The Communication Team
Summary of Work and Future Directions

Presented by Yana Yunusova
Lead, Communication Research Team
Our Mission

To advance theoretical foundations of human communication and to implement discoveries into novel assessments and interventions for individuals with communication disorders.
Presentation to the International Scientific Advisory Committee (ISAC)

The Team

- Speech Language Pathology & Speech Science
- Computer Science & Engineering
- Experimental Psychology
- Audiology & Hearing Science
- Nursing
2011-2014 IMPACT

- 75 peer-reviewed papers
- 5 best practices guidelines
- 79 trainees

Presentation to the International Scientific Advisory Committee (ISAC)
Research Grants

IMPACT 2011-2014

Research Grants

- $808,000
  Administered at TRI (49%)

- $836,000
  Expended at TRI (Administered elsewhere, 51%)

$1.644 M
Healthy, Aging

Those Experiencing Hearing Loss across the lifespan

Those Experiencing Negative Impacts
- Parkinson’s Disease
- Stroke
- Traumatic Brain Injury
- Dementia & Alzheimer’s Disease
- Cerebral palsy
Objective is to develop novel therapies for aphasia

DISCOVERIES & DEV’TS
• Changes in the brain after the PCA aphasia therapy
• Incorporated into an app /Phono Com

FUTURE
• Establish usability of Internet-based therapy
• Determine the effect of therapy intensity on outcomes and the brain

Naming Deficit in Aphasia
Communication Team Project

PI: Rochon

Presentation to the International Scientific Advisory Committee (ISAC)
Objective is to develop a novel intervention for motor speech disorders using augmented visual feedback.

**DISCOVERIES & DEV’TS**
- Definition of articulatory targets
- Novel gaming scenarios

**FUTURE**
- Identify articulatory targets for PD and stoke patients
- Validate efficacy and usability with clinical studies

**PIs**
Yunusova, Baljko, Faloutsos
**Objective:** is to improve speech recognition in dysarthria using models of physical articulation and develop communicating robots.

**DISCOVERIES & DEV’TS:**
- The addition of articulatory information significantly improves speech recognition.

**FUTURE:**
- Develop speech transformation software that makes unintelligible speech more intelligible.
- Deploy autonomous robots in long-term care facilities.
**Better Hearing for All**
Communication Team Project

**Objective** is to develop eHealth audiology services for clients across life span and improve the design of hearing aids.

**DISCOVERIES & DEV’TS**
- Trad vs. WWW-based adjustments of hearing aids: comparable outcomes
- Audiologists: central role in promoting teleaudiology

**FUTURE**
- Optimize hearing instruments to enhance emotional information and music

**Pls**
Pichora-Fuller, Singh, Russo, Rudzicz
Objective is to improve mobility/balance through better hearing augmentation.

DISCOVERIES & DEV’TS
- Balance control: hearing plays an important role
- Older adults will prioritize their physical safety over communicative success

FUTURE
- Understand the mechanisms underlying the link between hearing loss and falls

PIs
Campos, Pichora-Fuller, Gordon
Objective is to develop assessments and interventions for individuals with emotional processing deficits.

DISCOVERIES & DEV’TS
- Novel assessment tools (e.g., T-RES & LATTE)
- A novel treatment which incorporates signing

FUTURE
- Development of guidelines for management of patients with these deficits
- Test Singing Therapy with patients with PD

PIs
Russo, van Lieshout, Ben-David

Emotion Processing
Communication Team Project

Presentation to the International Scientific Advisory Committee (ISAC)
Objective is to improve the way patients with communication disorders are cared for in health facilities.

**DISCOVERIES & DEV’TS**
- Positive changes in nurse-patient communication outcomes achieved in a pilot study.

**FUTURE**
- Expand to different settings and populations, e.g., stroke & dementia.

**PIs**
- McGilton, Rochon, Pichora-Fuller, Shaw, van Lieshout, Ben-David

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**Care Delivery**
Communication Team Project

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