takes into account the applicant's unique background, research interests and prior training.”
- Replicates format and review process to NIH K awards – how likely is this person to succeed in 2-3 years?
KL2 Goals

- Understand whether our eye tracking findings are truly a protective effect in females?
- Extend to a younger age range to see when in development this effect emerges
- Combine eye tracking with EEG to understand whether there is a dissociation between attention and neural processes – is this a protective effect or learnt strategy?

Female Protective Effect
- Seen early and throughout development

Learnt Compensatory Strategy
- Develops later in development
KL2 Research

- Identify common profiles based on neural markers, sex, and behavior
- Identify sex differences in neural markers
- Understand how neural markers associate with behavior and treatment
Year 1
Grant proposals; K Seminars; TraCS Study Section; EEG Training; Neuroscience Courses; Readings; Conferences; Research ethics; Women's health
EEG data cleaning, processing and analysis; paradigm development; training RAs and students

Year 2
RCR; Mentoring training; K Seminars; Grant proposals; TraCS Study Section; Biostats Training; CFE; Research ethics; Conferences; Readings
Recruitment and data collection; EEG data cleaning, processing and analysis; Data analysis; Treatment data; Dissemination

Year 3
RCR; Mentoring training; K Seminars; Grant proposals; TraCS Study Section; CFE; Conferences; Readings
Recruitment and data collection; EEG data cleaning, processing and analysis; Data analysis; Dissemination; Treatment data
What my KL2 allows me to do

- 75% protected time
- Promotion to Research Assistant Professor
- New mentors and collaborations
- Access to TraCS resources
- K Seminars
- Time (and money) for more training
**Caveats**

- Only 75% protected time (K01 can be up to 100%)
  - BUT this forces me to think about the remaining 25%
- Non-transferable
- Not as much funding for research and training
- 2/3 years rather than 4/5
Timeline of funding

- Pilot 2k funded Oct 2015
- Add on grant (foundation) funded June 2016
- NIMH K01 scored and discussed Oct 2017
- KL2 funded April 2018
- NIMH K01 scored and discussed July 2018
What I have learnt

• Talk to TraCS – they **want** to fund you.
• Submit a 2k – it takes minimal time and can lead to a lot!
• Great way to build collaborations and develop ideas
  • External collaborations
  • Internal collaborations
Collaborators and Mentors:
Brian Boyd (KU)
Noah Sasson (UT Dallas)
Julia Parish-Morris (CHOP)
Robert Schultz (CHOP)
Aysenil Belger (UNC-Chapel Hill)
Kevin Pelphrey (GWU)
Pamela Ventola (Yale)
Michael Crowley (Yale)
Shafali Jeste (UCLA)

Families and Children

Research Students:
Shuting Zhang (UNC-Chapel Hill now UCSF)
Sallie Nowell (UNC-Chapel Hill)
Desi Jones (UNC-Chapel Hill now UT Dallas)

Funders:
NICHD
NC TraCS Institute
Autism Science Foundation
Any questions?

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