**Summary**

1. **Statistical analysis** of fMRI data is used to locate brain activity and generate **brain activation maps**
2. **CB-fMRI** activation maps retrieval return **activation maps** that have similar activation patterns to the given one

**Introduction**

- **Functional Magnetic Resonance Imaging (fMRI)**
  - To study brain response to tasks
  - Non-invasive
  - Detect **signal changes** in areas of the **brain** where neuronal activity is varying
  - Brain activation statistical maps show brain activity
- **Content-based (CB-) fMRI retrieval**
  - To manage **neuroimaging data sharing**
  - To **retrieve** studies relevant to a «query» **brain activation map**

**Image collection**

- 8 experiments: morality, recall, romantic, visual, study, house, recallFree, auditory
- 359 subjects in total
- 10 Probabilistic Independent Component Analysis (PICA) components per subject

**Conclusions**

- This poster presents a **novel method** for fMRI brain activation map retrieval
- It is **difficult** to assess when a fMRI brain activation map is relevant for a given query, therefore the evaluation method has limitations
- The results are promising but there is a big difference between experiments

**Methods**

- **Feature extraction**
  - Map layout descriptor
  - Whole–brain ROI–wise
- **Similarity comparison**
  - Euclidean distance
  - Histogram intersection (HI)

**Results**

**Evaluation**

- A retrieved brain map is relevant to a query if they both belong to the same experiment
- Runs combine features and similarity measures

**Acknowledgments**

This research was supported in part by the Intramural Research Program of the National Institutes of Health (NIH), National Library of Medicine (NLM), and Lister Hill National Center for Biomedical Communications (LHNCBC).