Students’ ability to represent numerical quantities in symbolic form is a necessary foundation for mathematical competence. Past research suggests pervasive student difficulties. Existing hypotheses cannot be explored with current methods in mathematics education alone. MBE provides an opportunity to inform such hypotheses by coupling mathematics education with relevant disciplines such as cognitive neuroscience.

Incorporating MBE principles, how can cognitive neuroscience research inform educationally relevant questions about how students understand variable?

**Potential for Future Studies:**
- Basic cognitive neuroscience research on neural representations of variable
  - Similar and/or different to what is known about number?
  - Inform specific hypotheses emerging from mathematics education using cognitive neuroscience methods
  - Do students’ represent variables in an imprecise and overly generalized way?
  - Perhaps there are distinct, precise mappings that ‘compete’ during problem solving?
References

