Outline

1. Introduction
   1. Statement of problem
   2. Summary of Method
2. Method
   1. Investigation
   2. PCA
3. Classifiers
   1. LDA
      1. First establish baseline
      2. Optimizing # of prin comps
      3. Marginal predictions
      4. Group and Condition with marginal subject
      5. Joint classes
      6. Adding up 3 marginals
   2. KNN
      1. LOOCV with little fine tuning
      2. Marginal predictions
      3. joint
      4. Optimize # of prin comps
   3. MclustDA
      1. Marginals w/ cv optimize comps
         1. Computationally expensive
      2. Did not compute joint
      3. EDDA does not make sense, proved not a good fit
   4. Random Forest with prin comp
      1. Marginals
      2. Joint – very expensive ~ 1.5 hours
   5. Random Forest without prin comps
      1. Marginals
      2. joint
      3. Use cv to determine opt nvar
4. Results from classifiers
   1. RF w/out cp best marginals
   2. LDA with 21 comps on joint classes best performing joint model
5. Final model selection
   1. Build up three part model from best marginal classifiers
   2. Build LDA with 21 comps and joint classes
      1. Winner
      2. Expand on model characteristics
      3. Estimate test accuracy
      4. Explain how to get predictions on test data
6. Conclusion