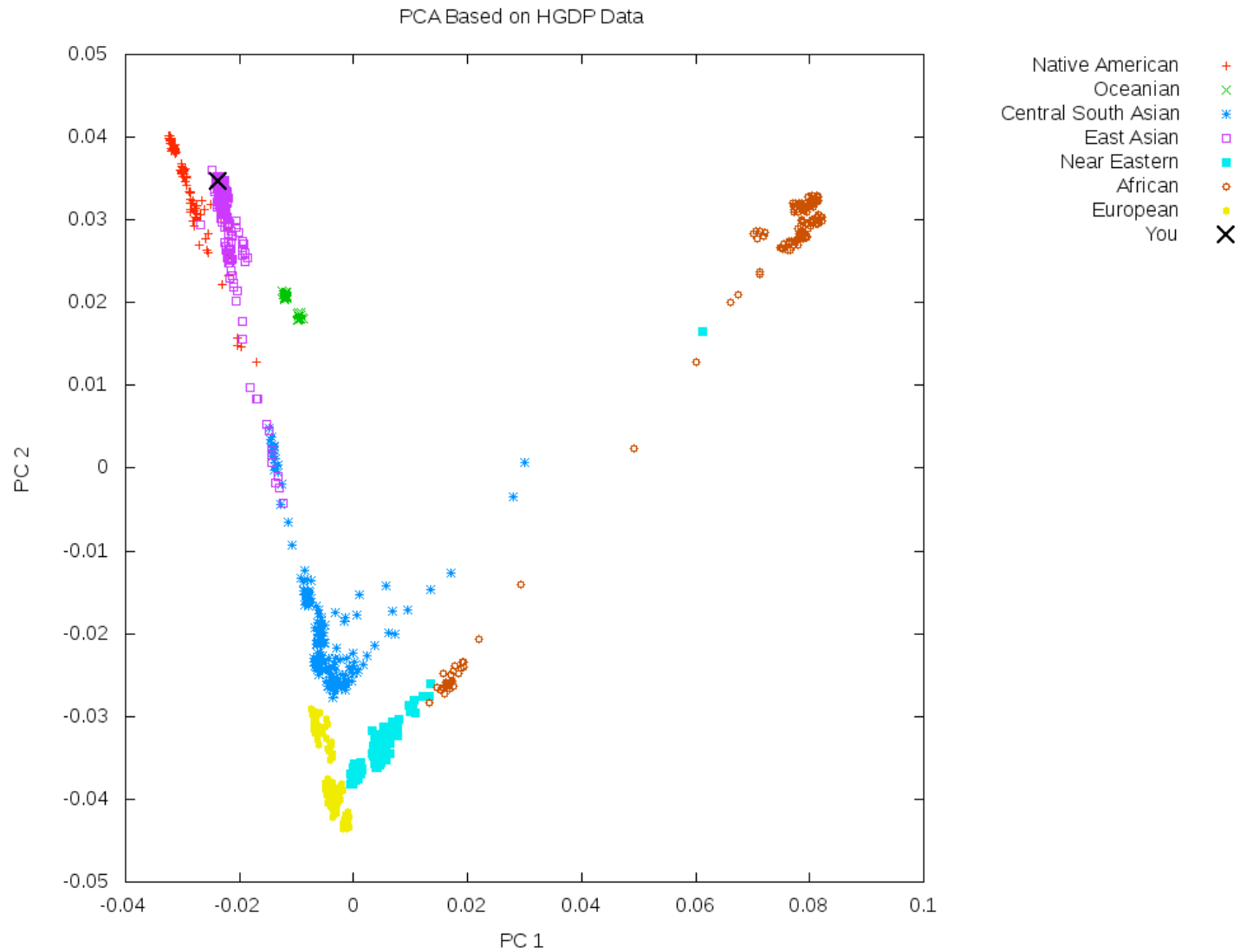


Ancestry Exercise Results

PCA of HGDP + Stuart



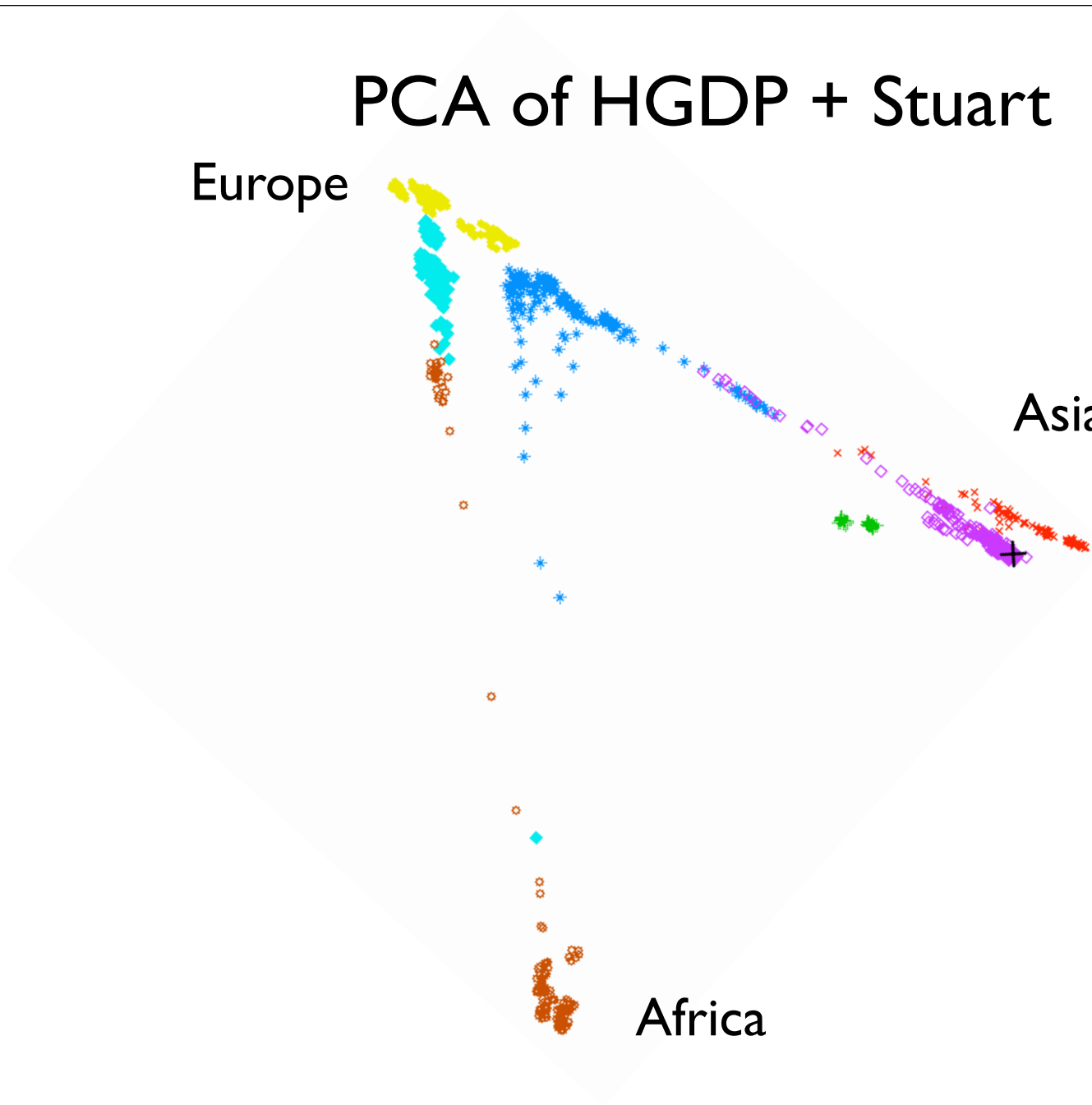
PCA of HGDP + Stuart

Europe

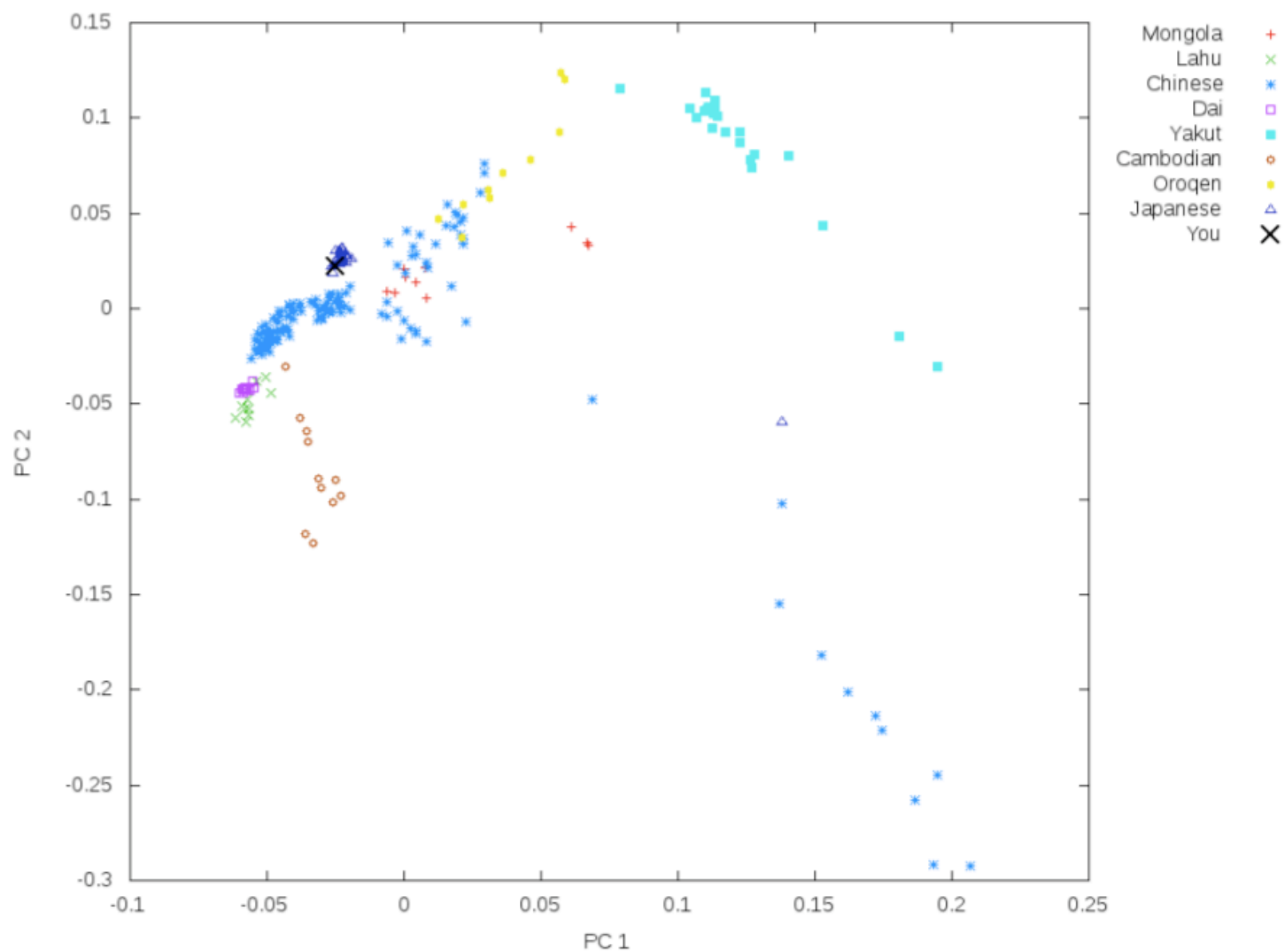
Asia

Africa

- Native American +
- Oceanian x
- Central South Asian *
- East Asian □
- Near Eastern ■
- African o
- European ●
- You X

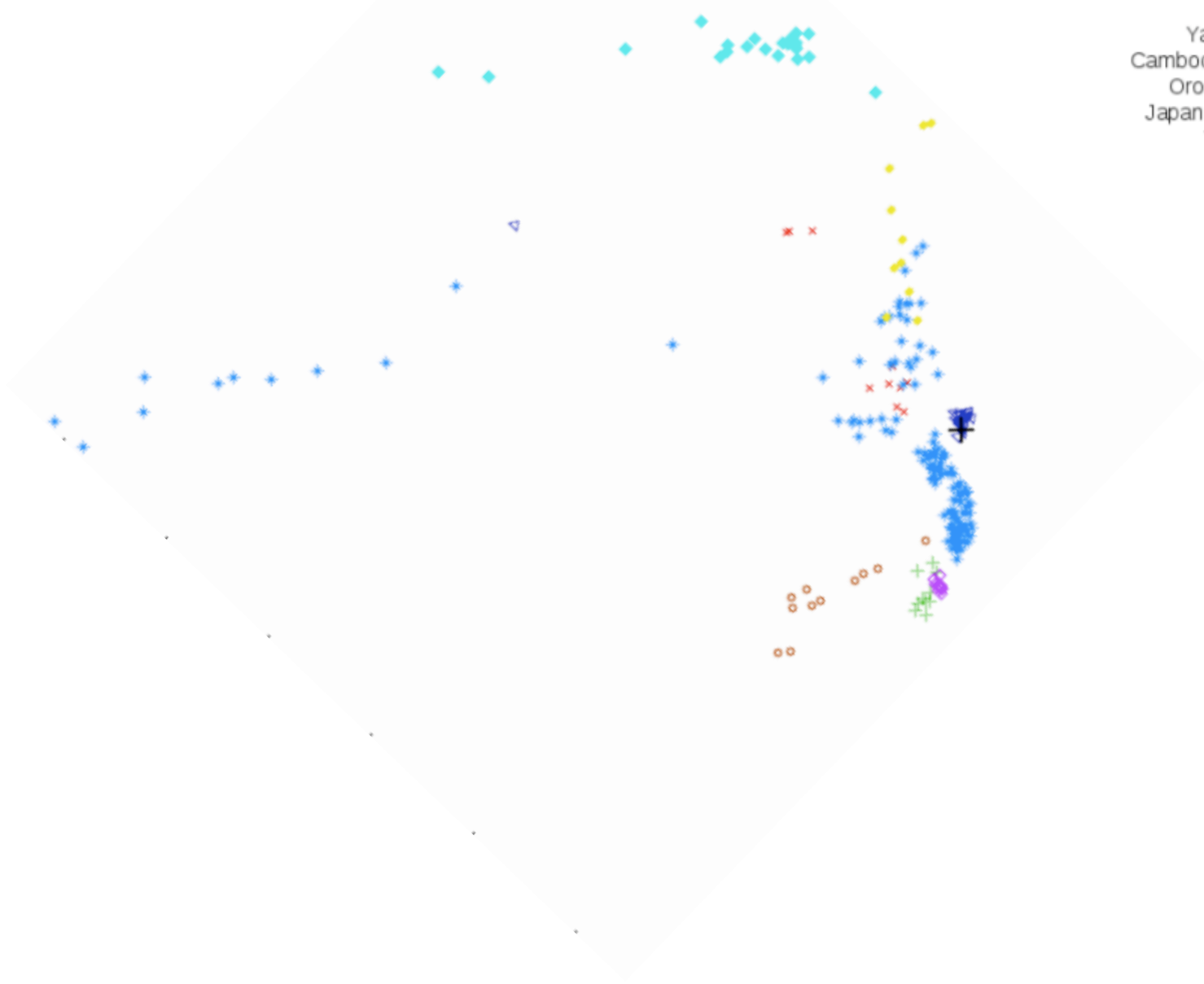


PCA of East Asians + Stuart

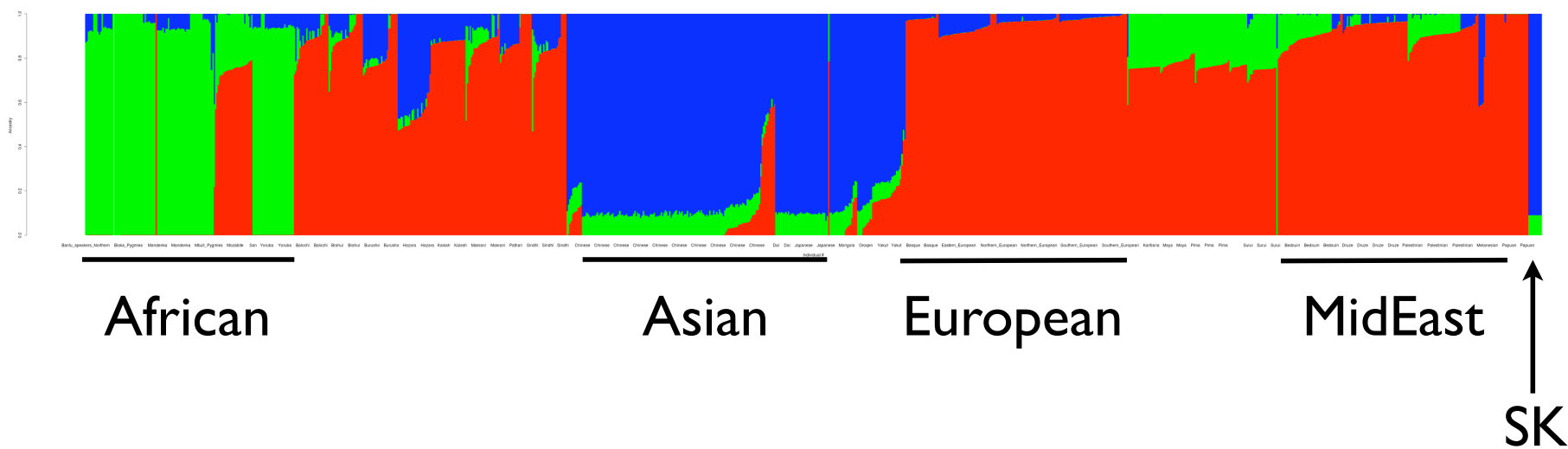


PCA of East Asians + Stuart

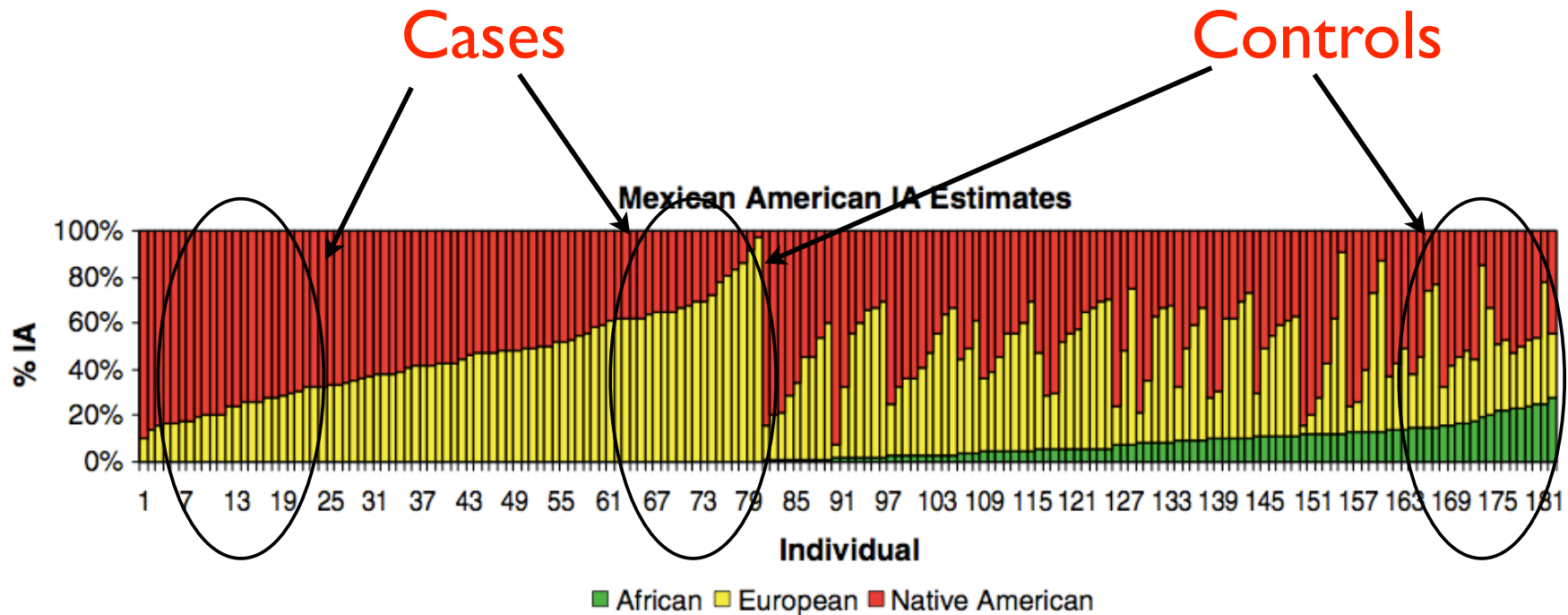
- Mongola +
- Lahu x
- Chinese *
- Dai □
- Yakut ◆
- Cambodian ○
- Oroqen ●
- Japanese △
- You X



Admixture among HGDP



Population stratification



Source of confounding in genetic association studies

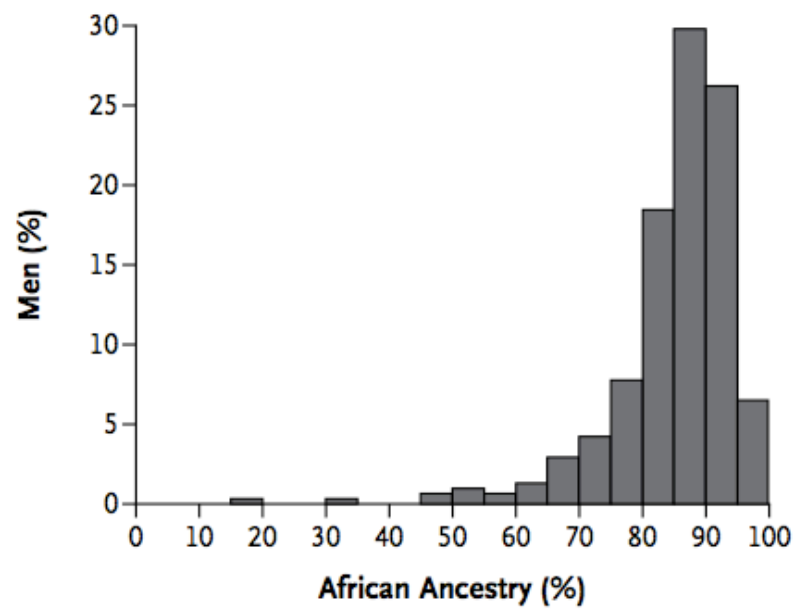
The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

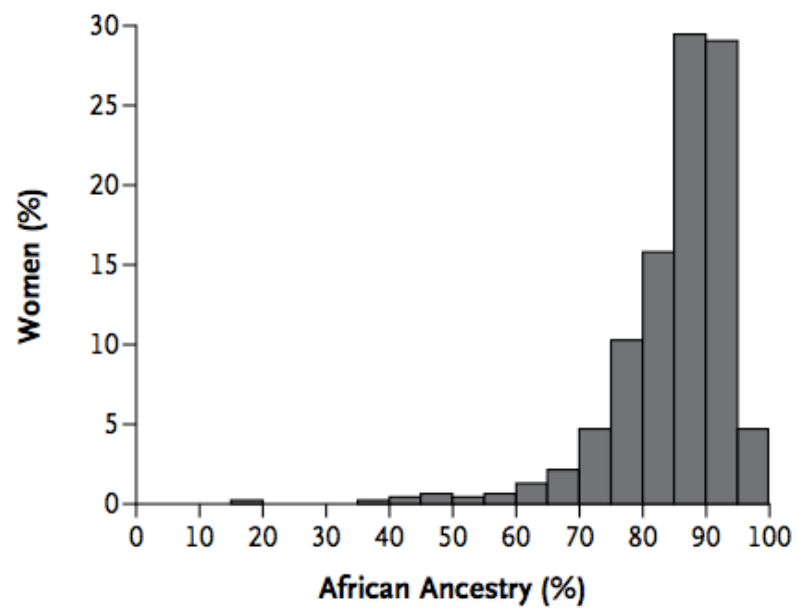
Genetic Ancestry in Lung-Function Predictions

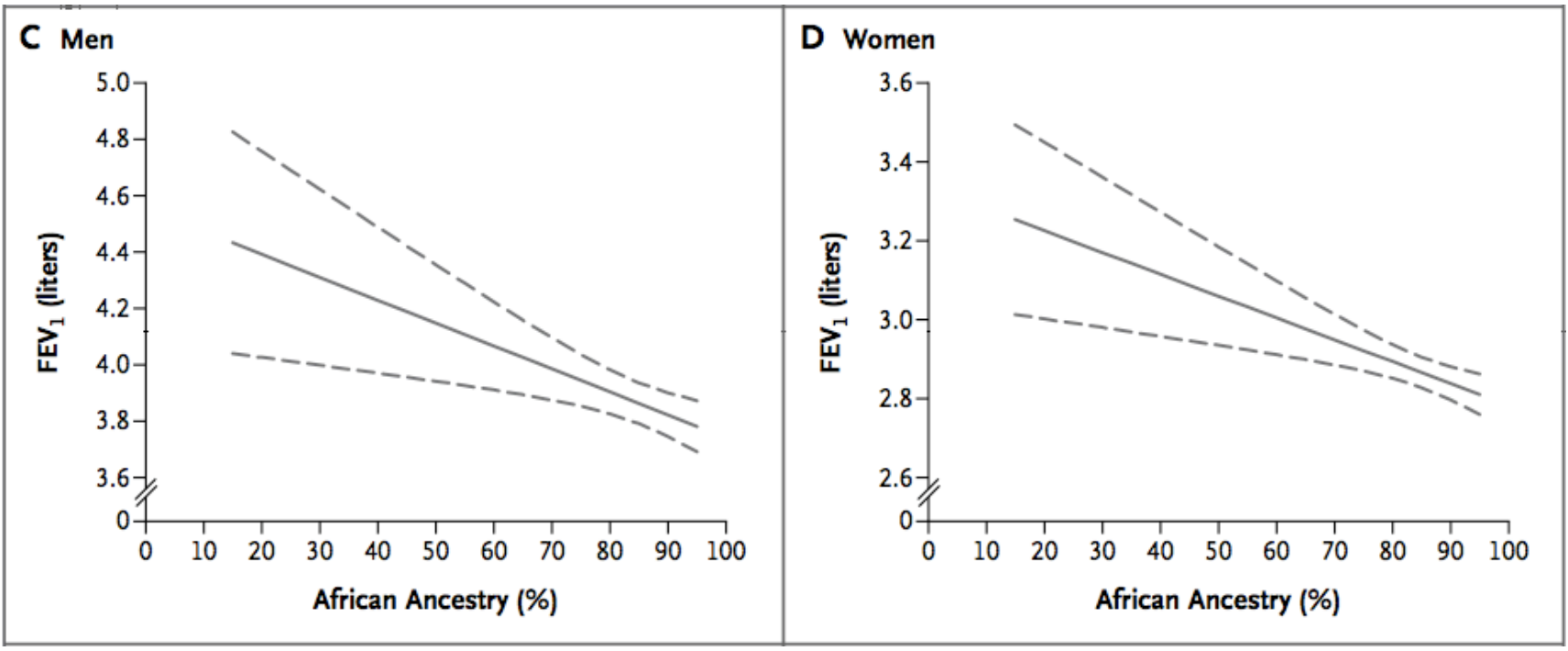
Rajesh Kumar, M.D., Max A. Seibold, Ph.D., Melinda C. Aldrich, Ph.D., M.P.H.,
L. Keoki Williams, M.D., M.P.H., Alex P. Reiner, M.D., Laura Colangelo, M.S.,
Joshua Galanter, M.D., Christopher Gignoux, M.S., Donglei Hu, Ph.D.,
Saunak Sen, Ph.D., Shweta Choudhry, Ph.D., Edward L. Peterson, Ph.D.,
Jose Rodriguez-Santana, M.D., William Rodriguez-Cintron, M.D.,
Michael A. Nalls, Ph.D., Tennille S. Leak, Ph.D., Ellen O'Meara, Ph.D.,
Bernd Meibohm, Ph.D., Stephen B. Kritchevsky, Ph.D.,
Rongling Li, M.D., Ph.D., M.P.H., Tamara B. Harris, M.D.,
Deborah A. Nickerson, Ph.D., Myriam Fornage, Ph.D., Paul Enright, M.D.,
Elad Ziv, M.D., Lewis J. Smith, M.D., Kiang Liu, Ph.D.,
and Esteban González Burchard, M.D., M.P.H.

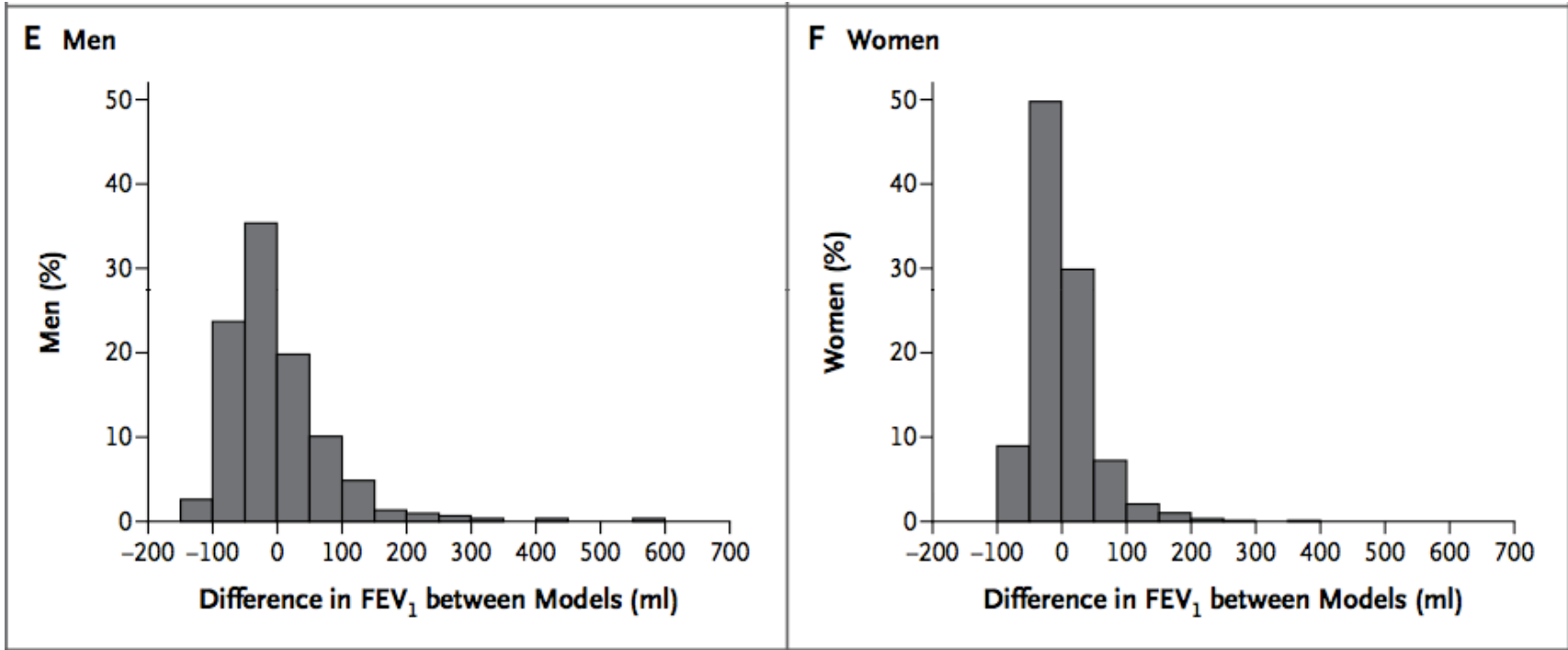
A Men



B Women



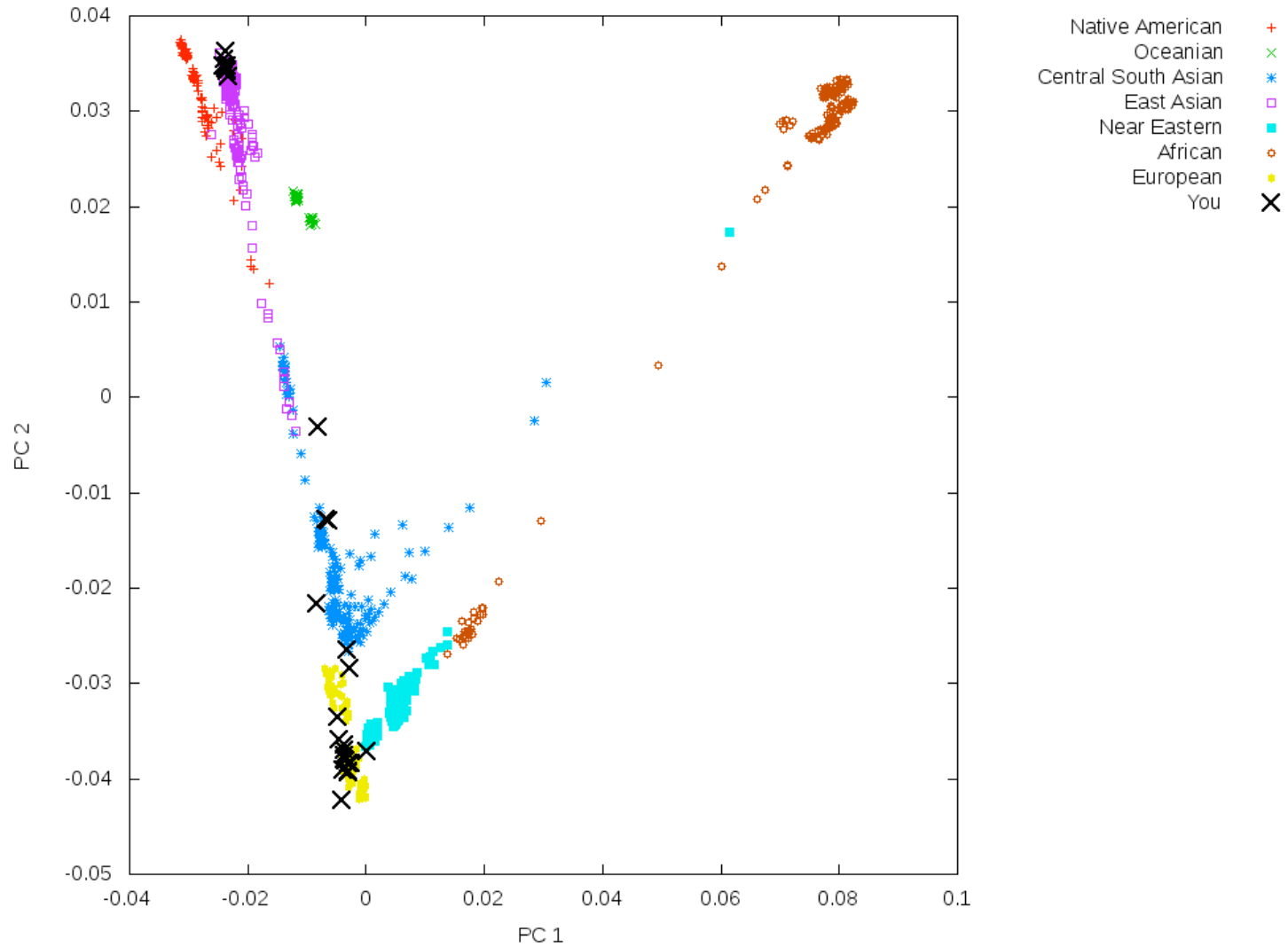




Running PCA on class...

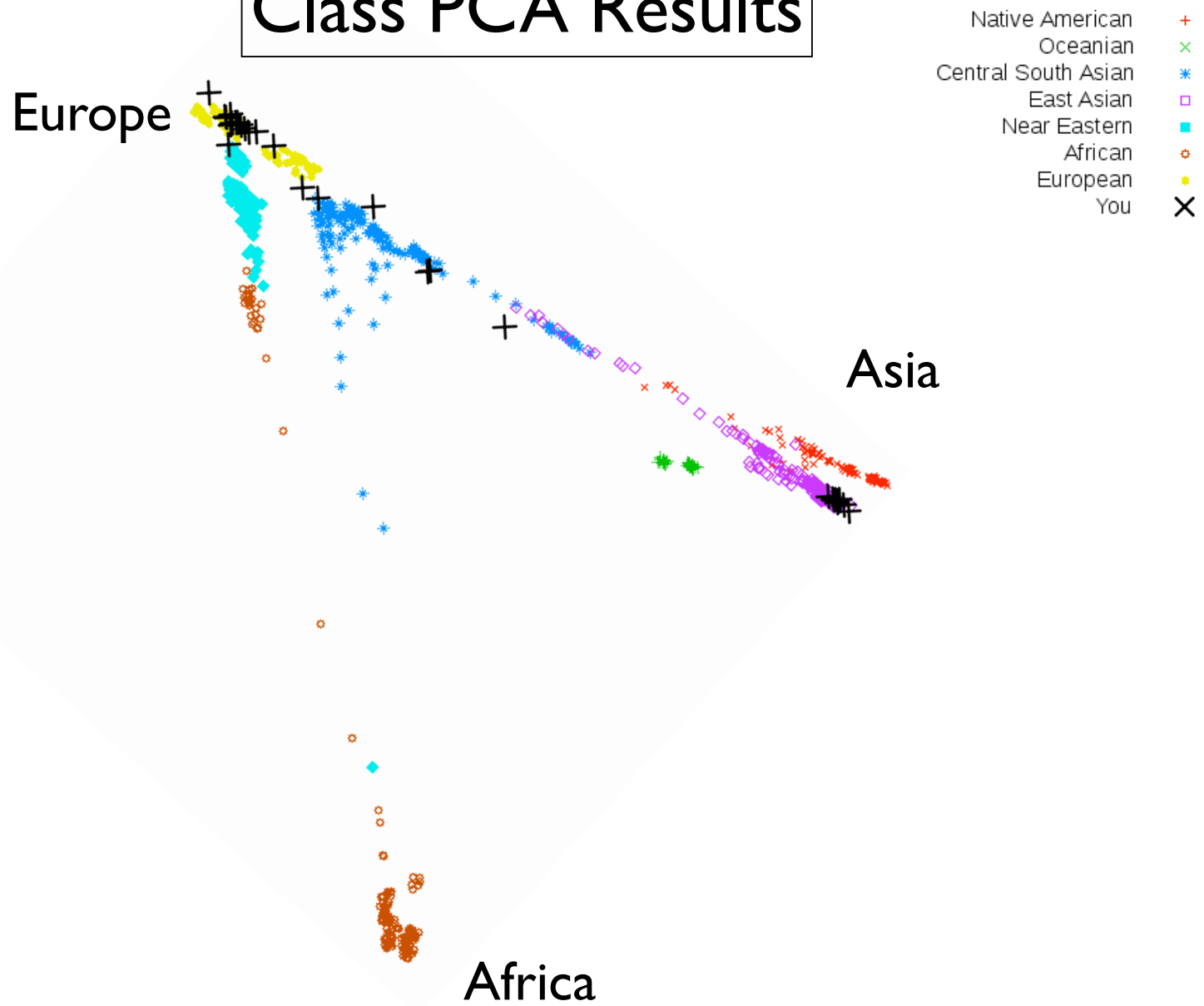
Class PCA Results

PCA Based on HGDP Data



http://gene210.stanford.edu/data/Ancestry/full_class.html

Class PCA Results



http://gene210.stanford.edu/data/Ancestry/full_class.html