Can be one or two participants — no more. It should have an evaluation component that is task and human centered. There should be a focus on a problem of visualization or interaction that can be evaluated in terms of how well it puts people in touch with information (i.e. the quality of the algorithm is not the main criterion for evaluation, unless the algorithm directly relates to visualization). It should be about mapping data to display effectively.

**Project Suggestions** (you can also propose a project yourself).
- Design a prototype for any application that interests you – genetics, text similarity, stock market trends. You should research this and do a task analysis to justify your design.
- Multi-step color sequences. Use saturation or lightness steps in a color sequence to get more identifiable values. Test. E.g. 4 shades or purple, 4 shades of blue, 4 shades of green, 4 shades of red, 4 shades of yellow, 4 shades of grey. (20 steps)
- Implement interactive gen draftsman’s plot vs parallel coordinates. Finding clusters
- Discretized glyphs – how small can they be? **
- Visual following of linear features: what is important? – rapid exposure.
- Uncertainty representation using 3D textures and color steps. **
- Two flow layers. Spatial frequency separation using fuzzy traces.
- Animated scales for ocean flow. Use Z buffer
- Particles and runoff (might use the GPU) based on a DEM.
- Oriented animated particles. Is orthogonal better for animated conjunction. **
- Oriented animated particles. Is animation better than static for conjunction search. **
- Stepwise vs not stepwise color sequences and accuracy.
- Tight loop mixed initiative interaction (with AI?).
- Spring graph layout without node intersections.

**Types of Research**
1) Proof of concept prototype + discussion & description - (iterative design)
2) Proof of concept + evaluation by interviews
3) Do a comparison between different modes of interaction/representation.
4) Do a formal study. E.G. a variant on pre-attentive processing to test a theory

**Evaluation criteria:** originality, systematic study, scholarship, quality of system implementation, appropriateness of evaluation, quality of evaluation. Data analysis depends on design. Help available for factorial designs.

**Write-up** – like a short conference paper/ intro/ method/results discussion

**Dates:**
1) Project Topic selected March 25. (your name, title, a 200 wd statement: email delivery)
2) Meet with Prof March 26-27
3) In class presentations. April 14, onward. *Partly* about project
4) Meet with Prof 2 April TBD
5) Project Due: December 16th.