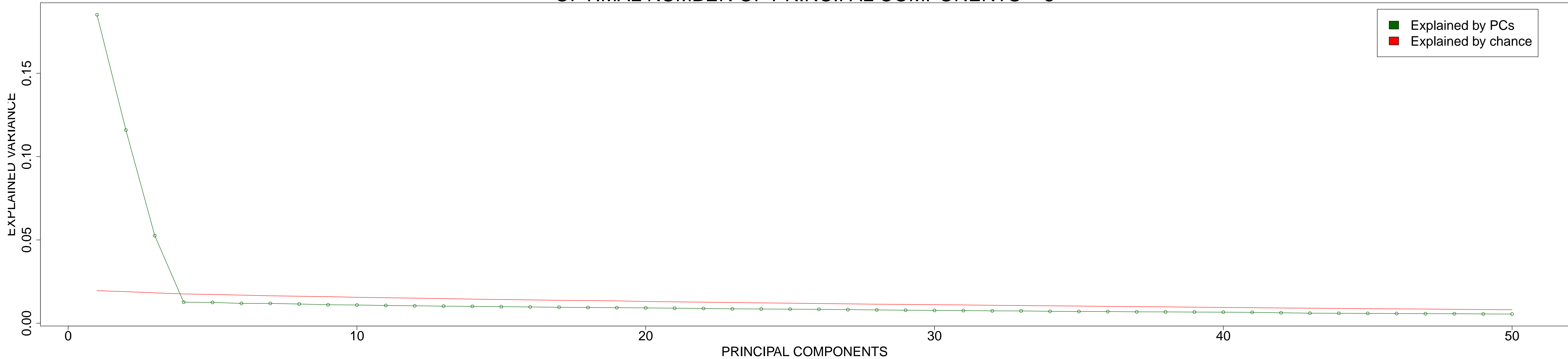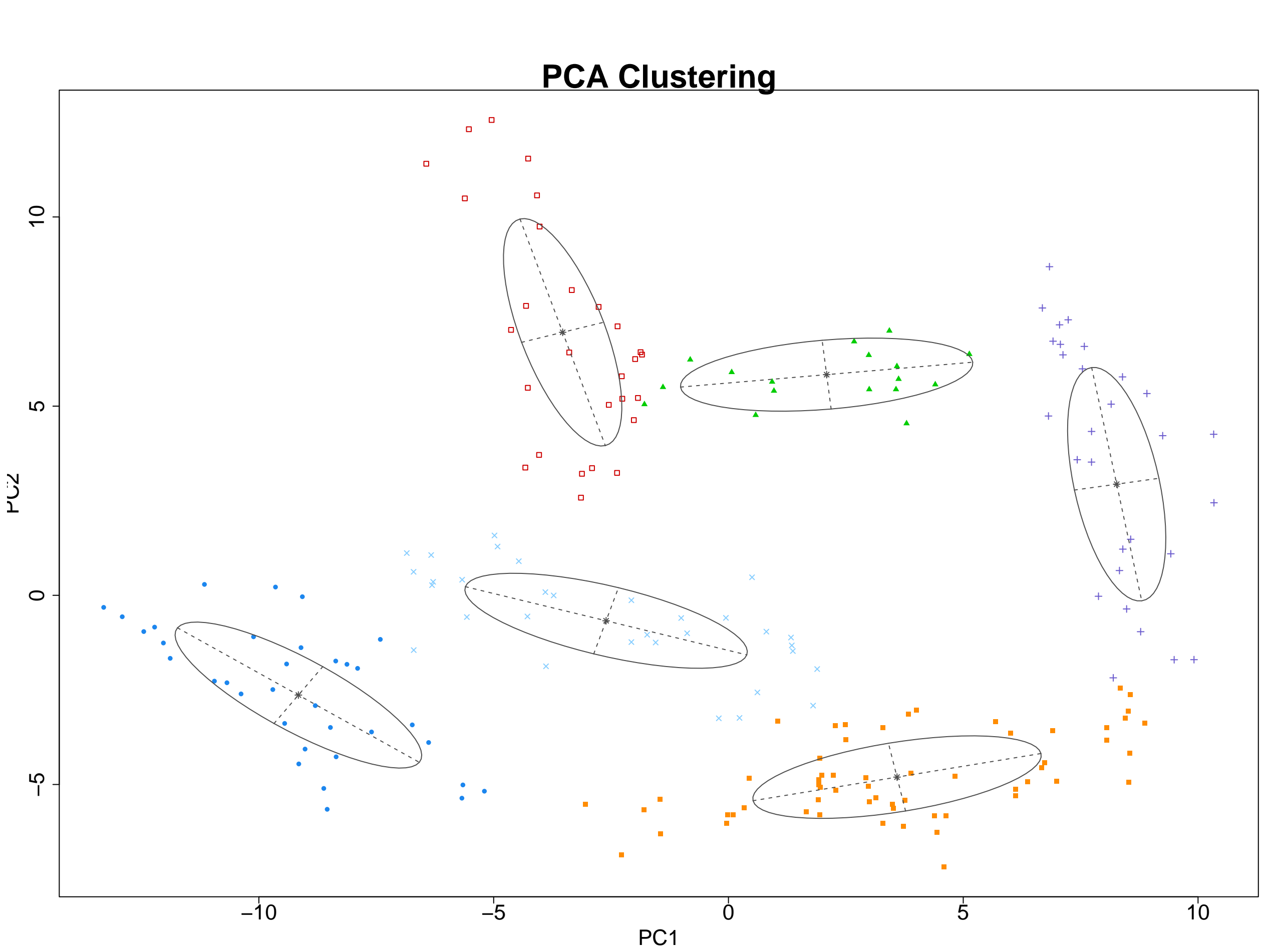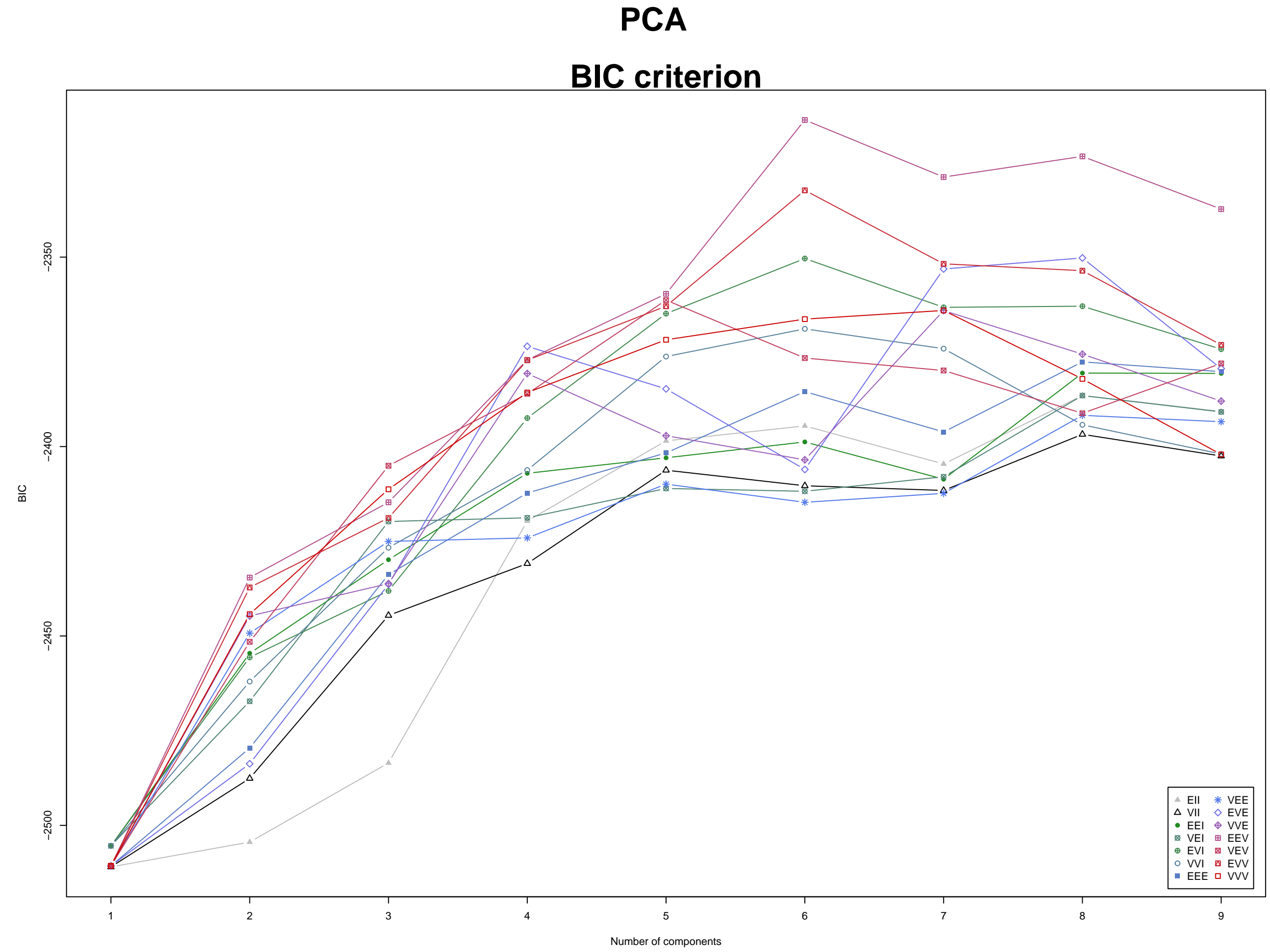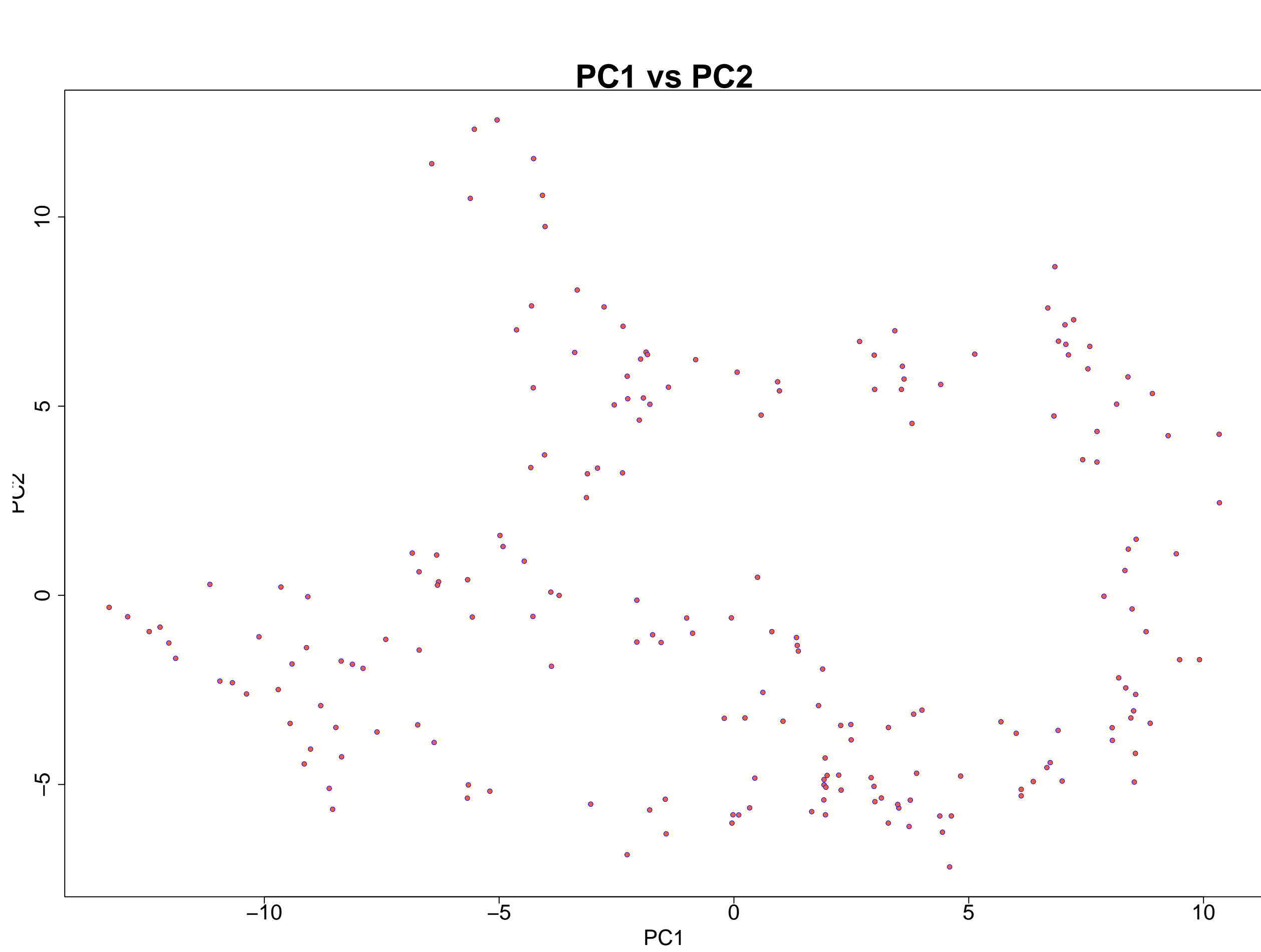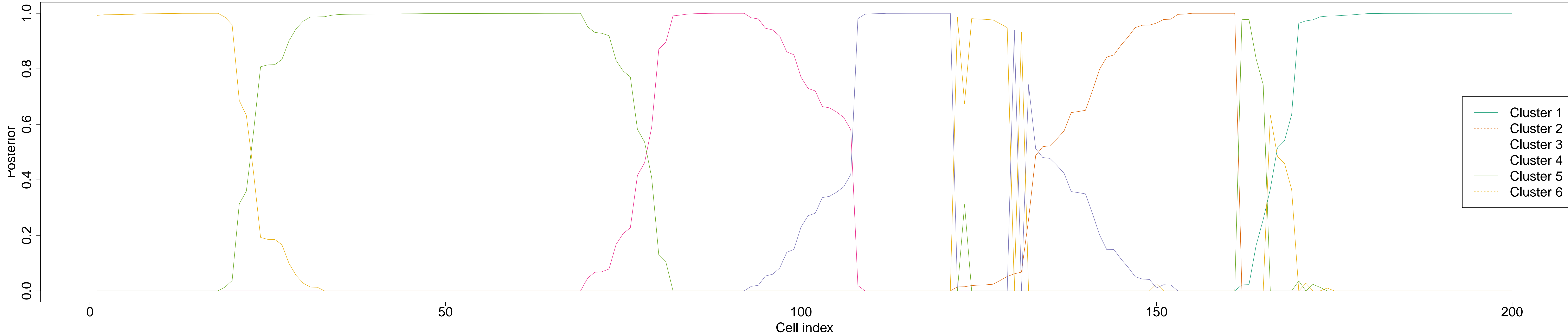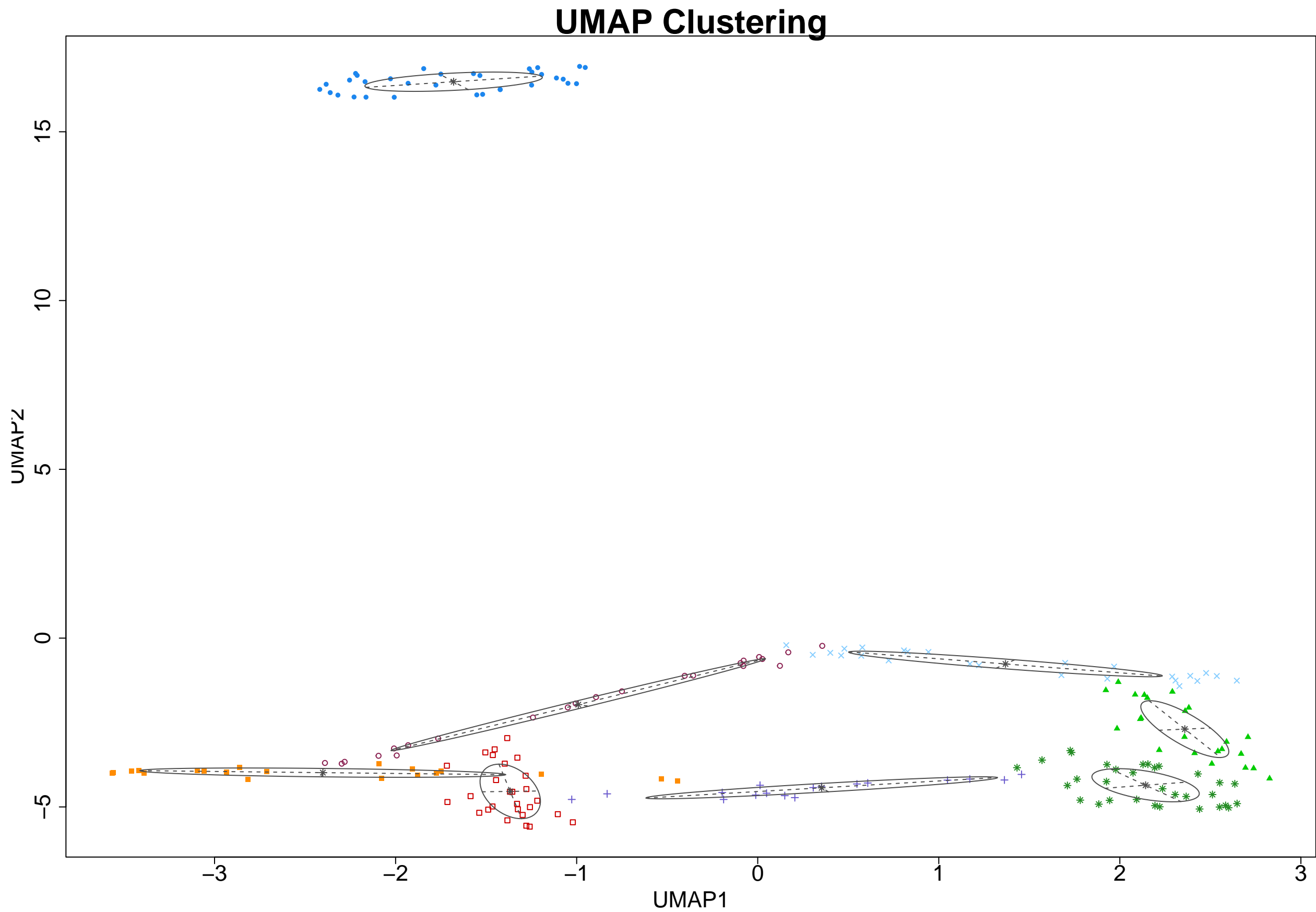Barplot of Centered and Scaled Dataset 5
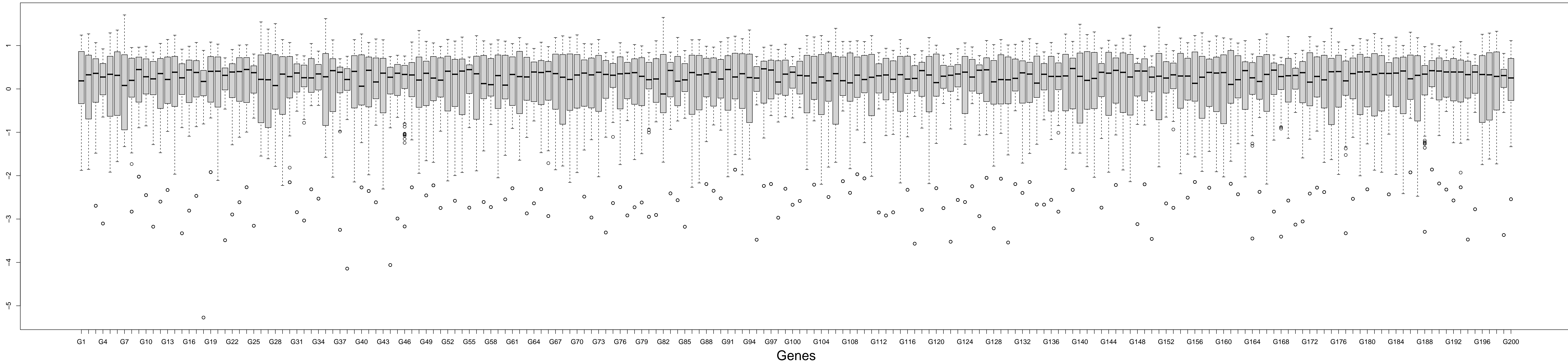
OPTIMAL NUMBER OF PRINCIPAL COMPONENTS = 3

PCA
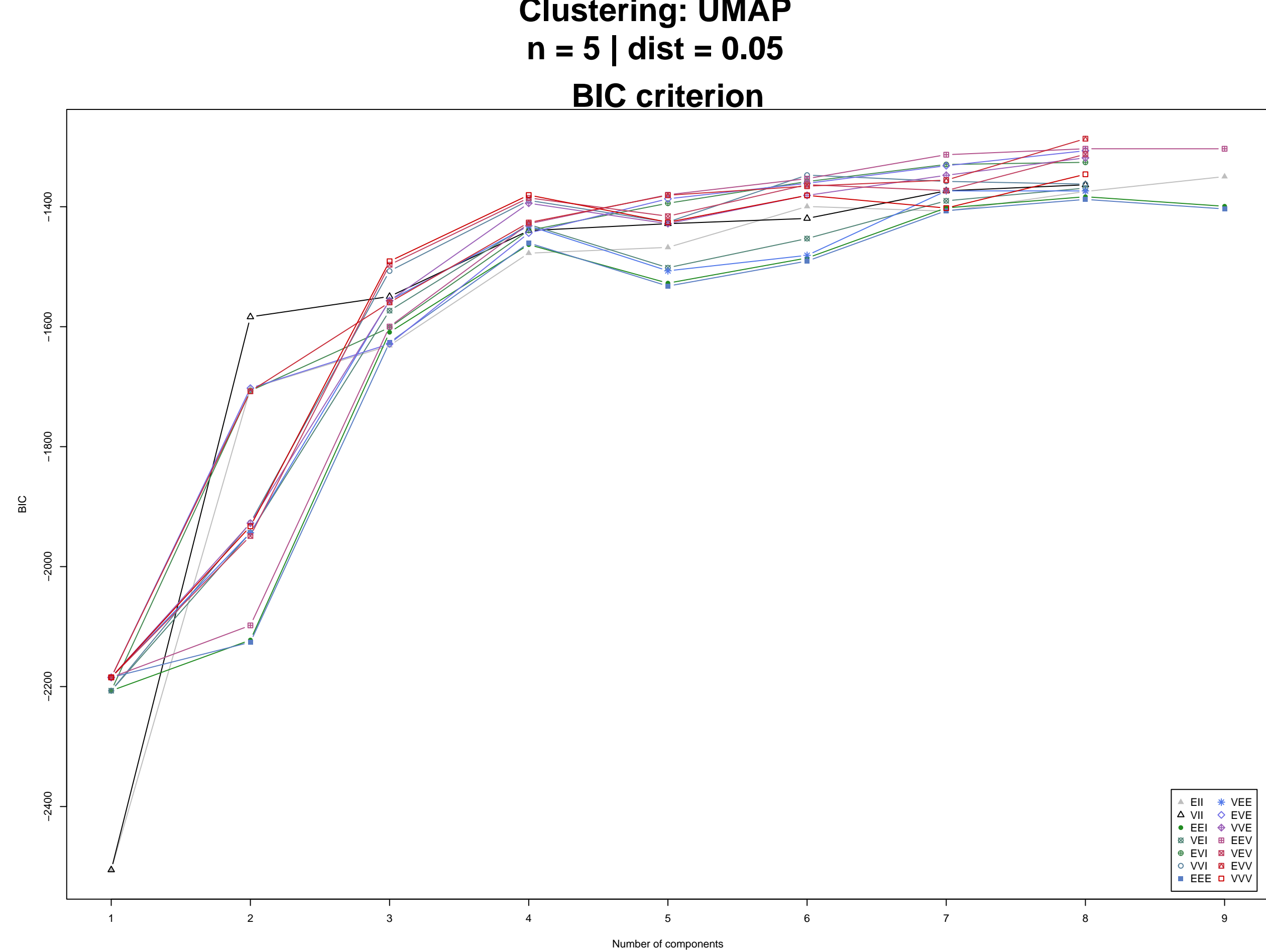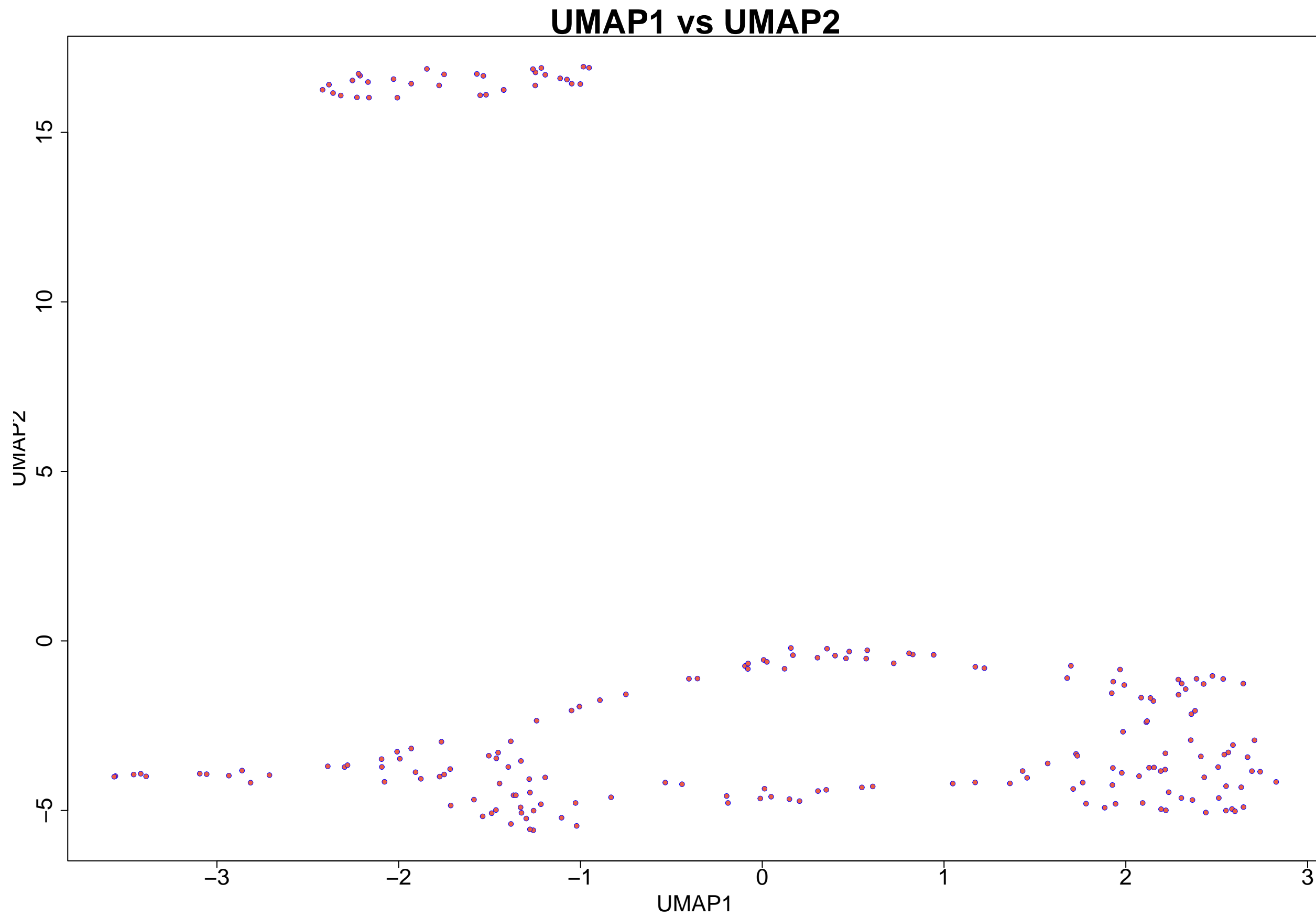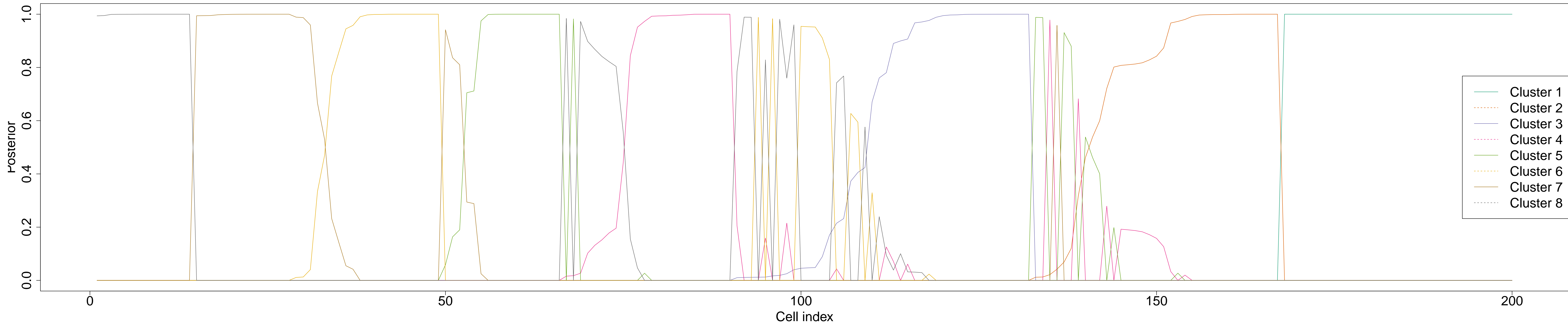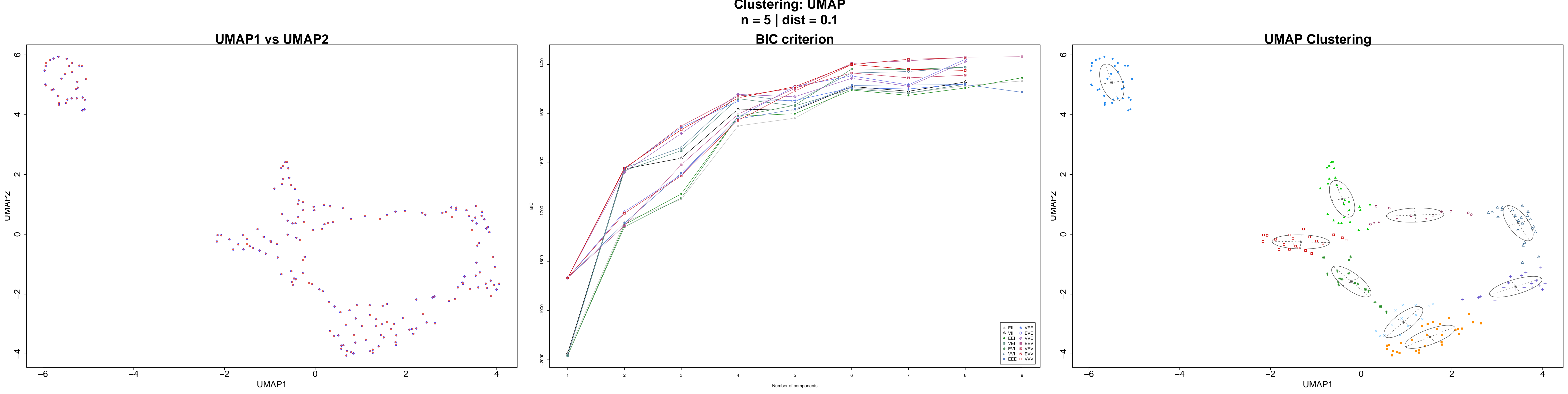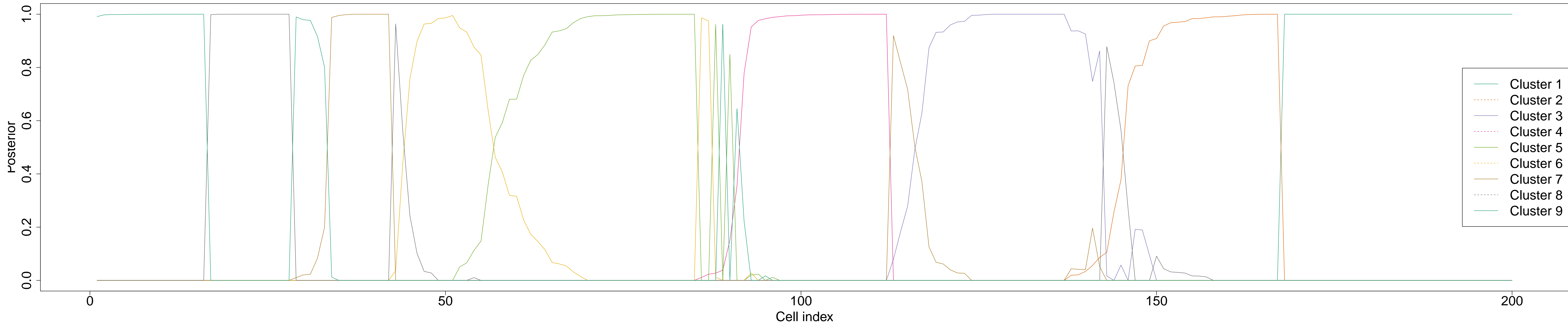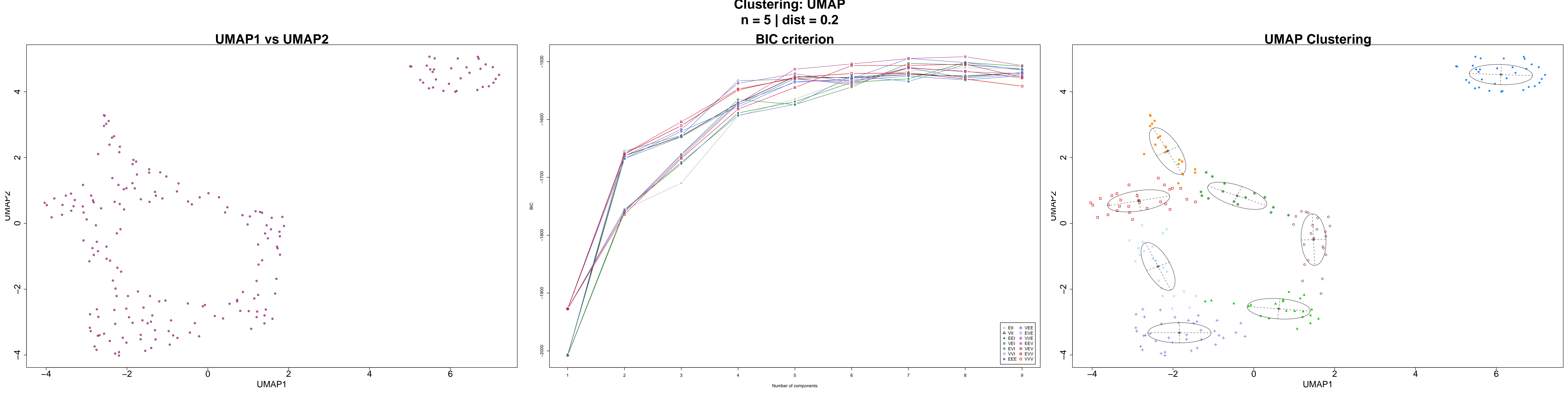
| PC1 vs PC2 | BIC criterion | PCA Clustering |

PCA Trajectory plot

Clustering: UMAP
n = 5 | dist = 0.05

UMAP Trajectory plot

Clustering: UMAP
n = 5 | dist = 0.1

UMAP1 vs UMAP2

BIC criterion

UMAP Clustering

UMAP Trajectory plot

Clustering: UMAP
n = 5 | dist = 0.2

UMAP1 vs UMAP2

BIC criterion

UMAP Clustering

UMAP Trajectory plot

Clustering: UMAP
n = 5 | dist = 0.3

UMAP Trajectory plot

Clustering: UMAP
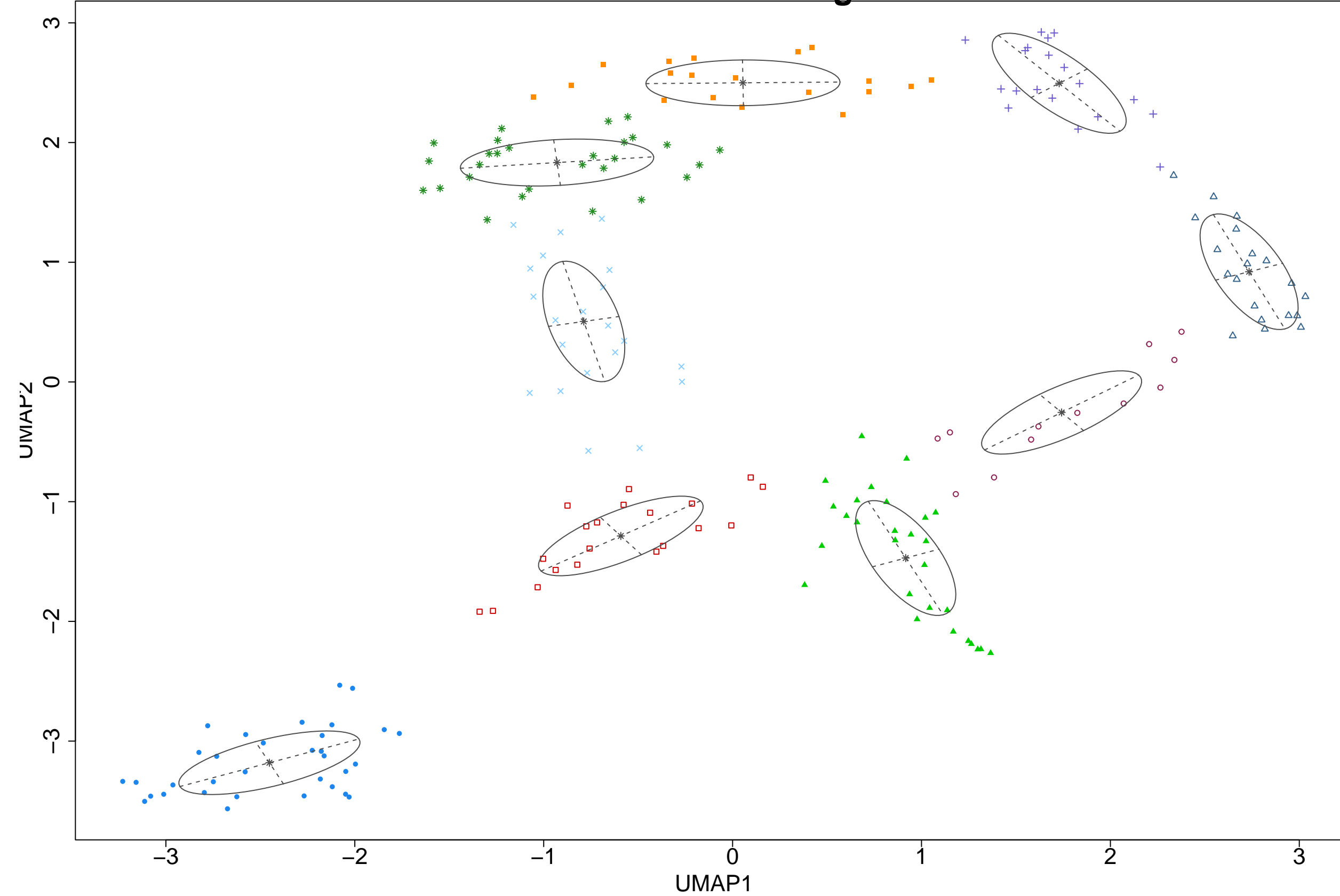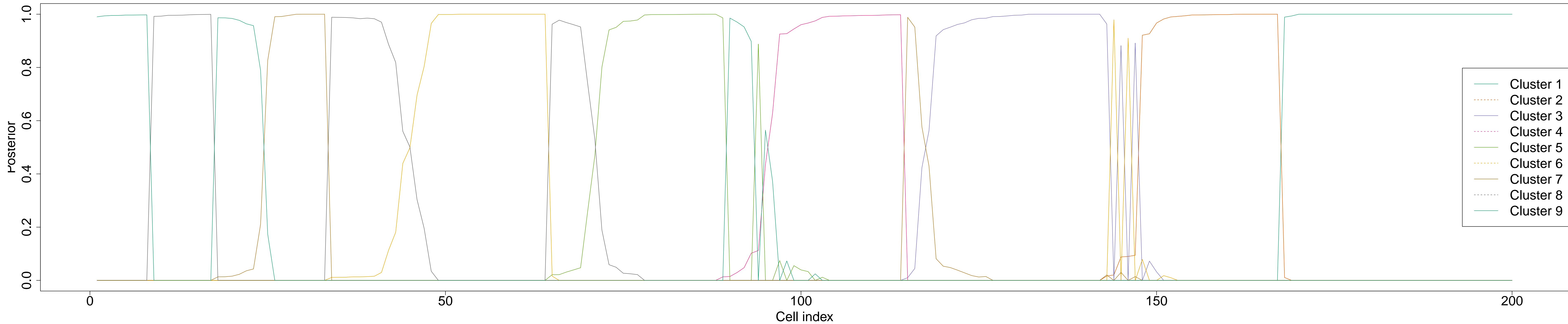## n = 5 | dist = 0.4

UMAP1 vs UMAP2
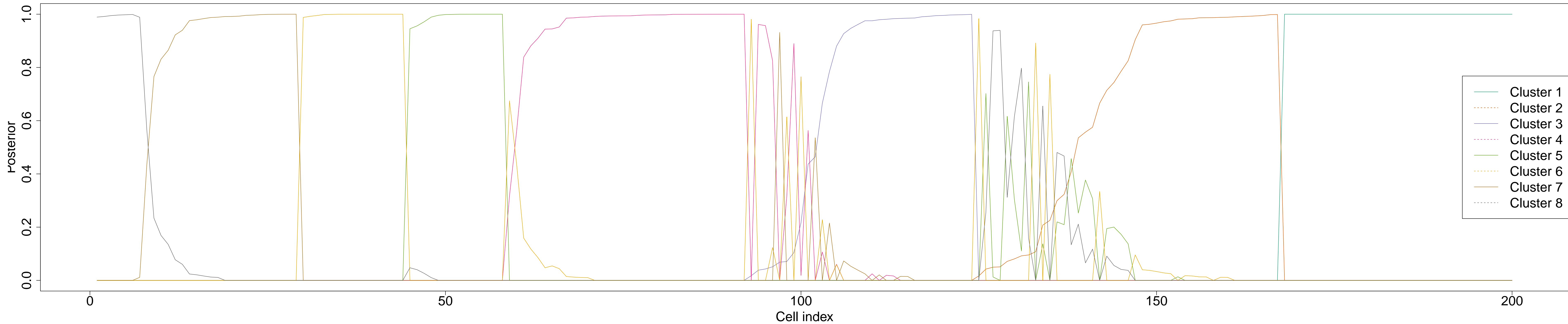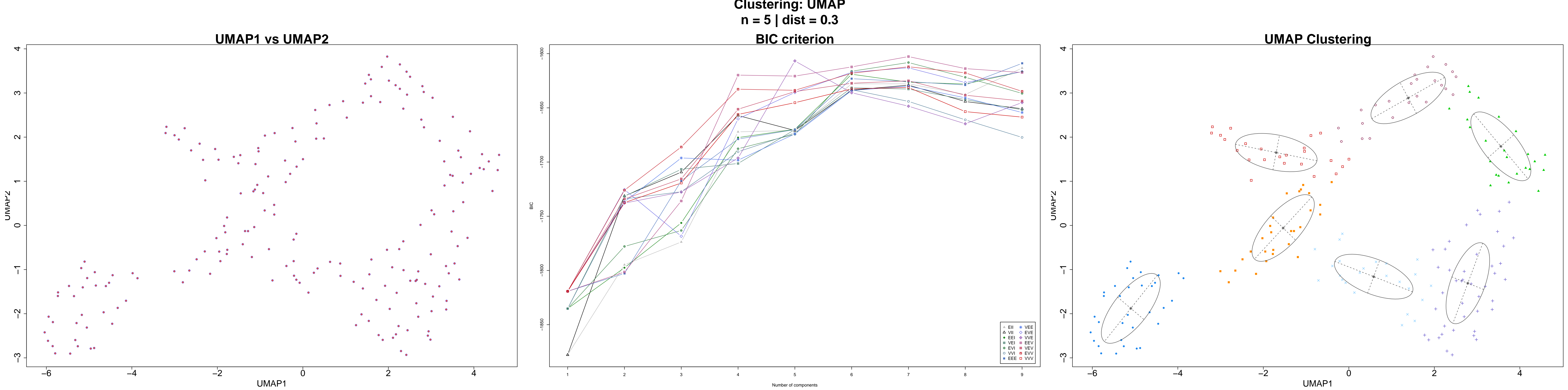
BIC criterion
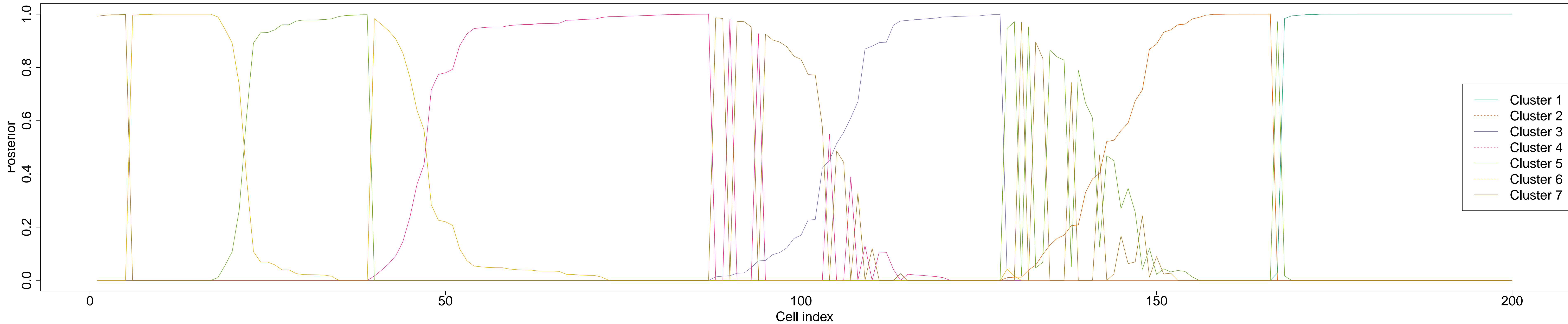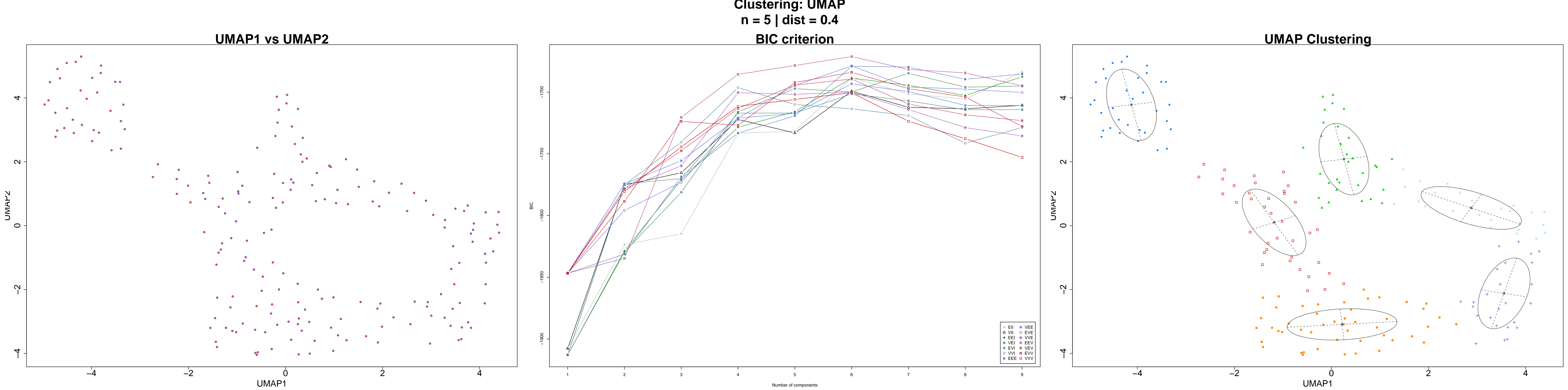
UMAP Clustering
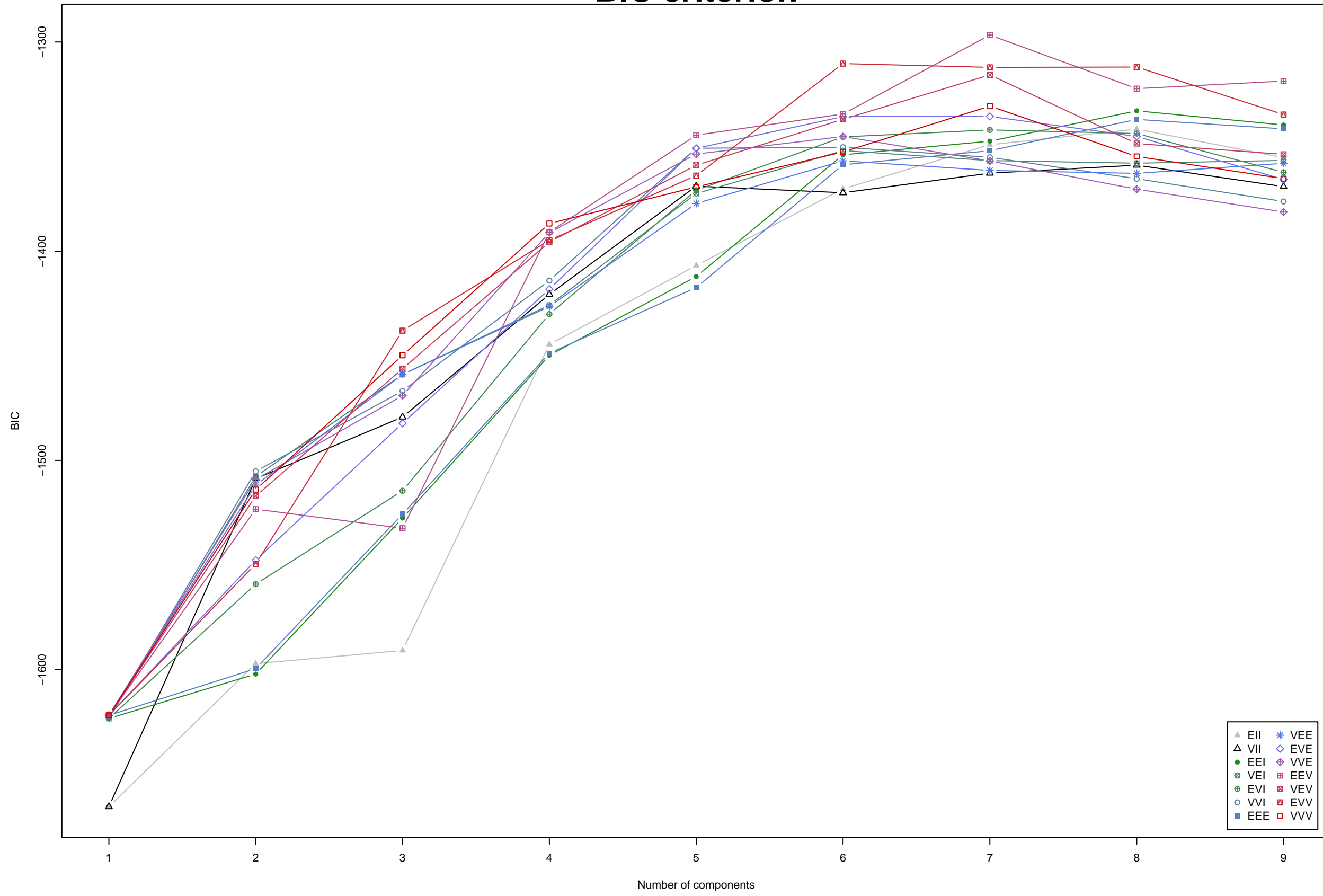
UMAP Trajectory plot
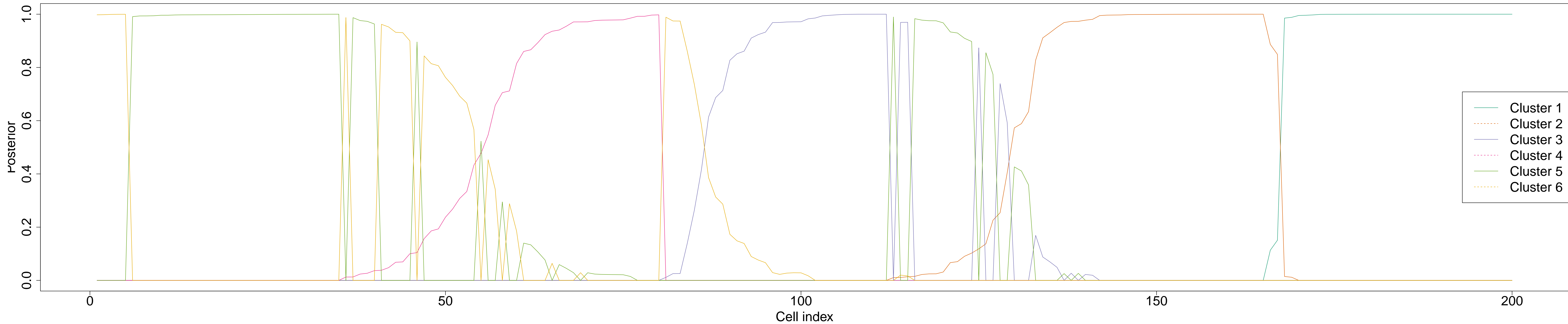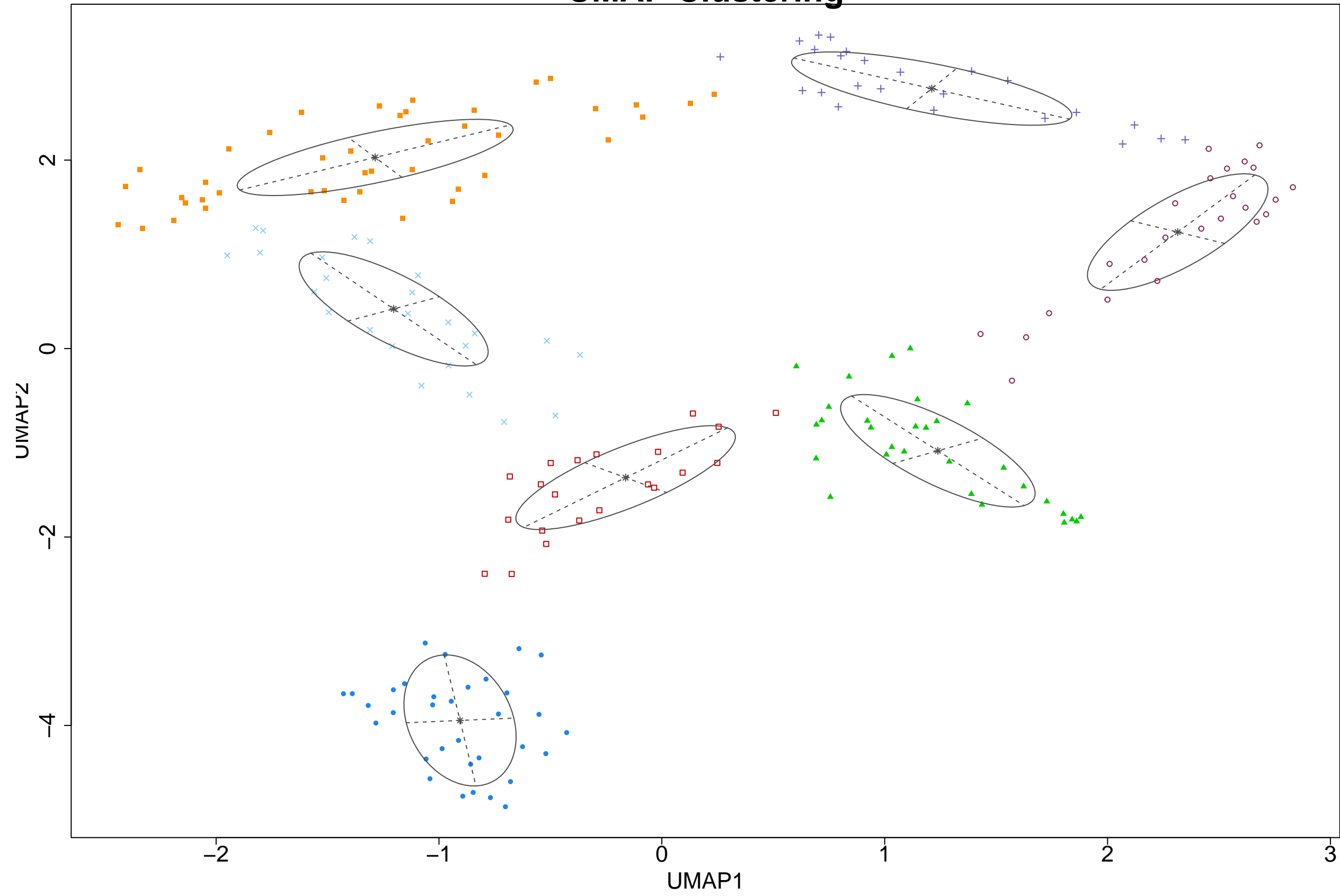
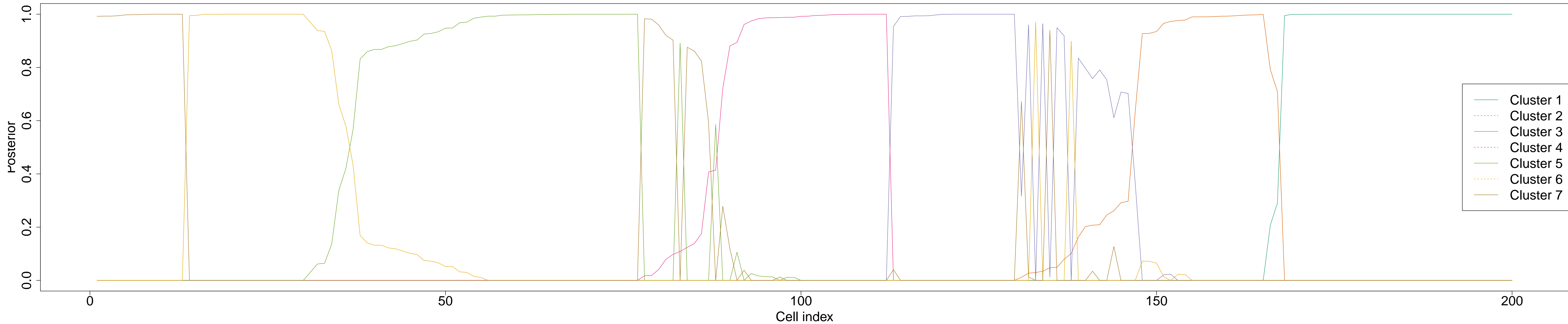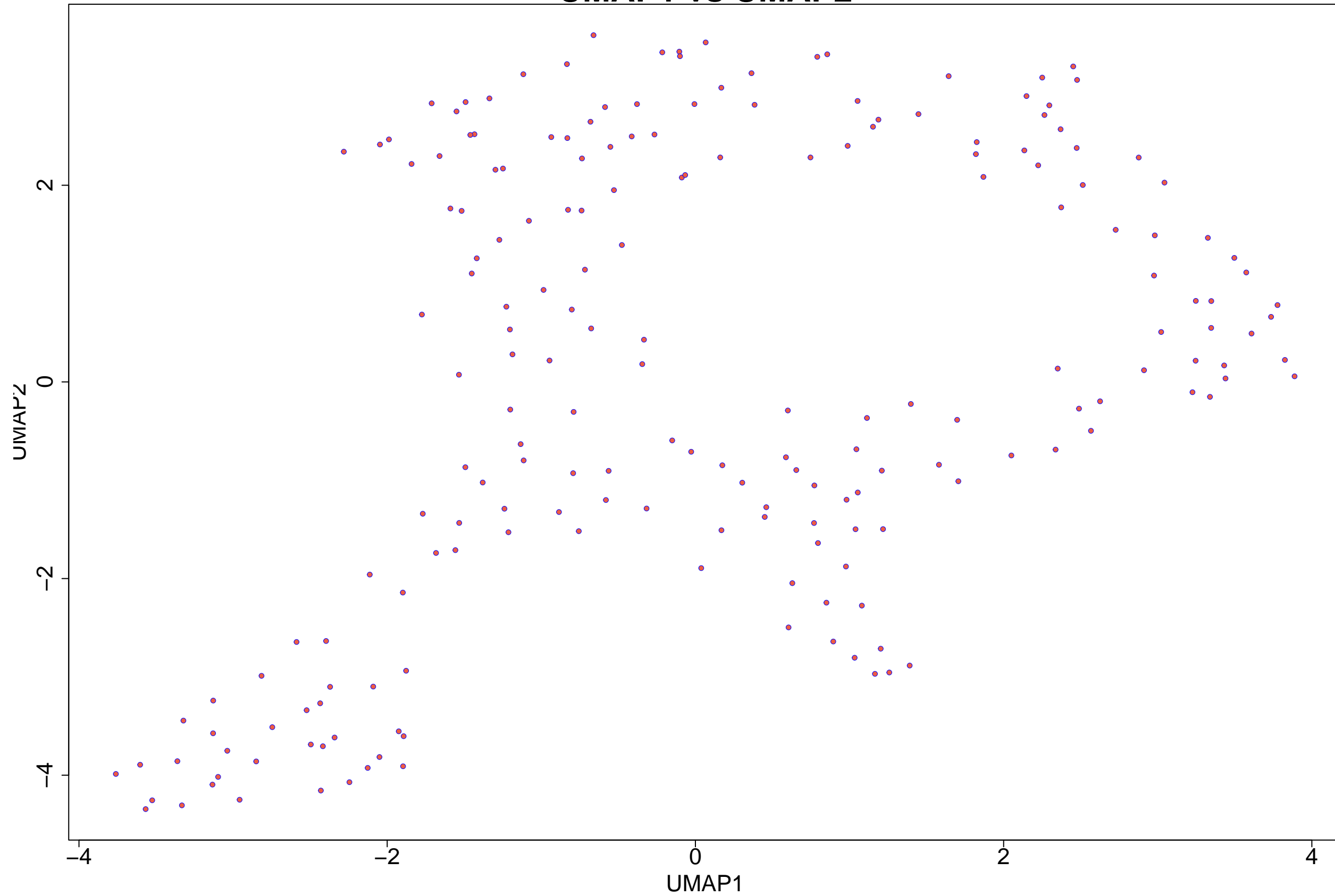**Clustering: UMAP**
n = 10 | dist = 0.05

UMAP Trajectory plot
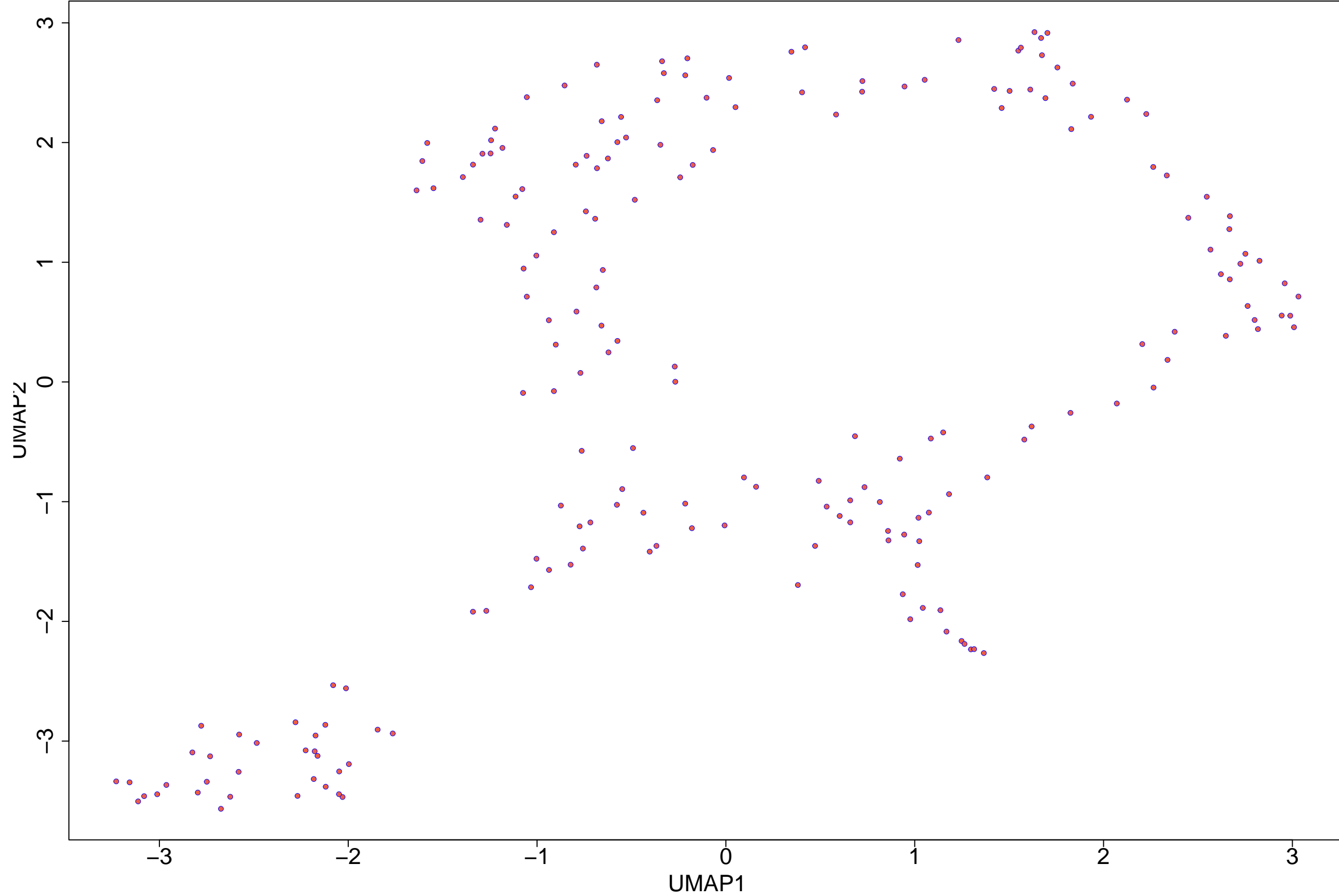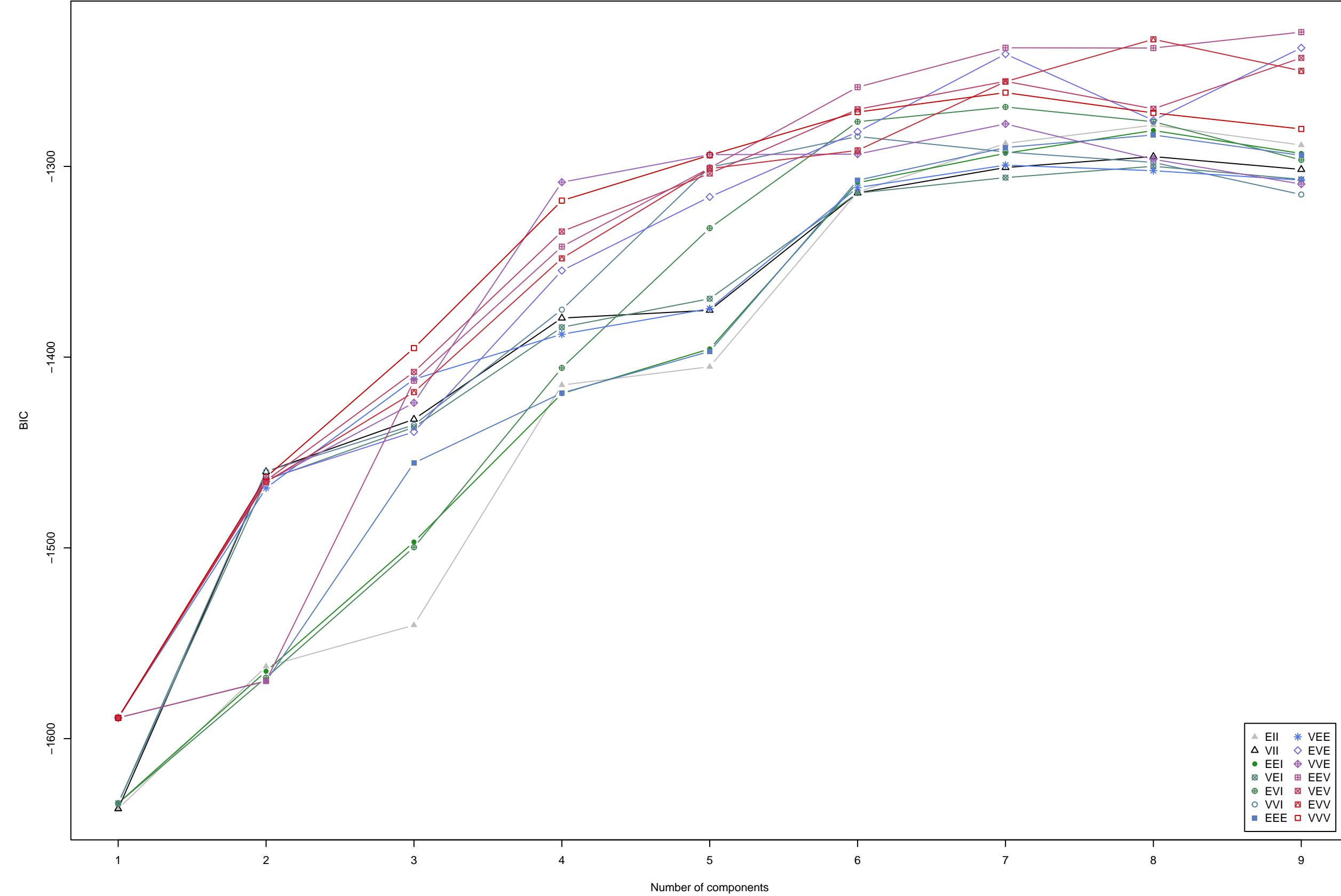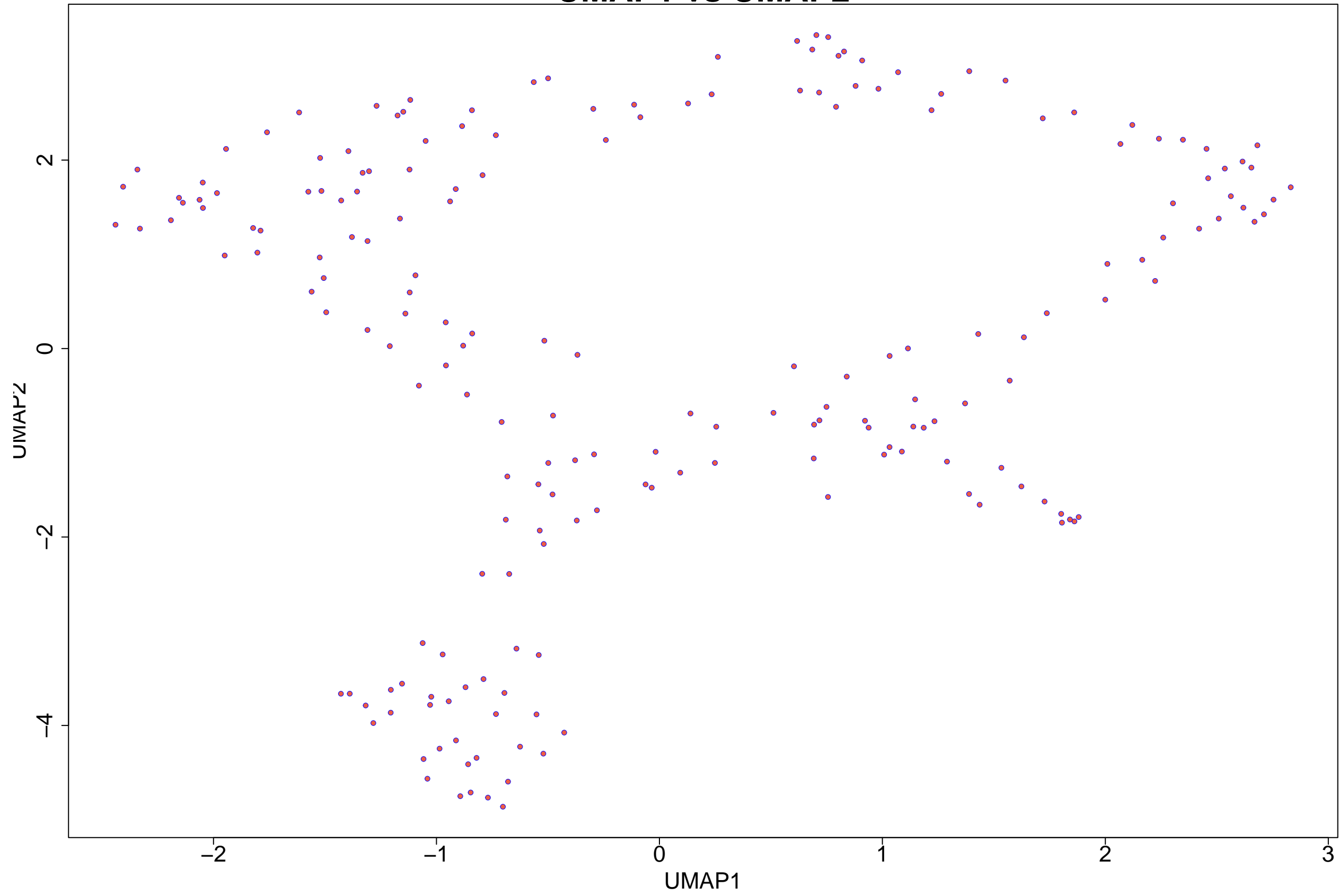
Clustering: UMAP
n = 10 | dist = 0.1
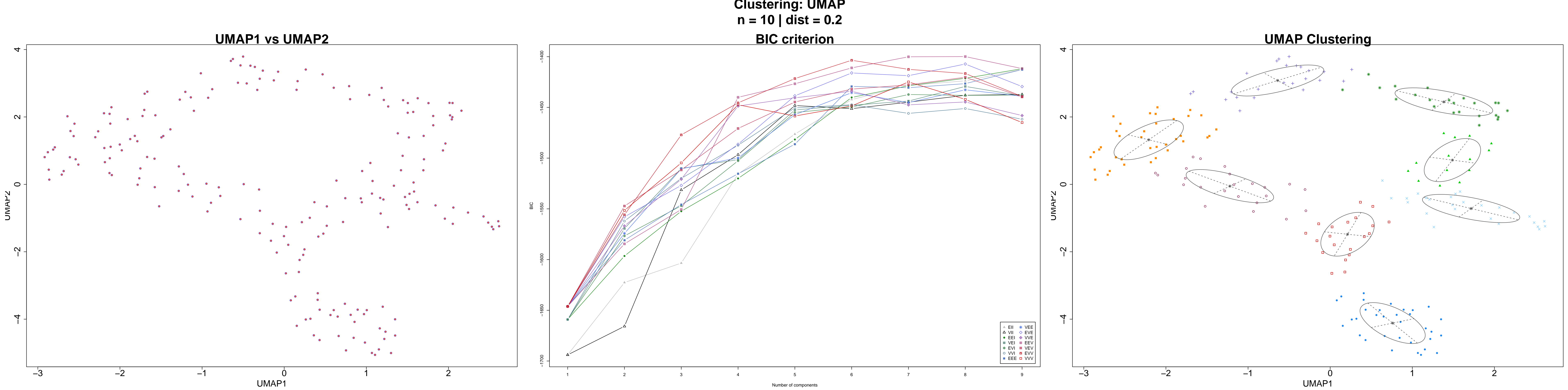
UMAP Trajectory plot
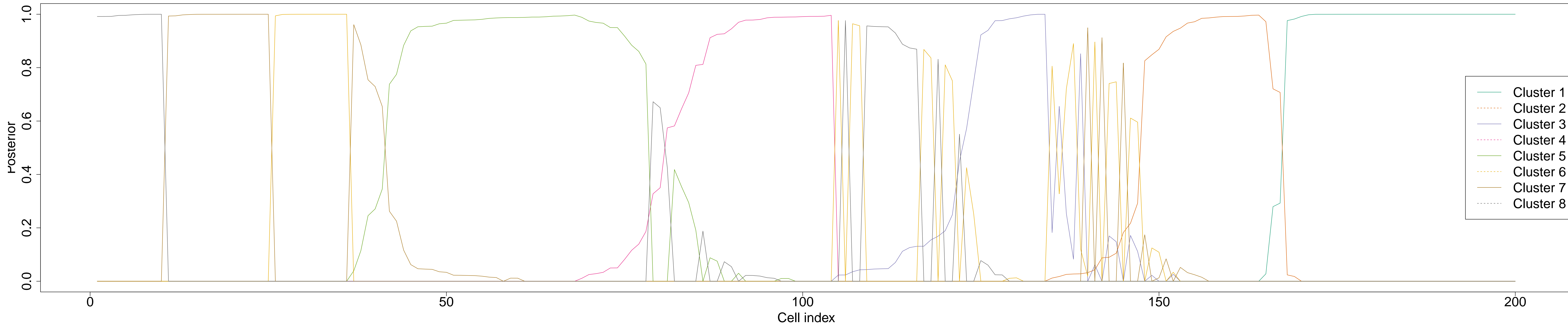
Clustering: UMAP
n = 10 | dist = 0.2

UMAP Trajectory plot

Clustering: UMAP
n = 10 | dist = 0.3

UMAP Trajectory plot
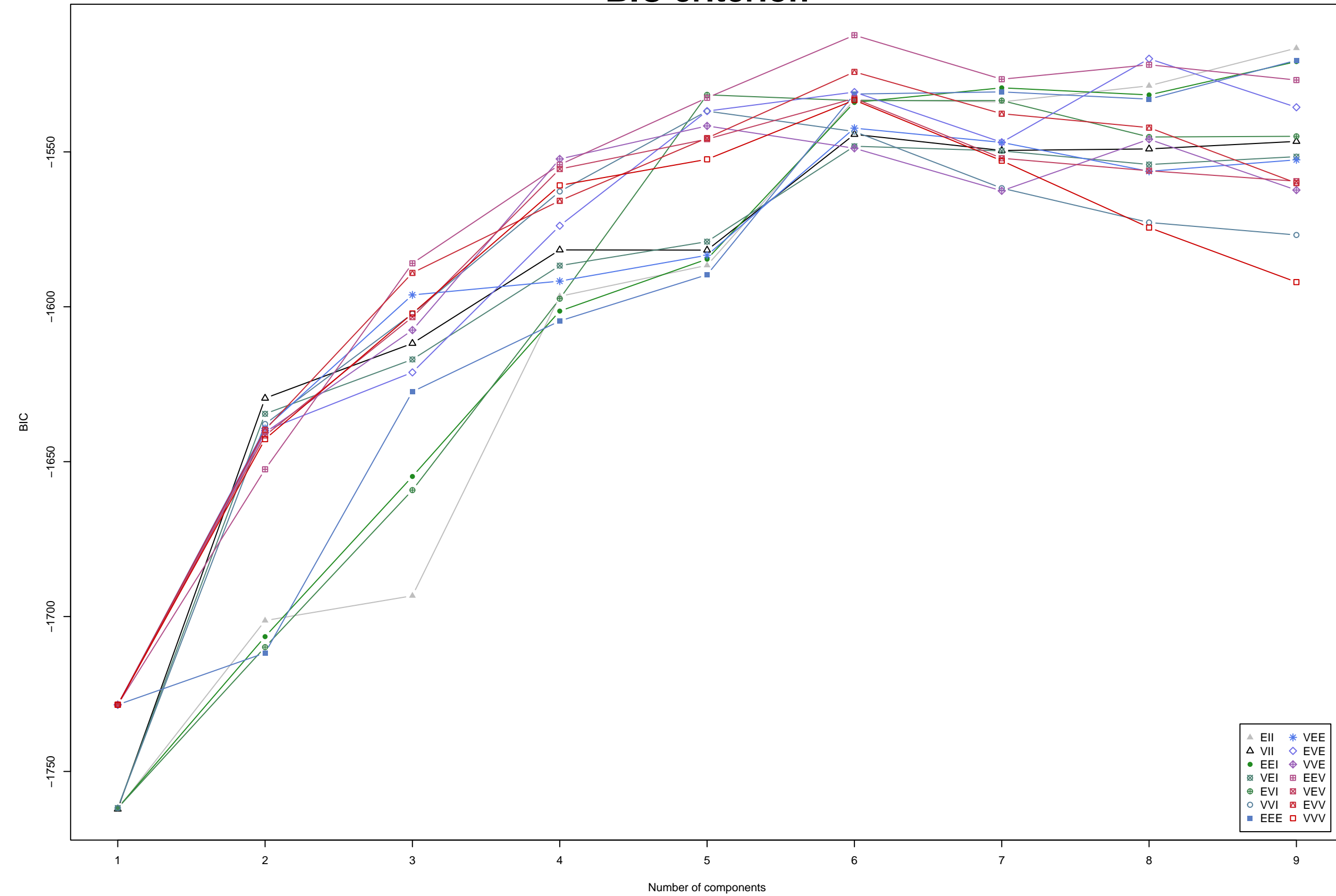
Clustering: UMAP
n = 10 | dist = 0.4

UMAP Trajectory plot

Clustering: UMAP
n = 15 | dist = 0.05

UMAP Trajectory plot
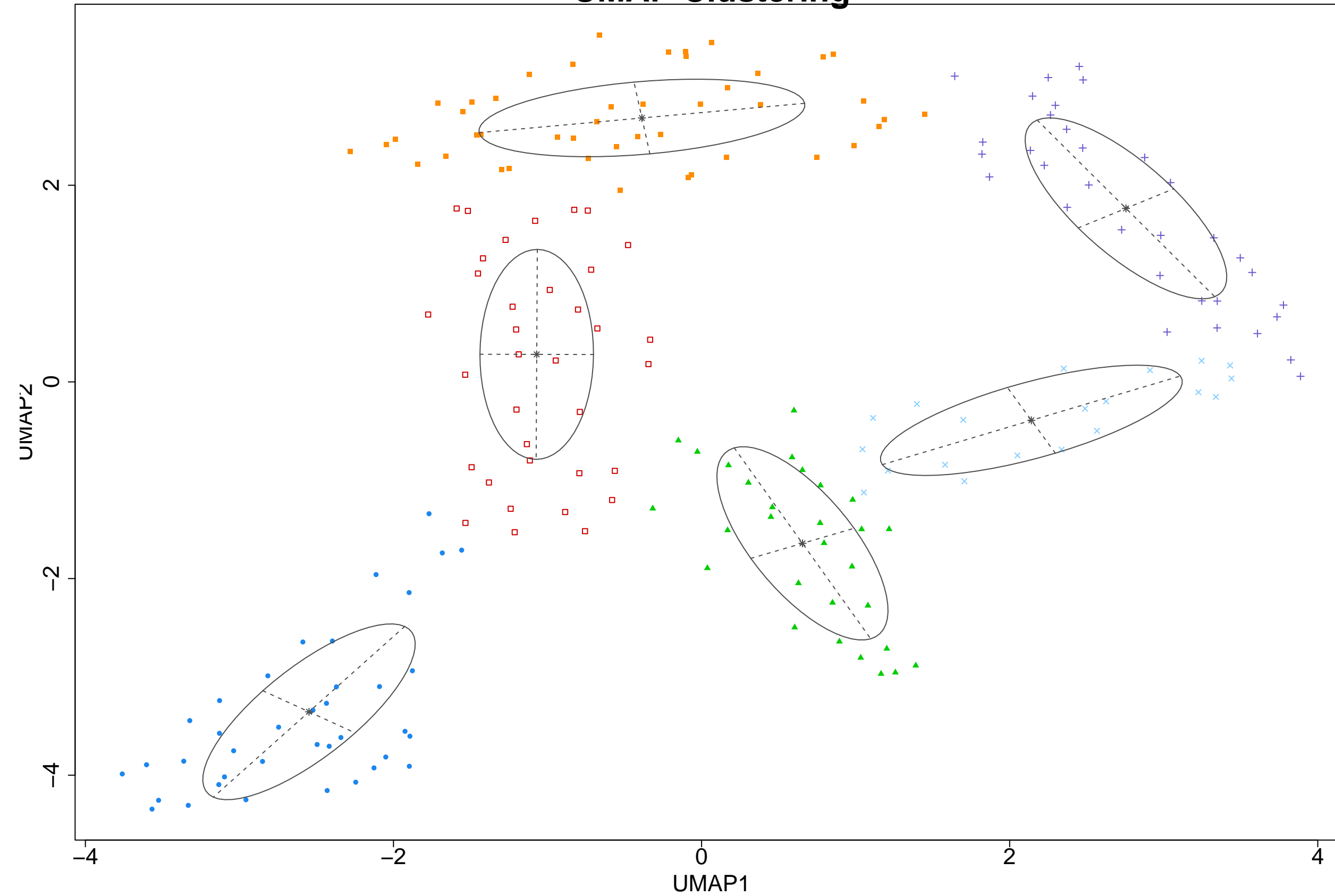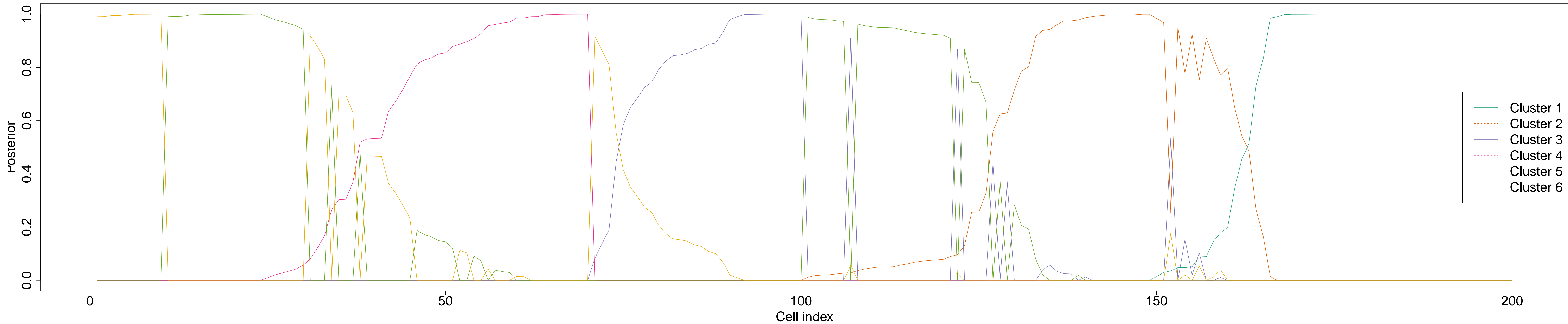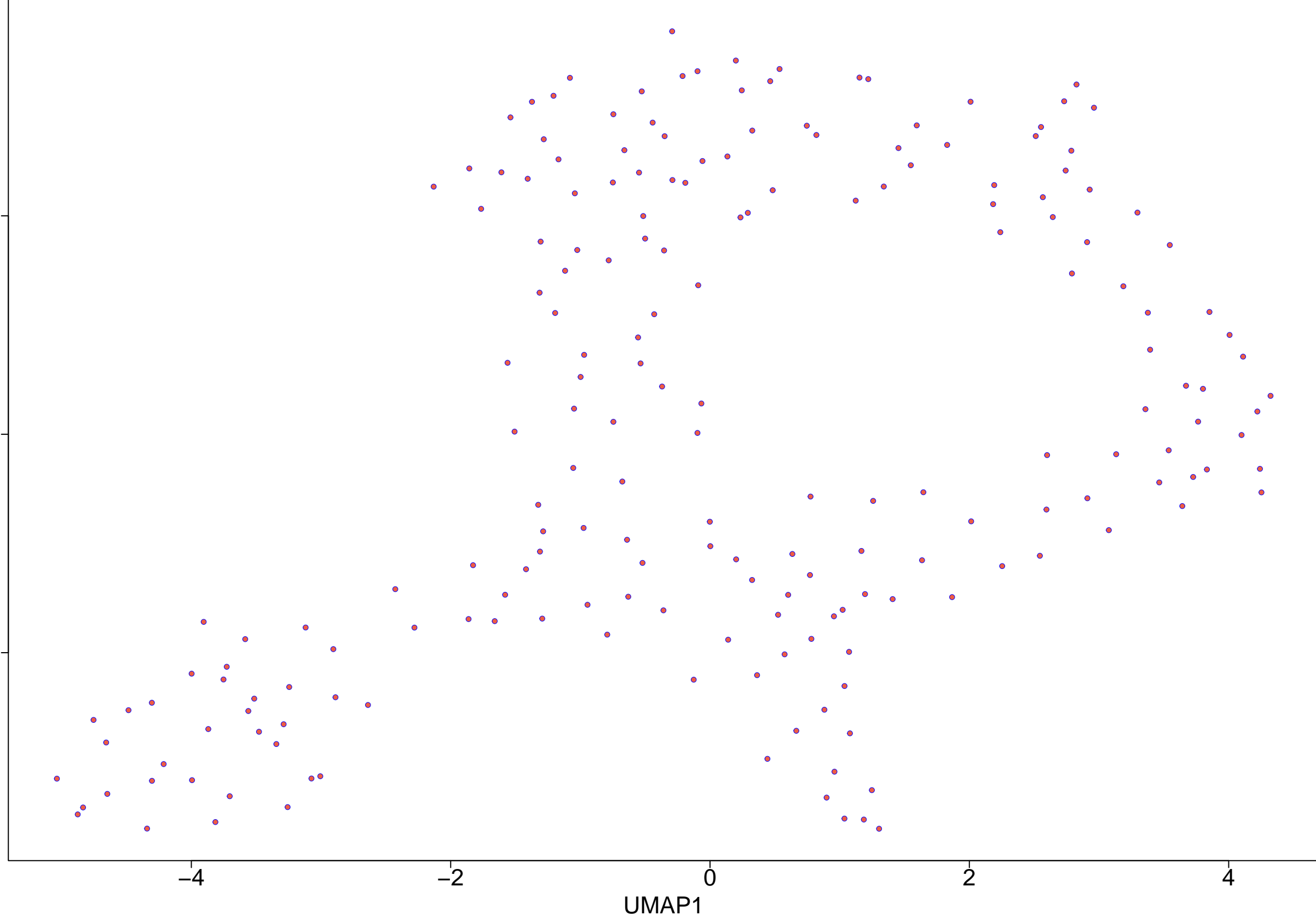
Clustering: UMAP
n = 15 | dist = 0.1

UMAP1 vs UMAP2
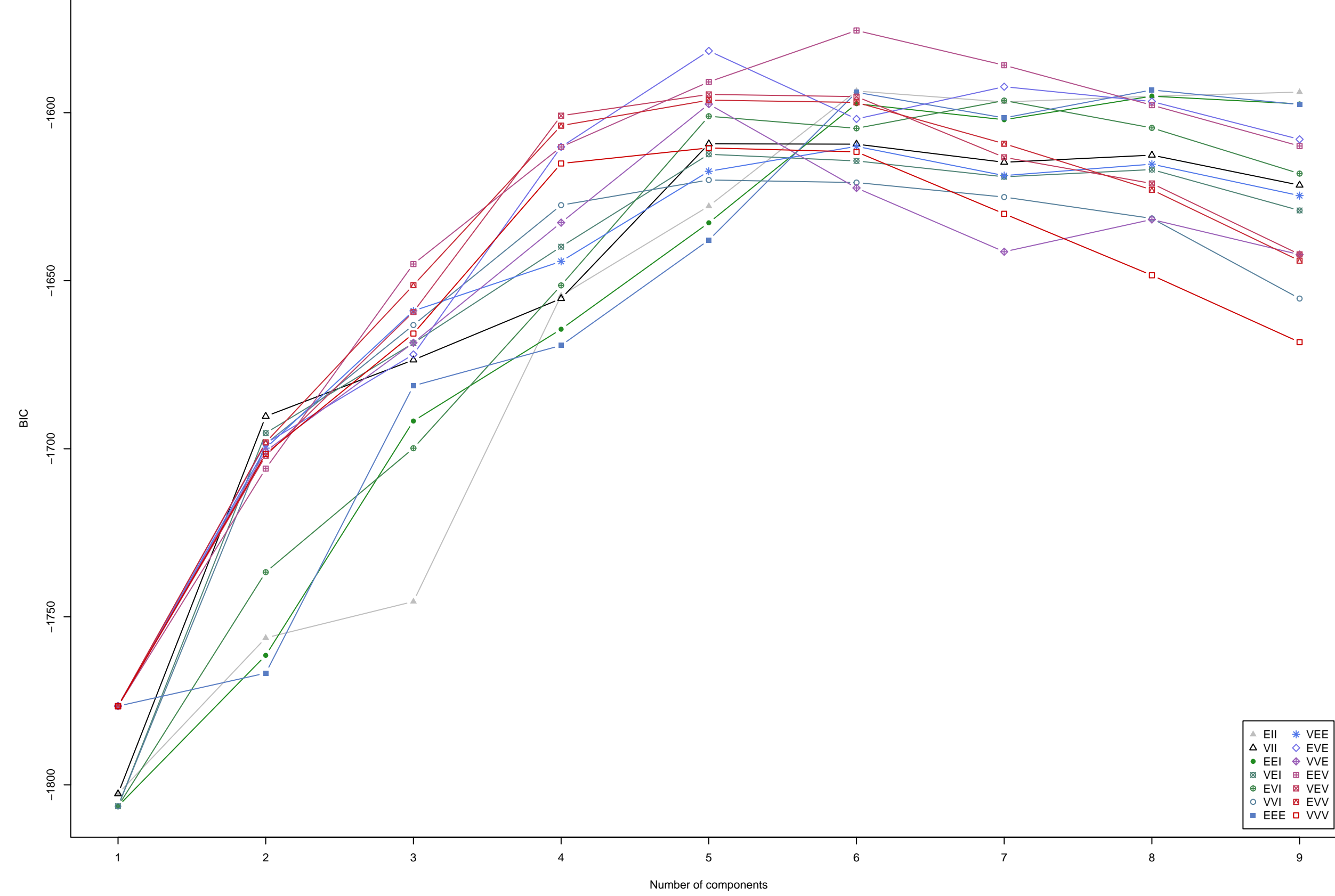
BIC criterion

UMAP Clustering

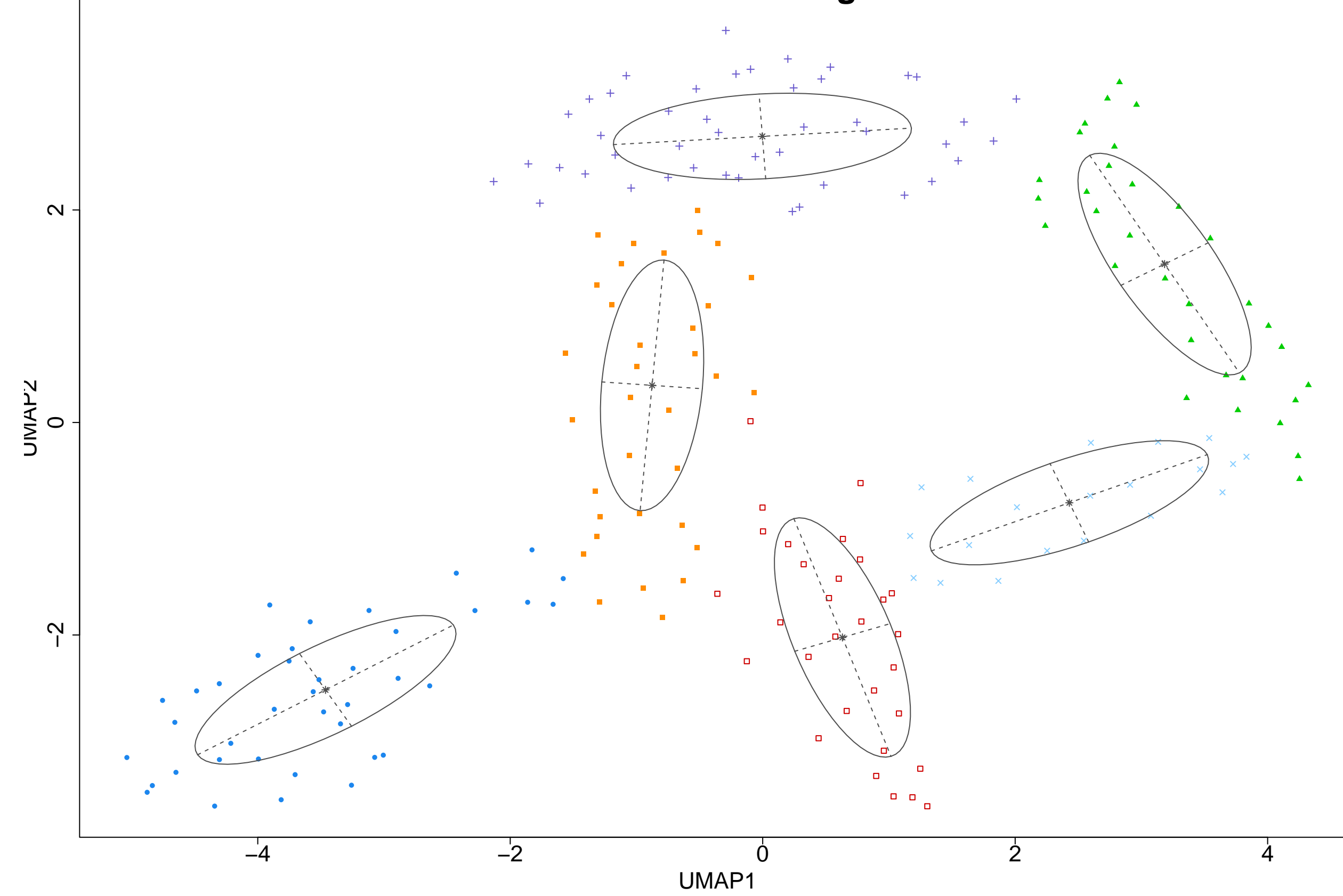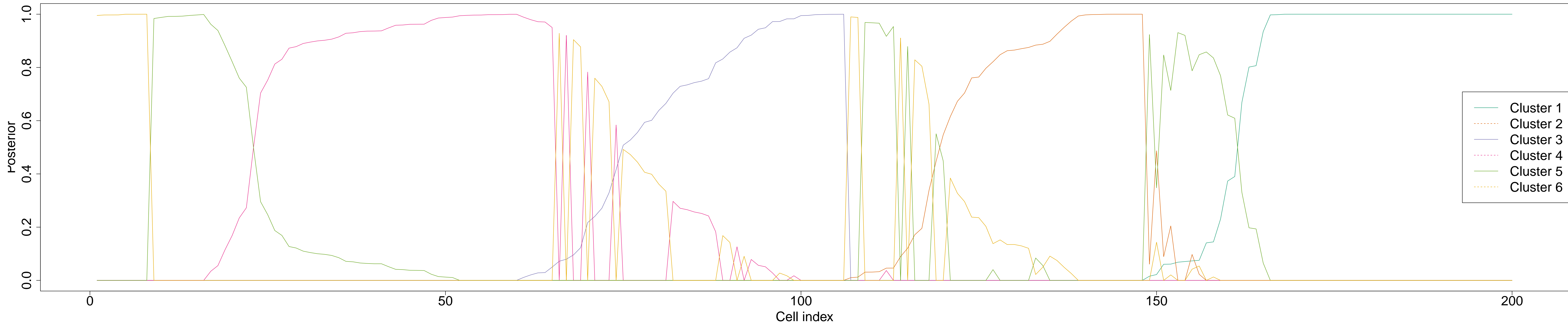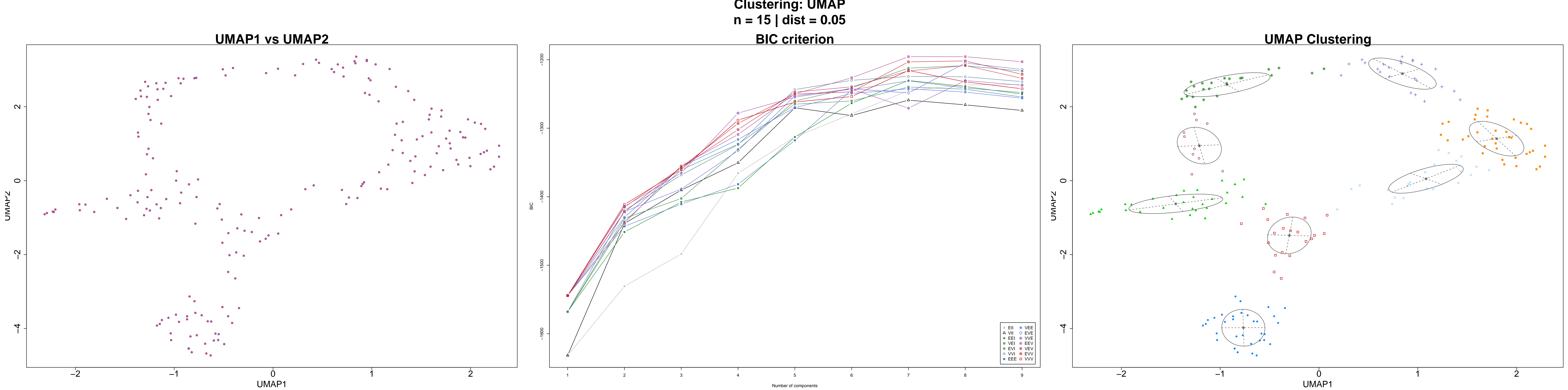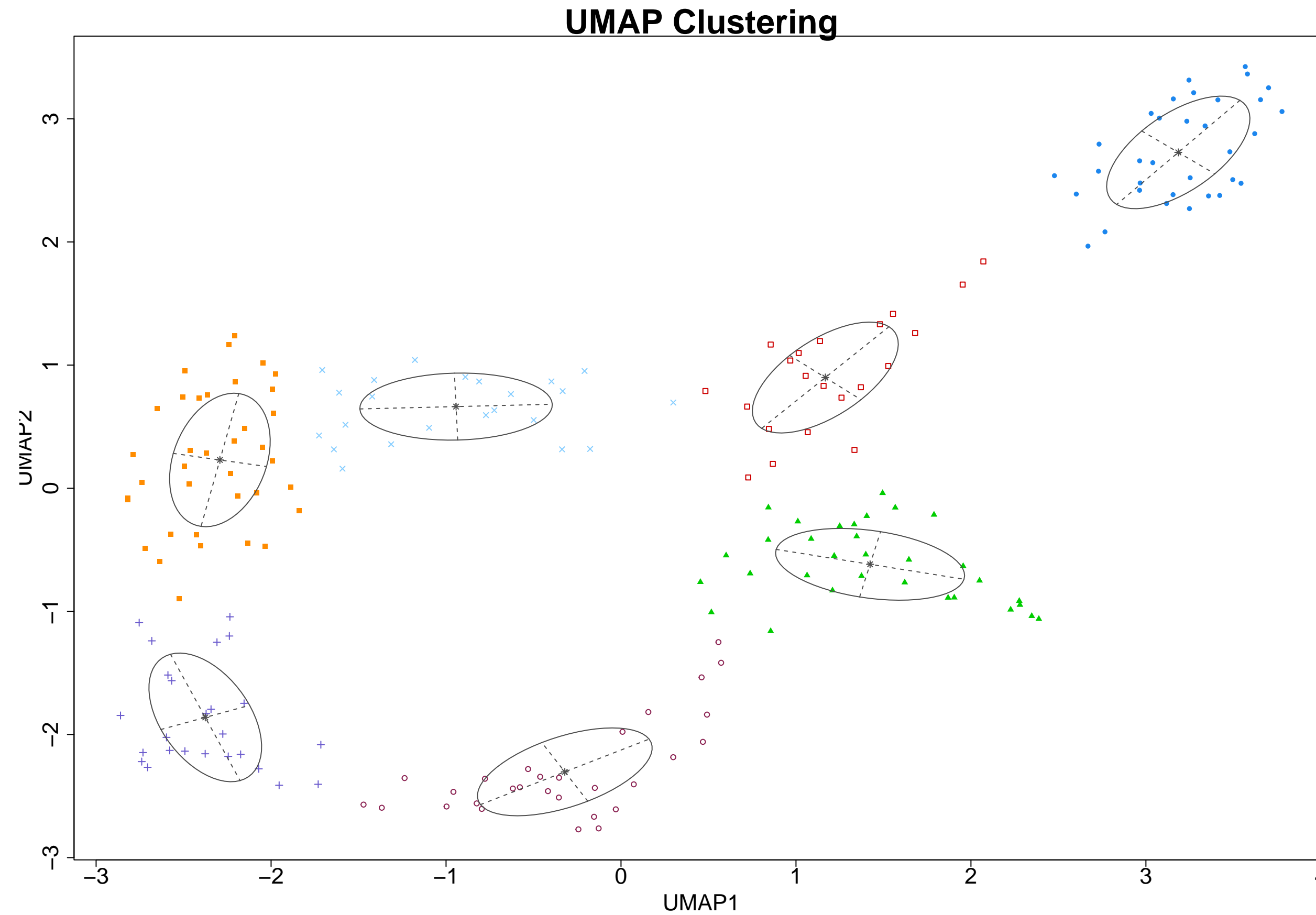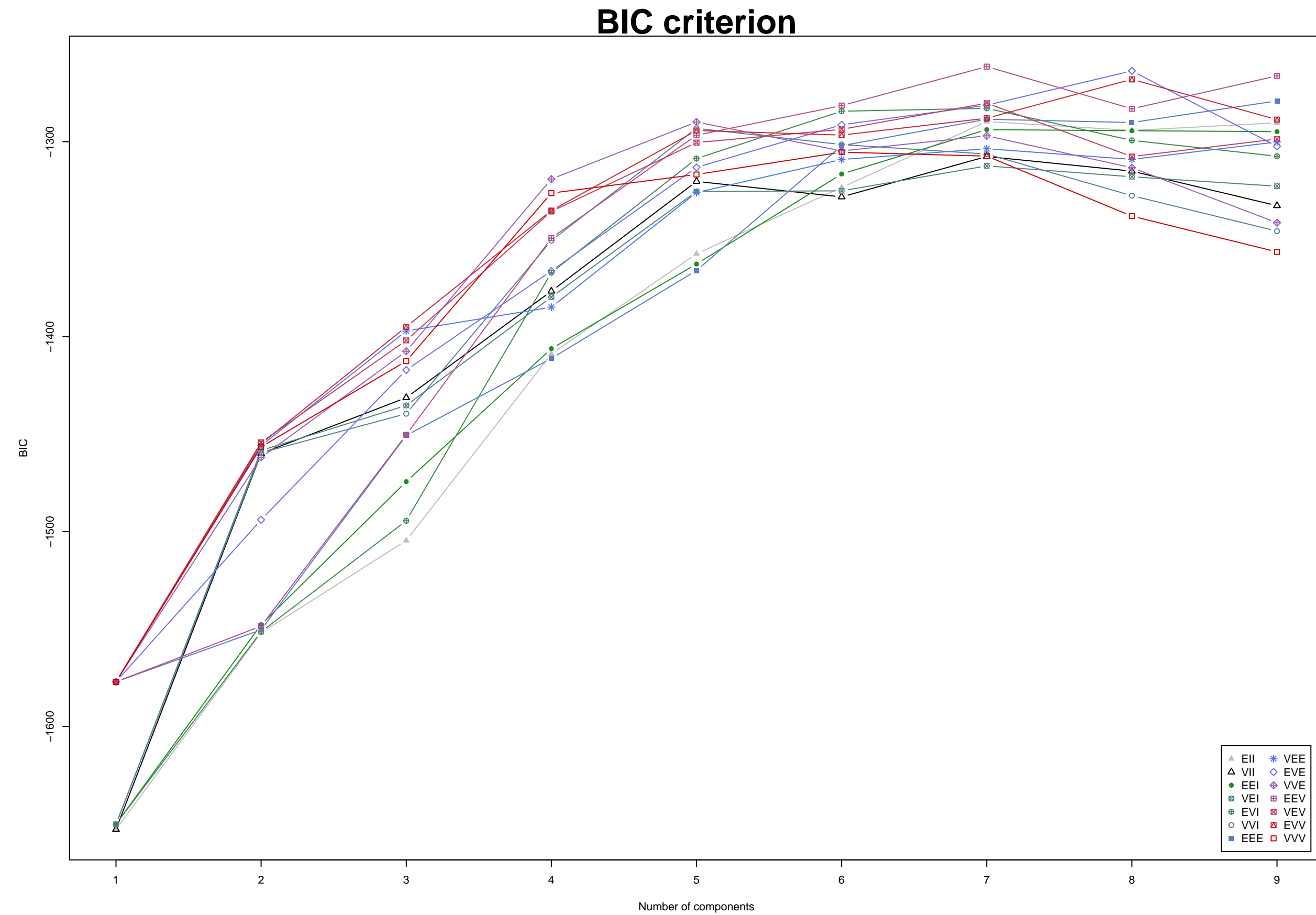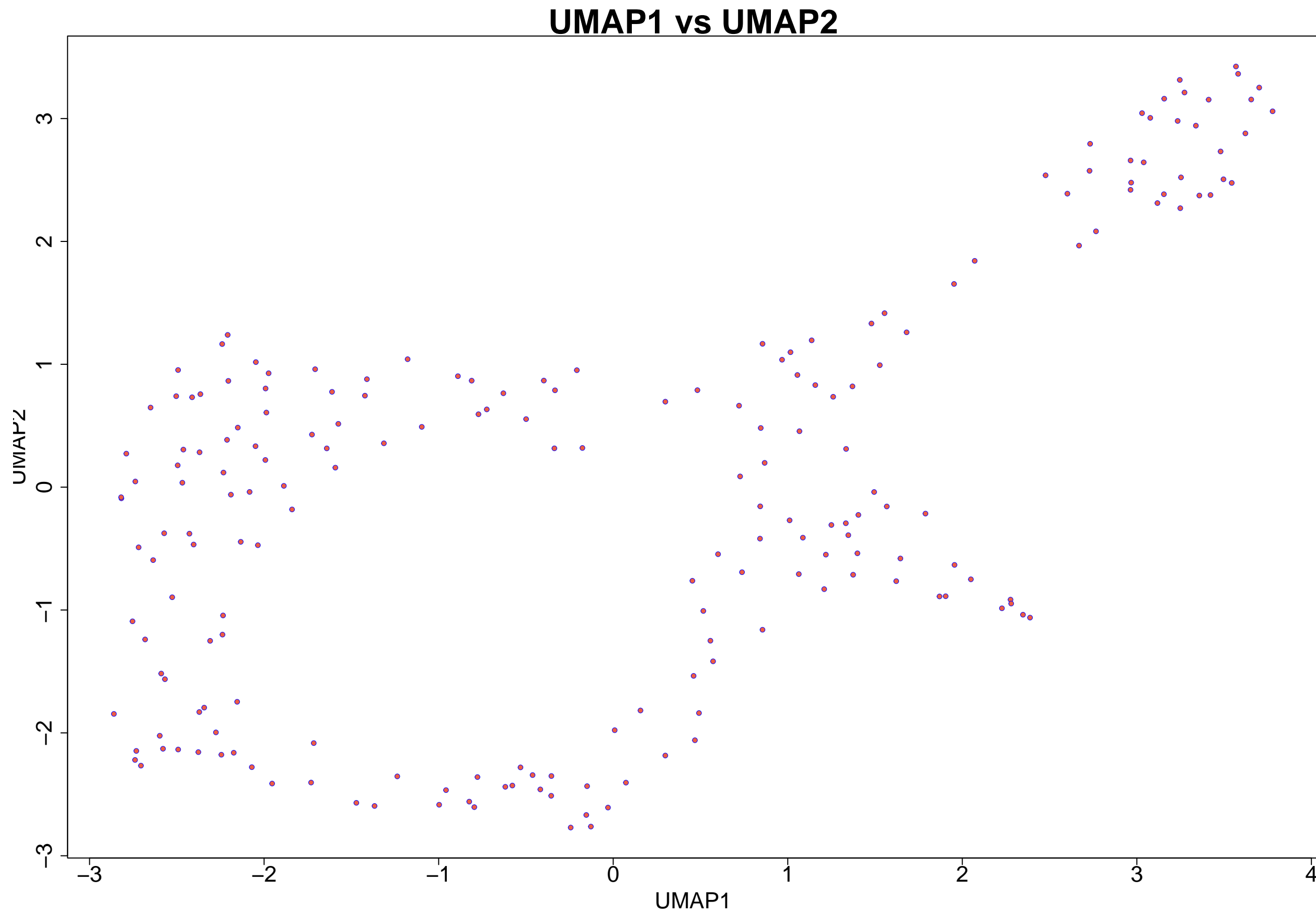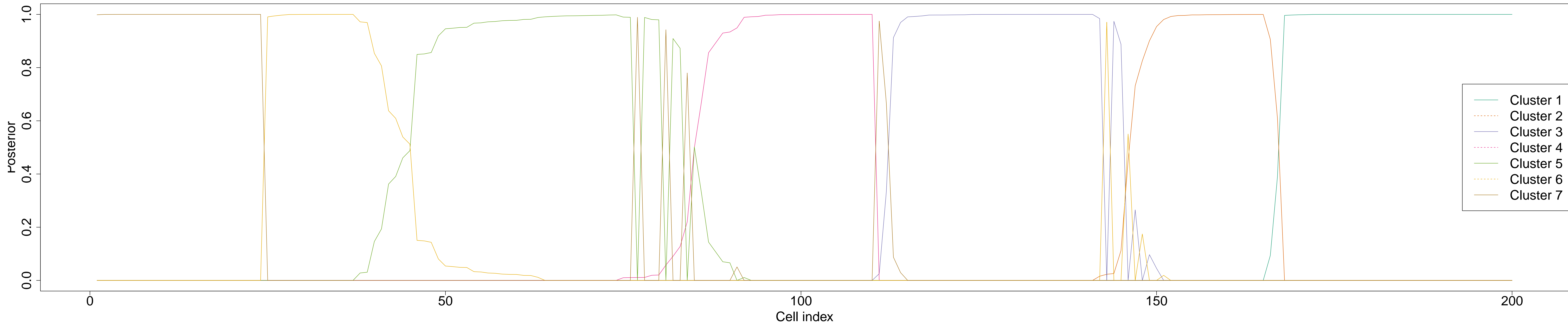UMAP Trajectory plot

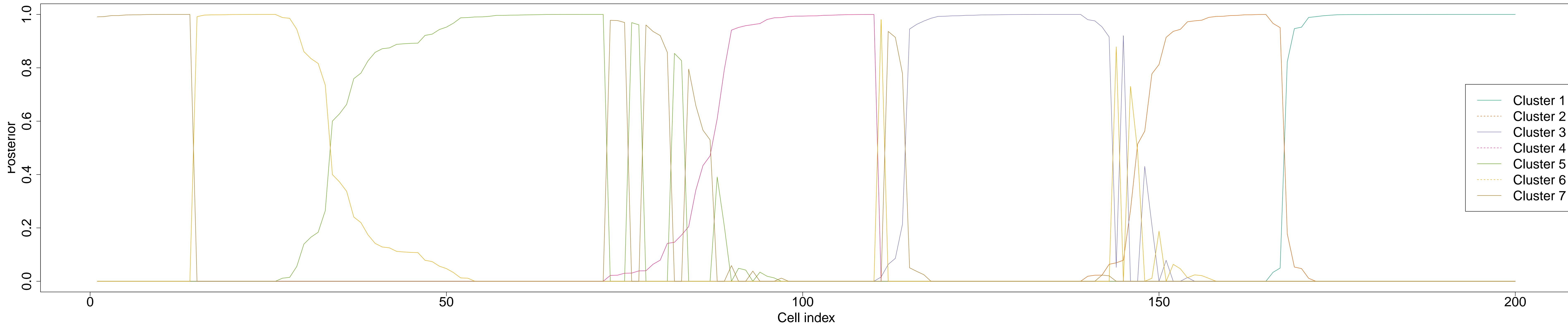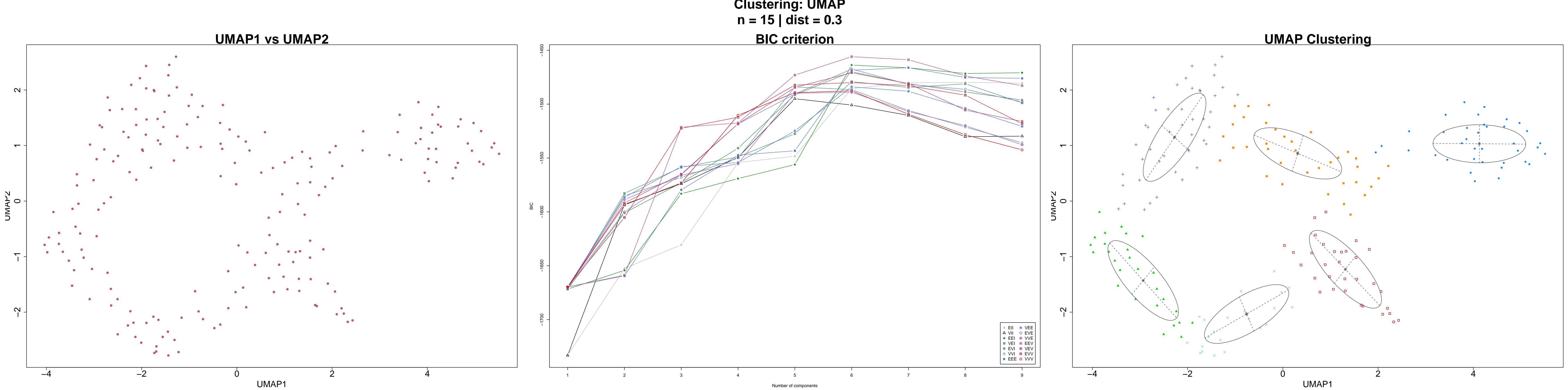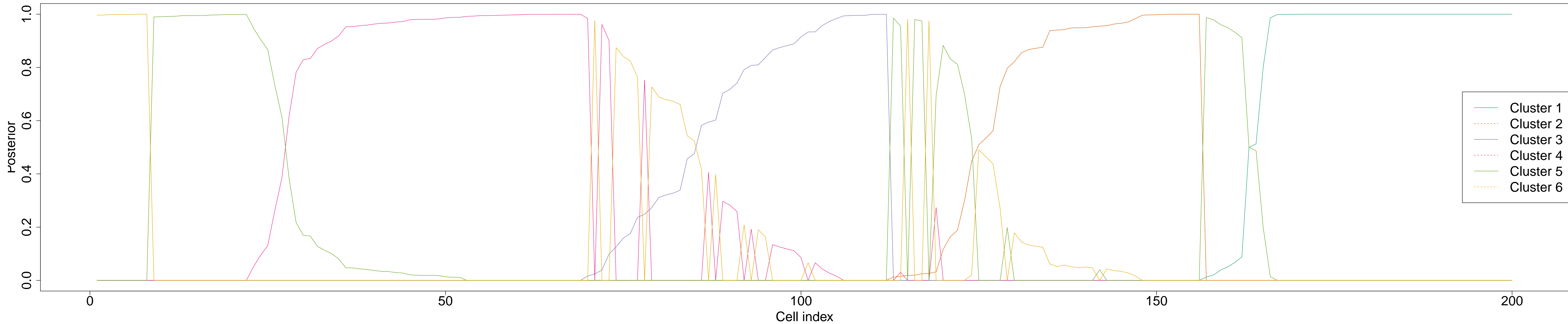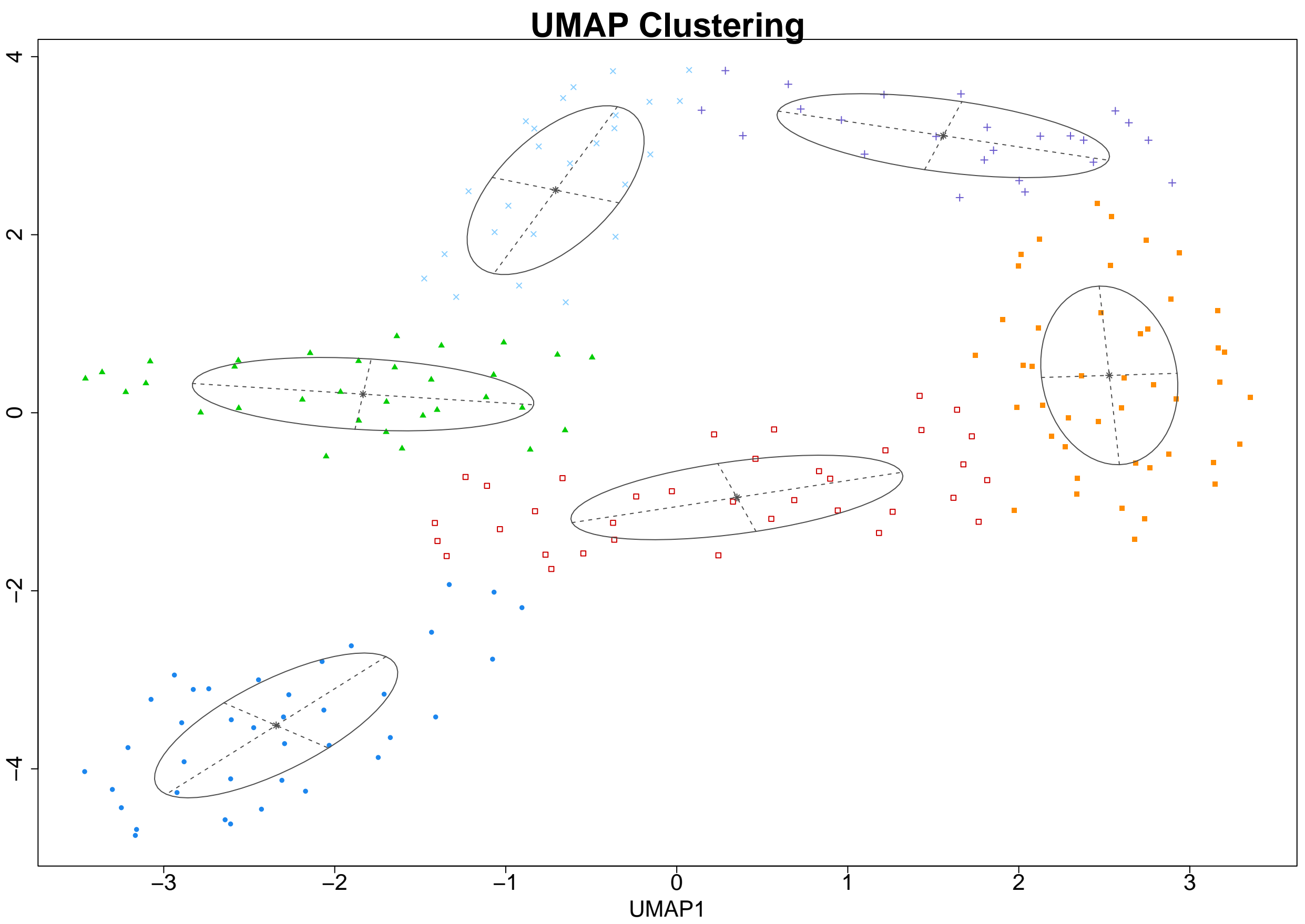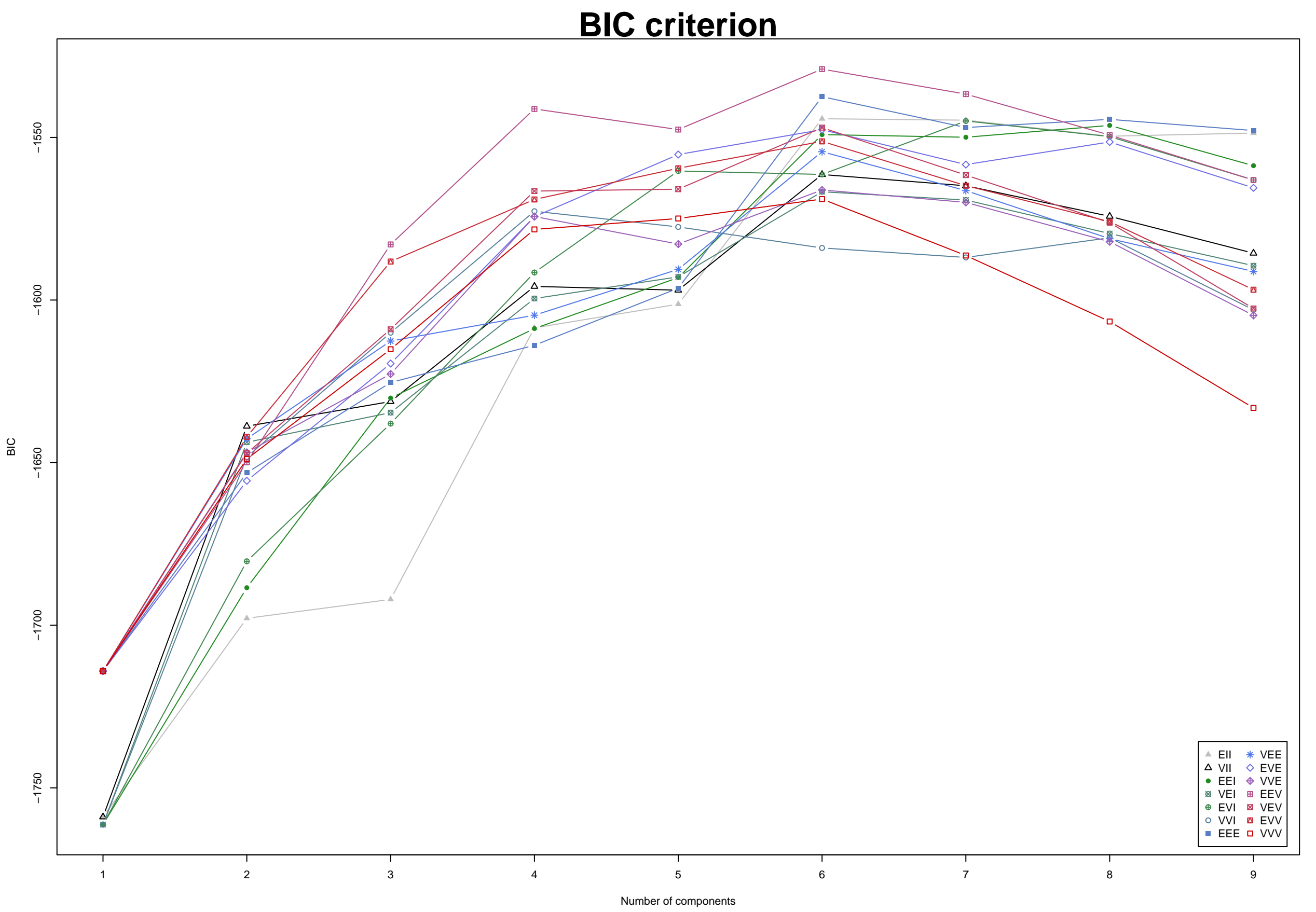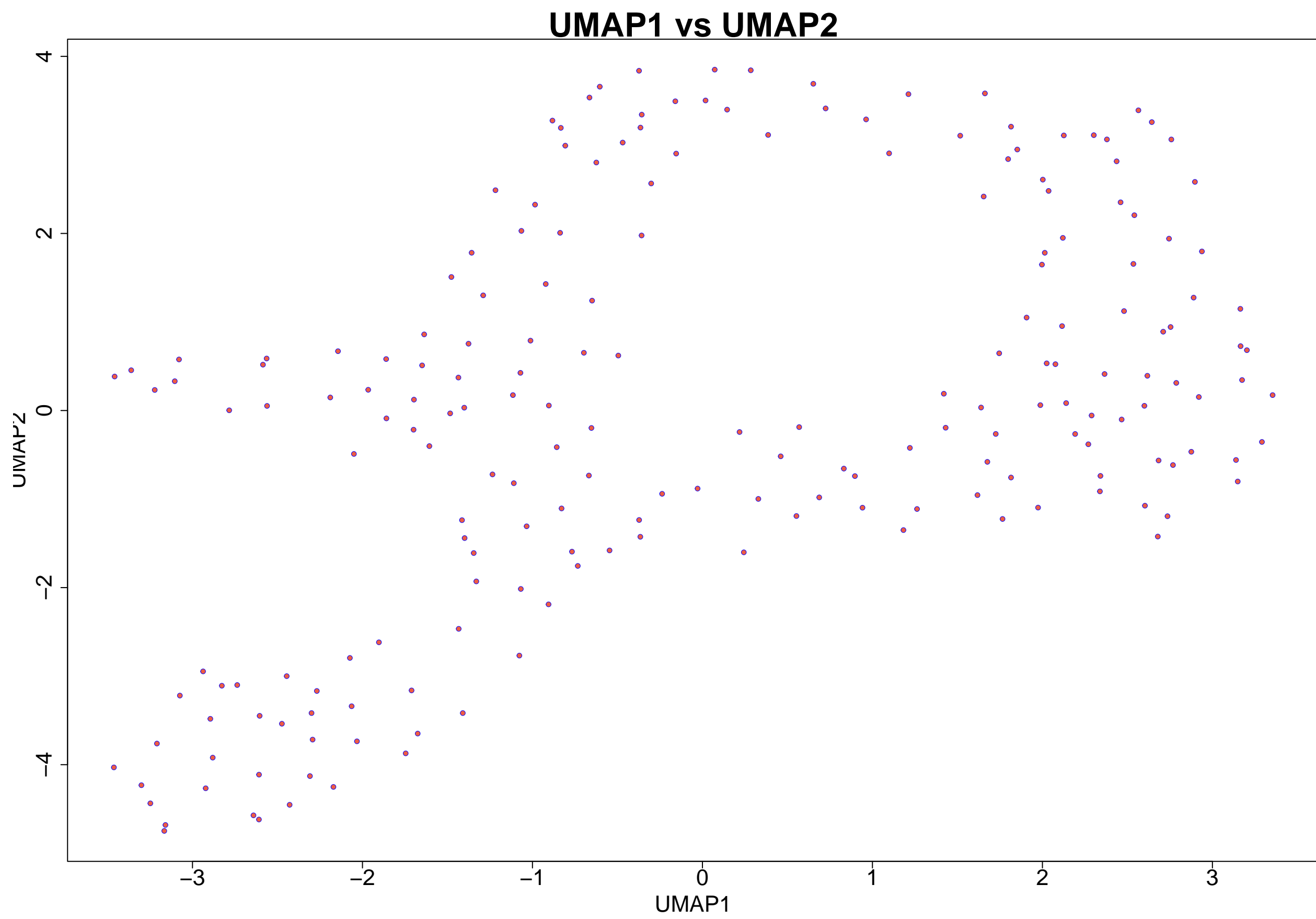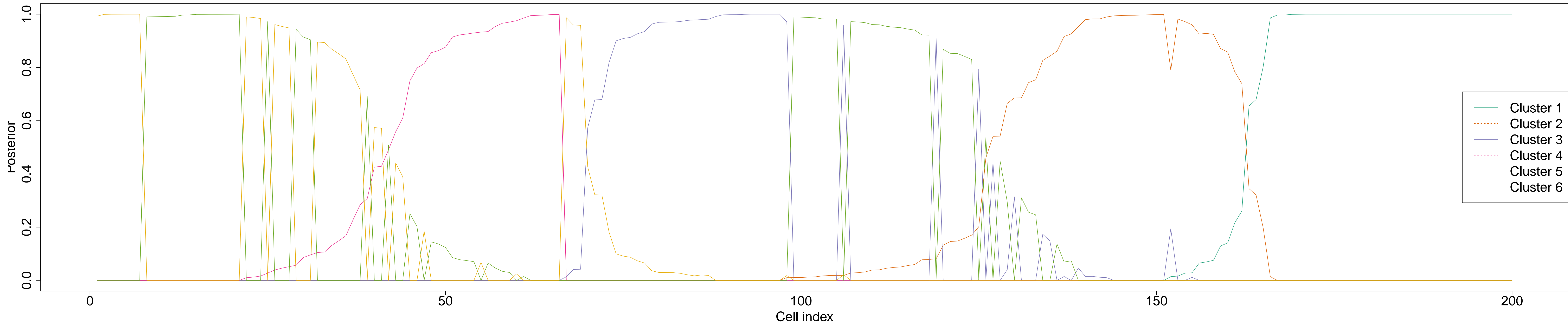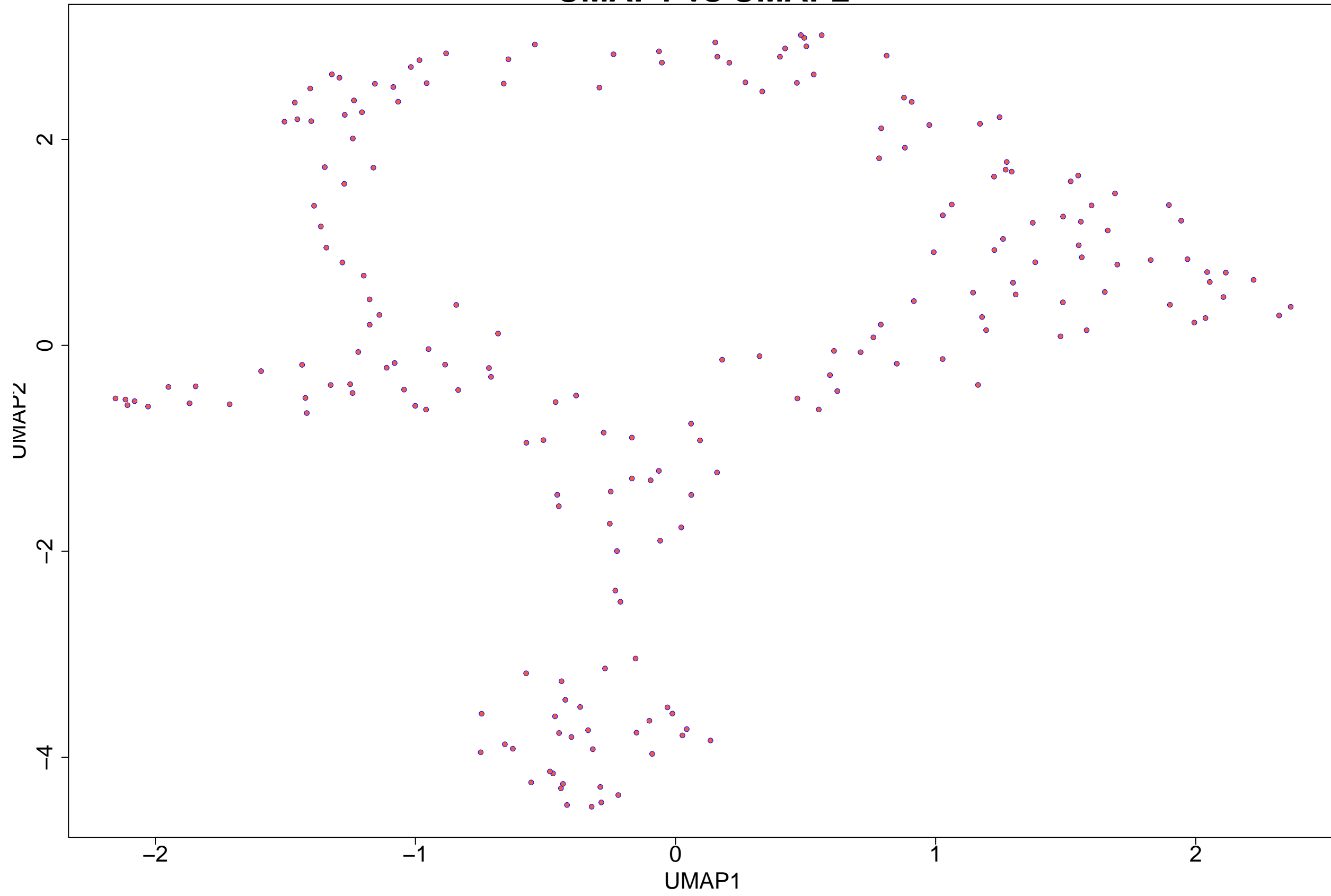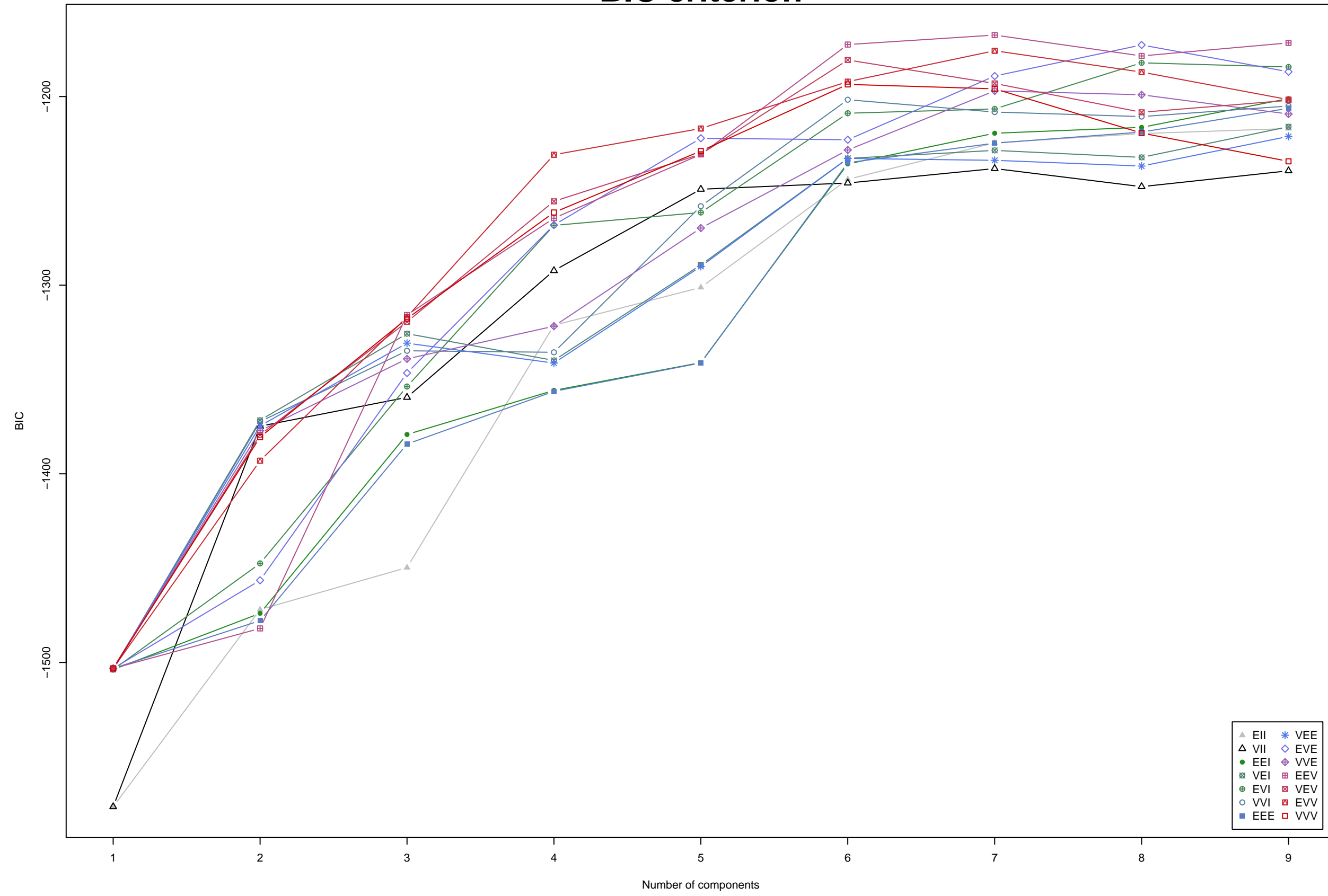**Clustering: UMAP**
n = 15 | dist = 0.2

UMAP Trajectory plot
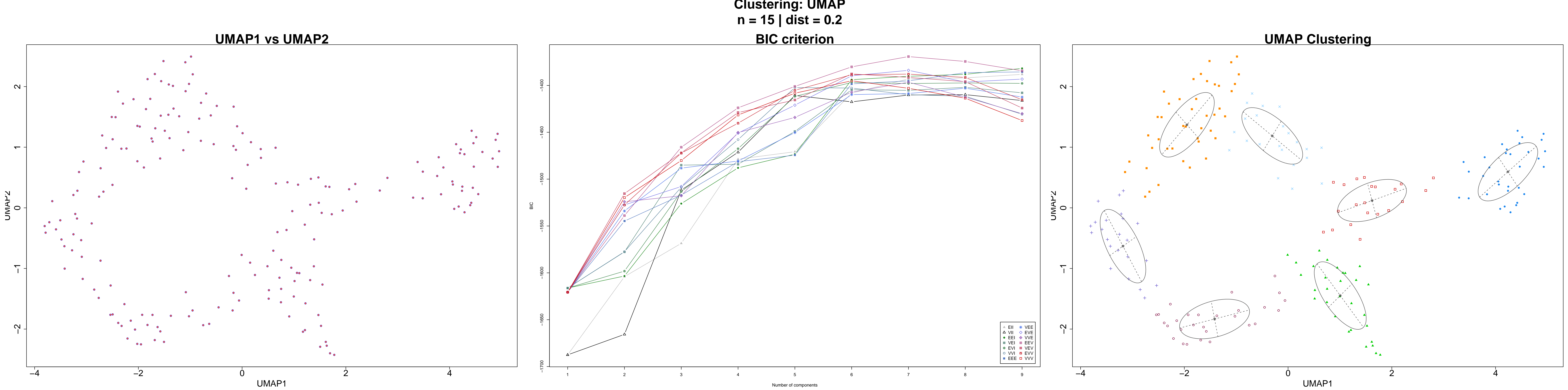
Clustering: UMAP
n = 15 | dist = 0.3

UMAP Trajectory plot

Clustering: UMAP
n = 15 | dist = 0.4

UMAP Trajectory plot

Clustering: UMAP
n = 20 | dist = 0.05

UMAP Trajectory plot
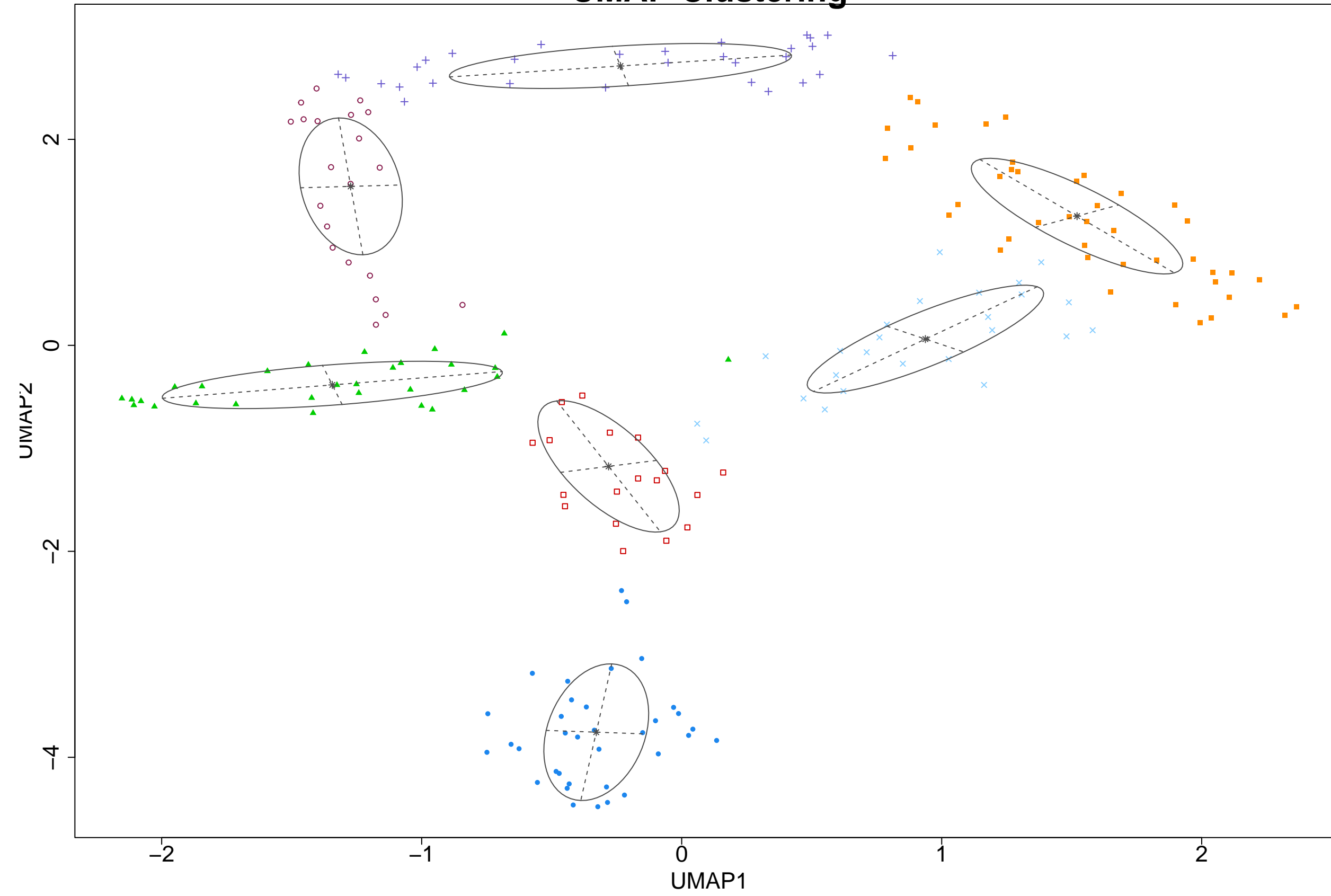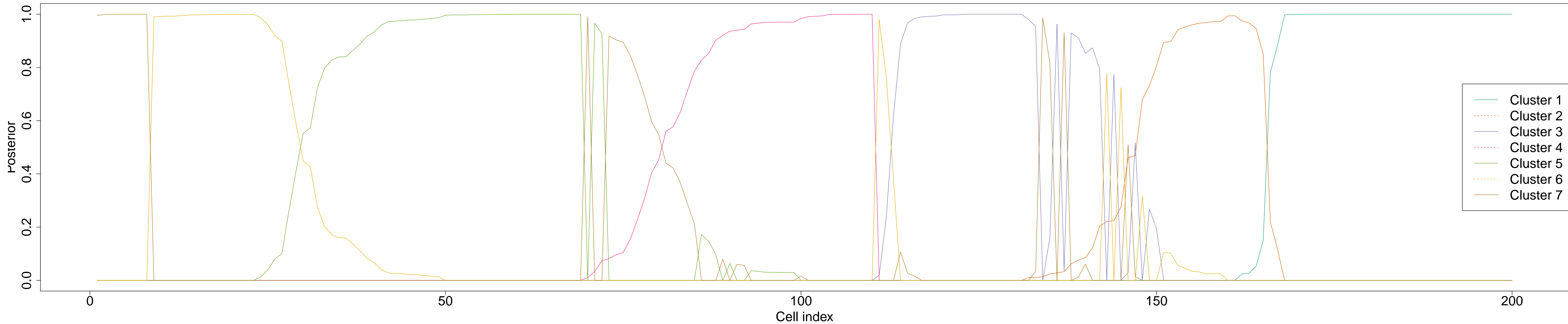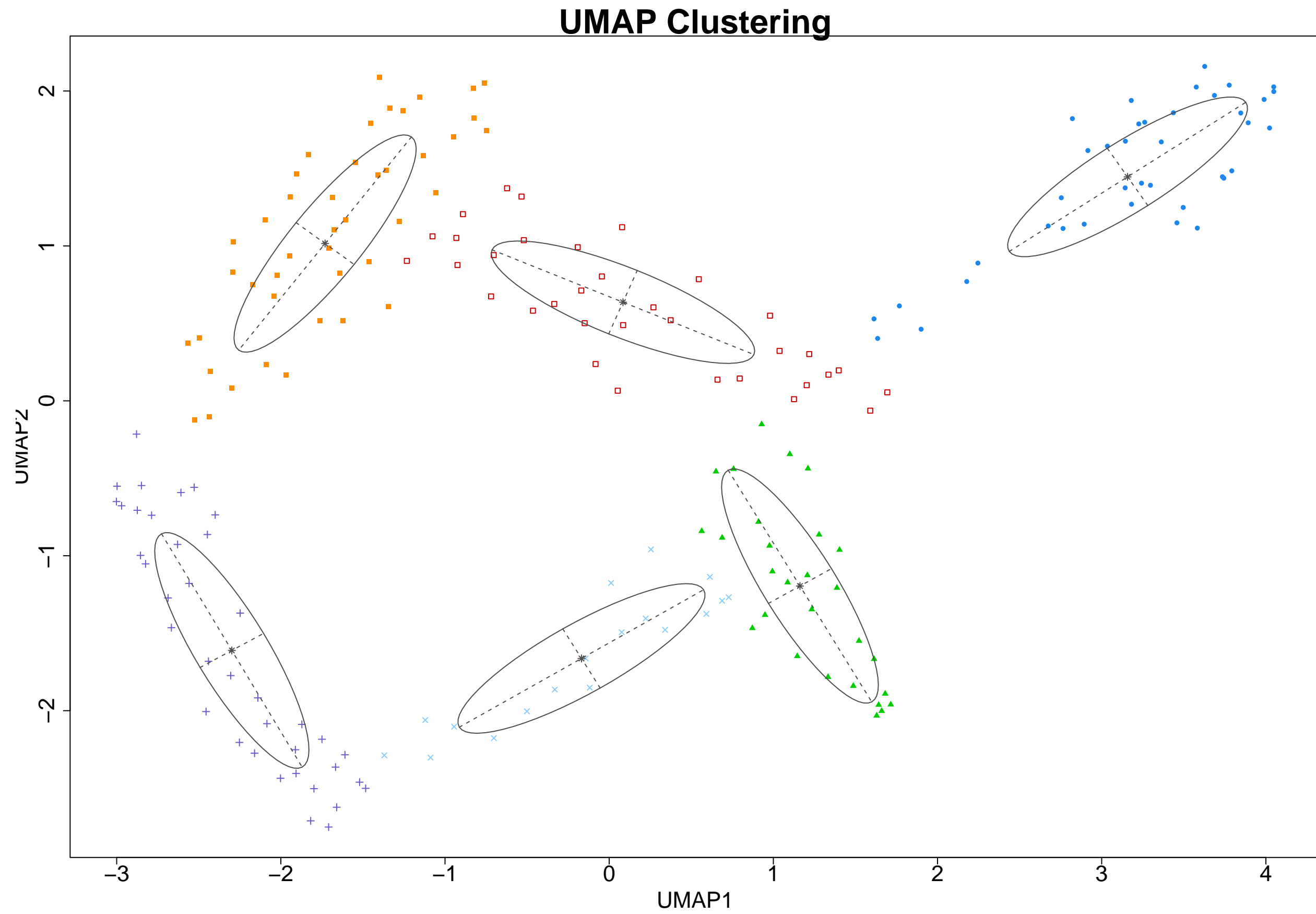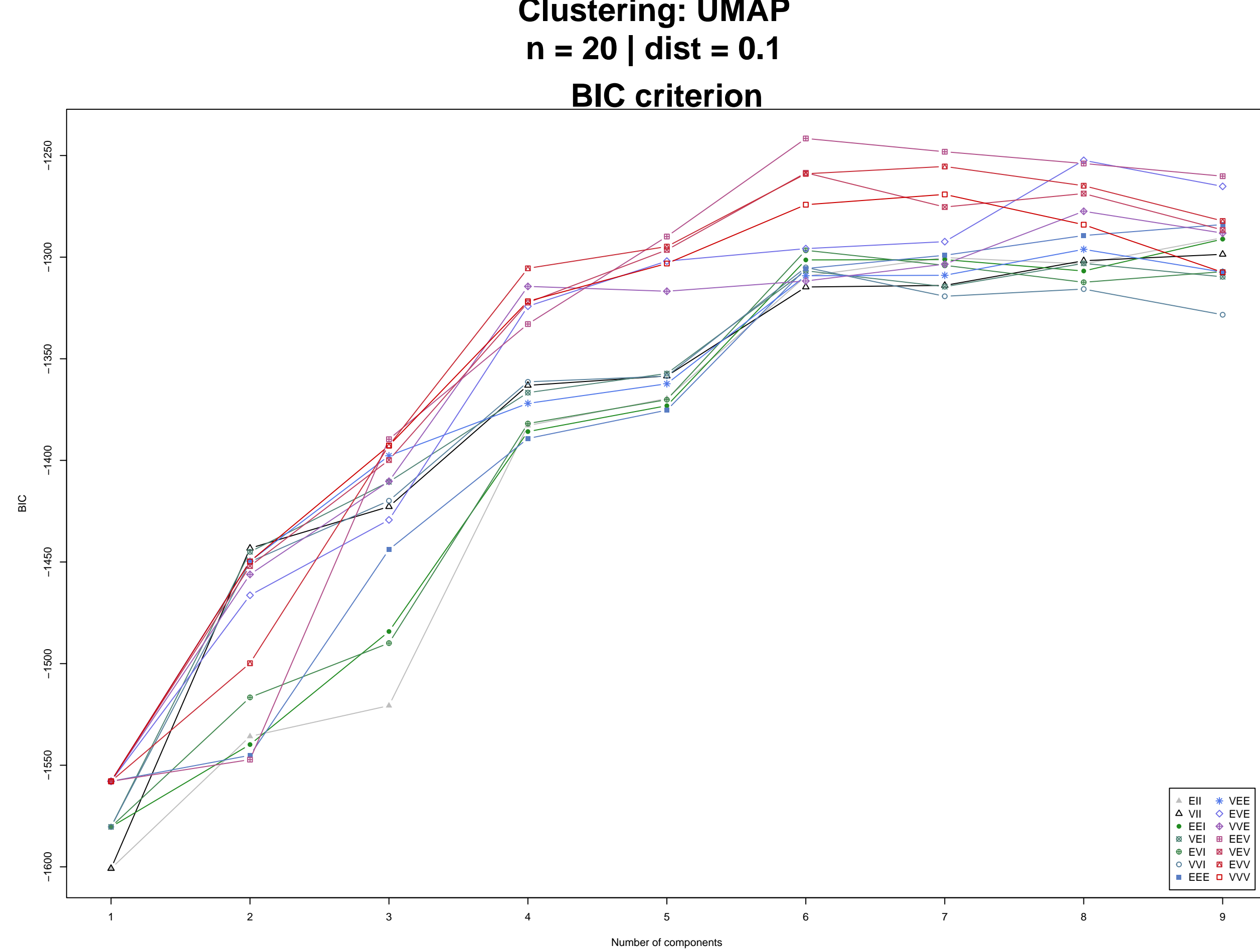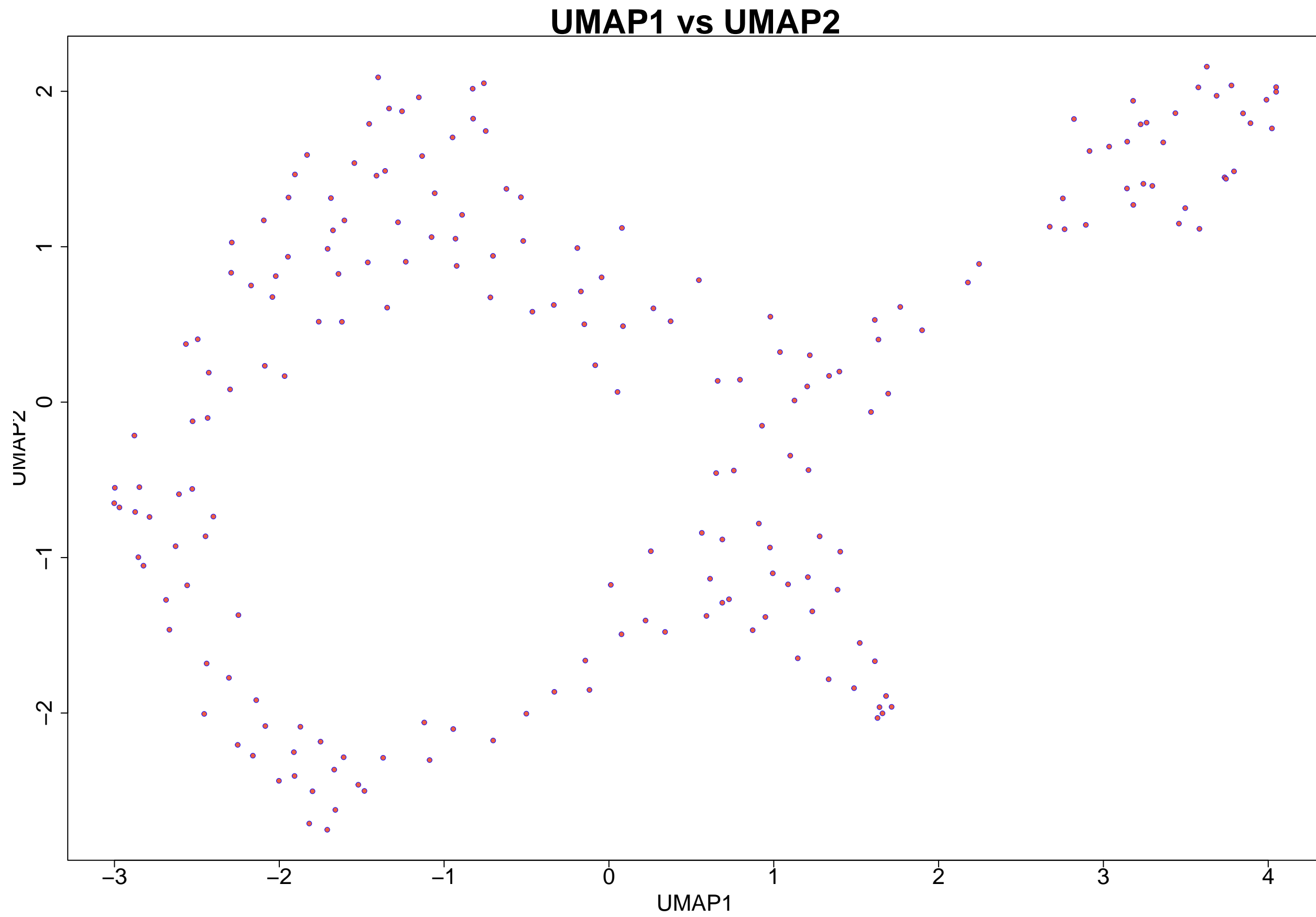
Clustering: UMAP
n = 20 | dist = 0.1

UMAP Trajectory plot

Clustering: UMAP
n = 20 | dist = 0.2

UMAP Trajectory plot

Clustering: UMAP
n = 20 | dist = 0.3

UMAP Trajectory plot

Legend:
- Cluster 1
- Cluster 2
- Cluster 3
- Cluster 4
- Cluster 5
- Cluster 6
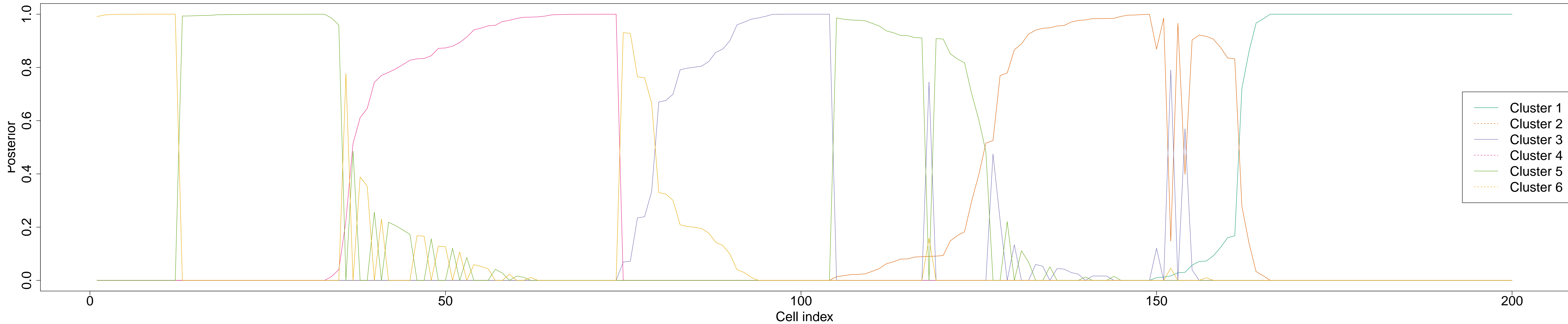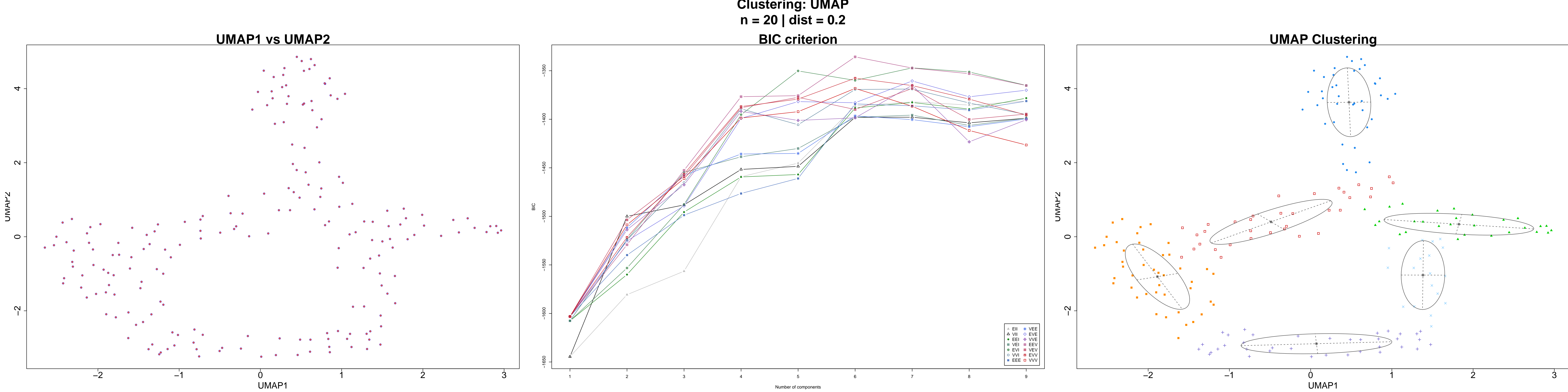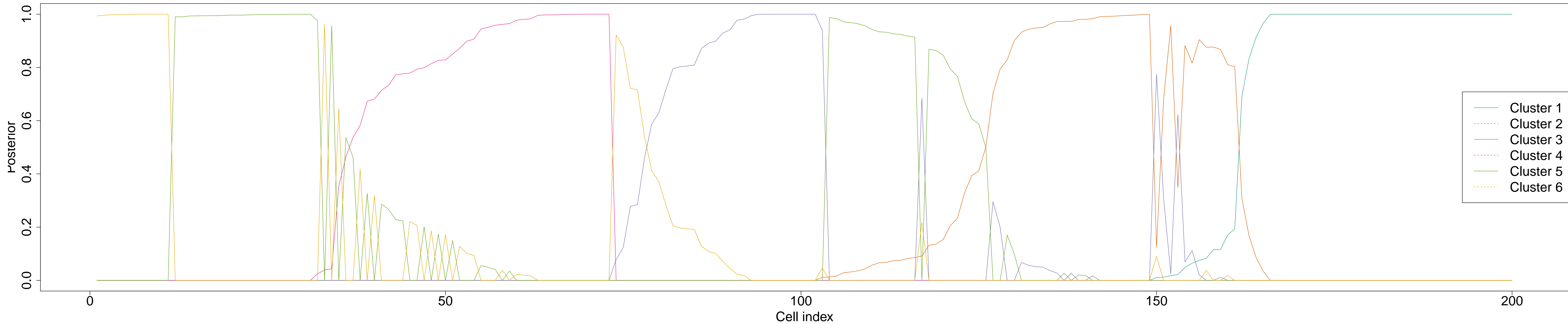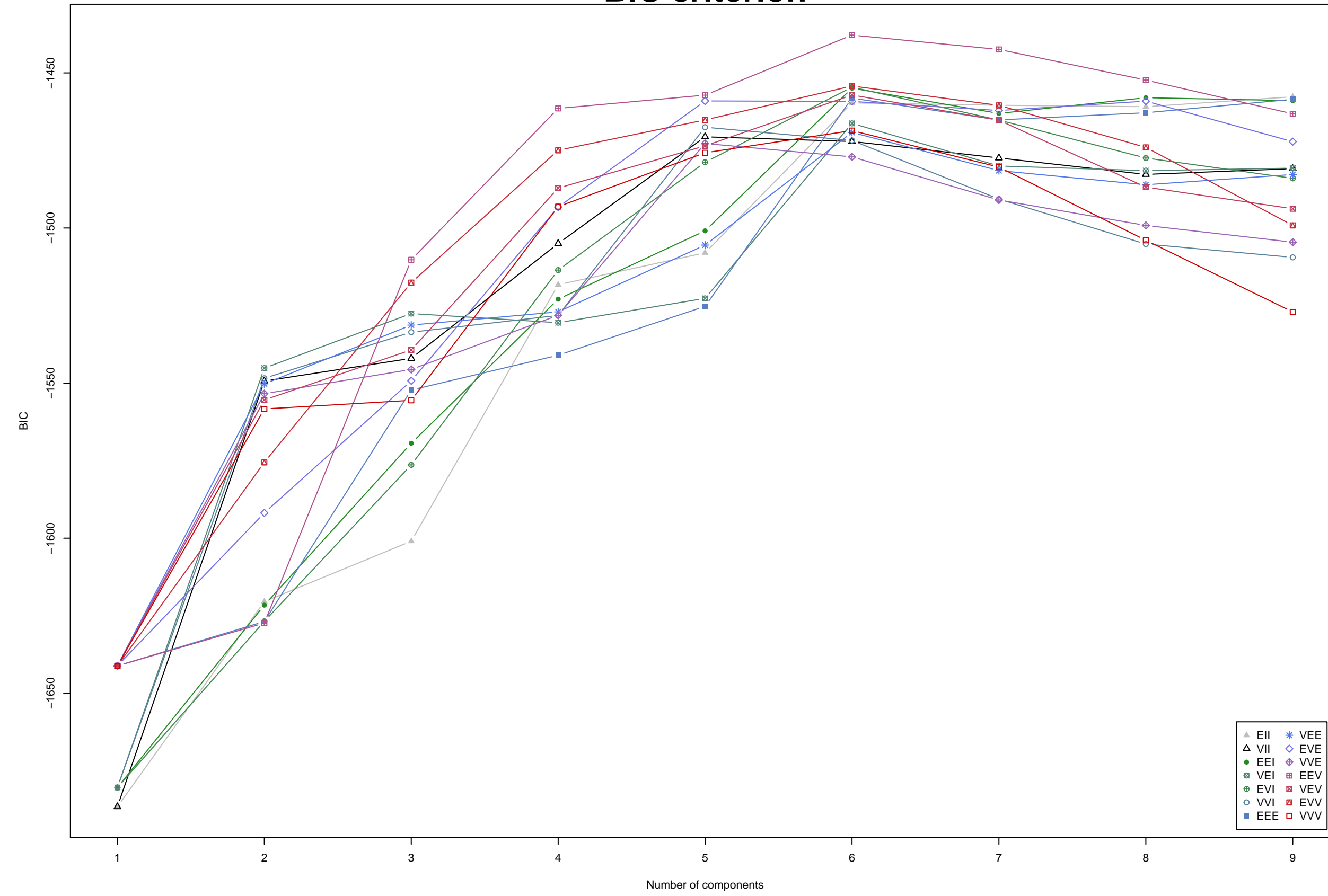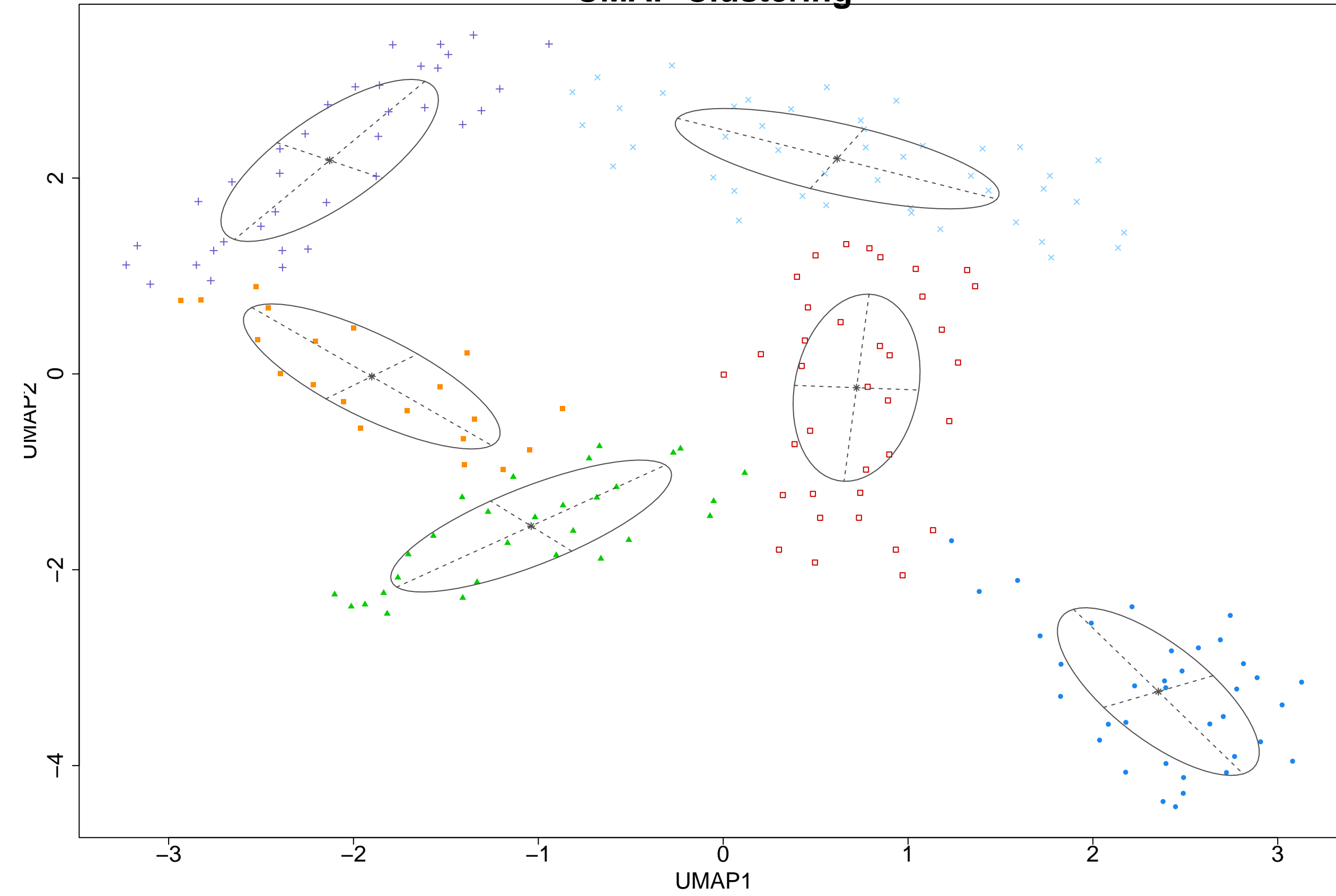
Clustering: UMAP
n = 20 | dist = 0.4
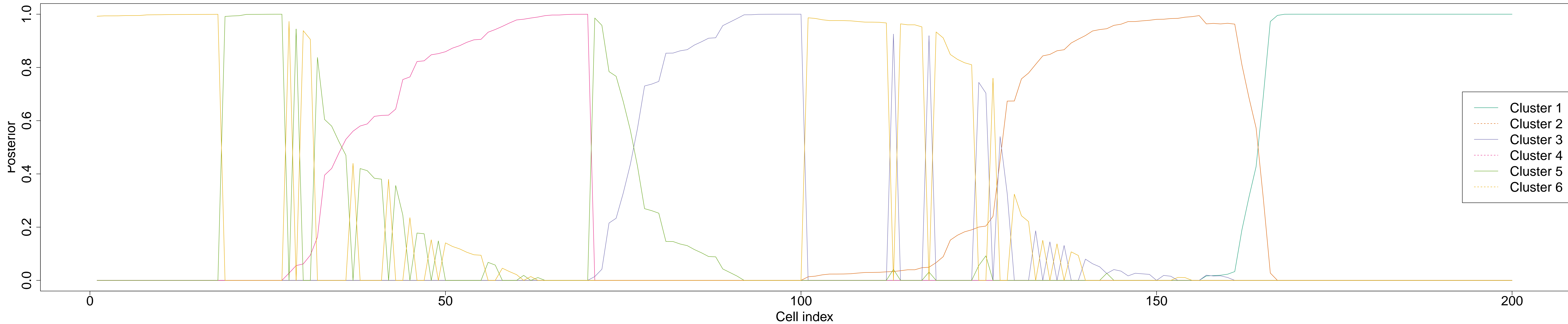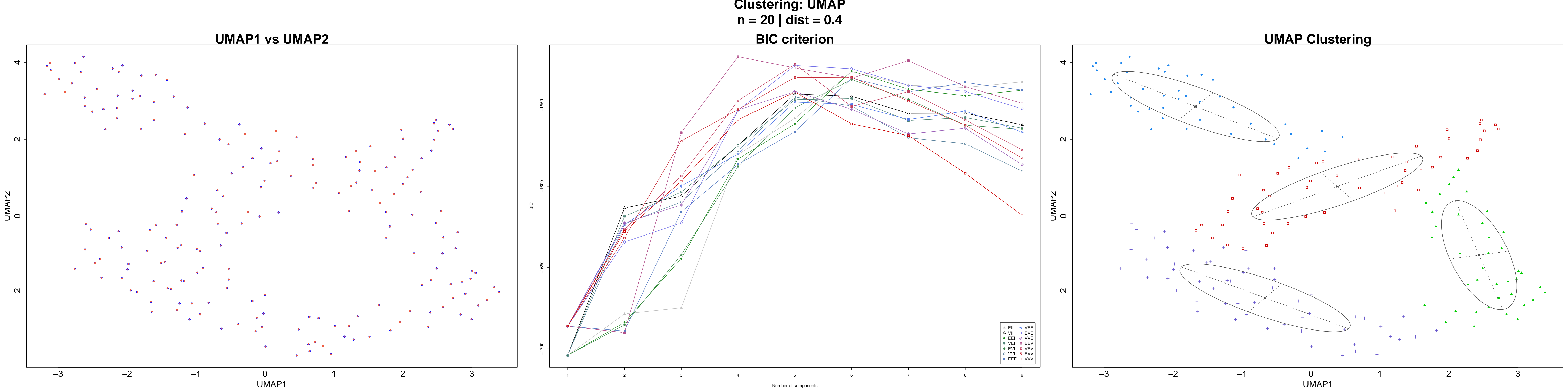
UMAP Trajectory plot
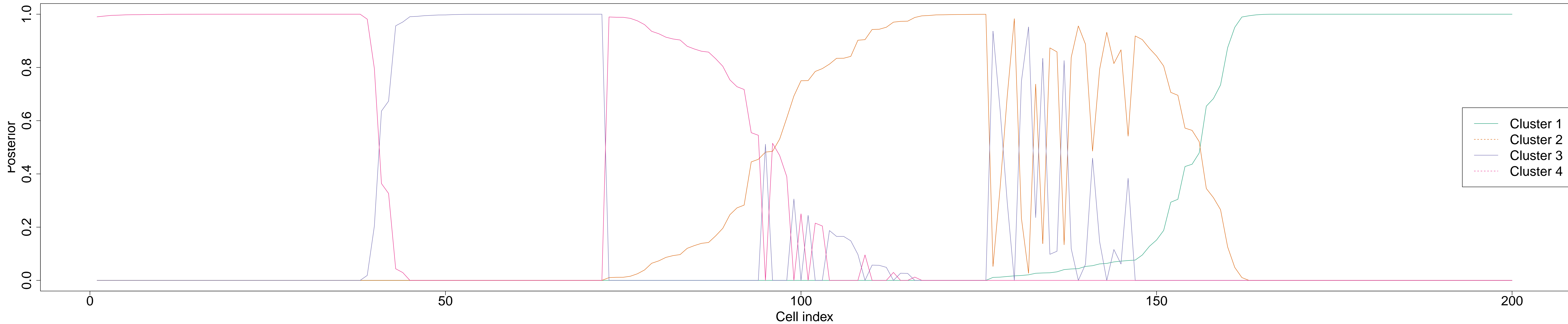
Clustering: UMAP
n = 25 | dist = 0.05
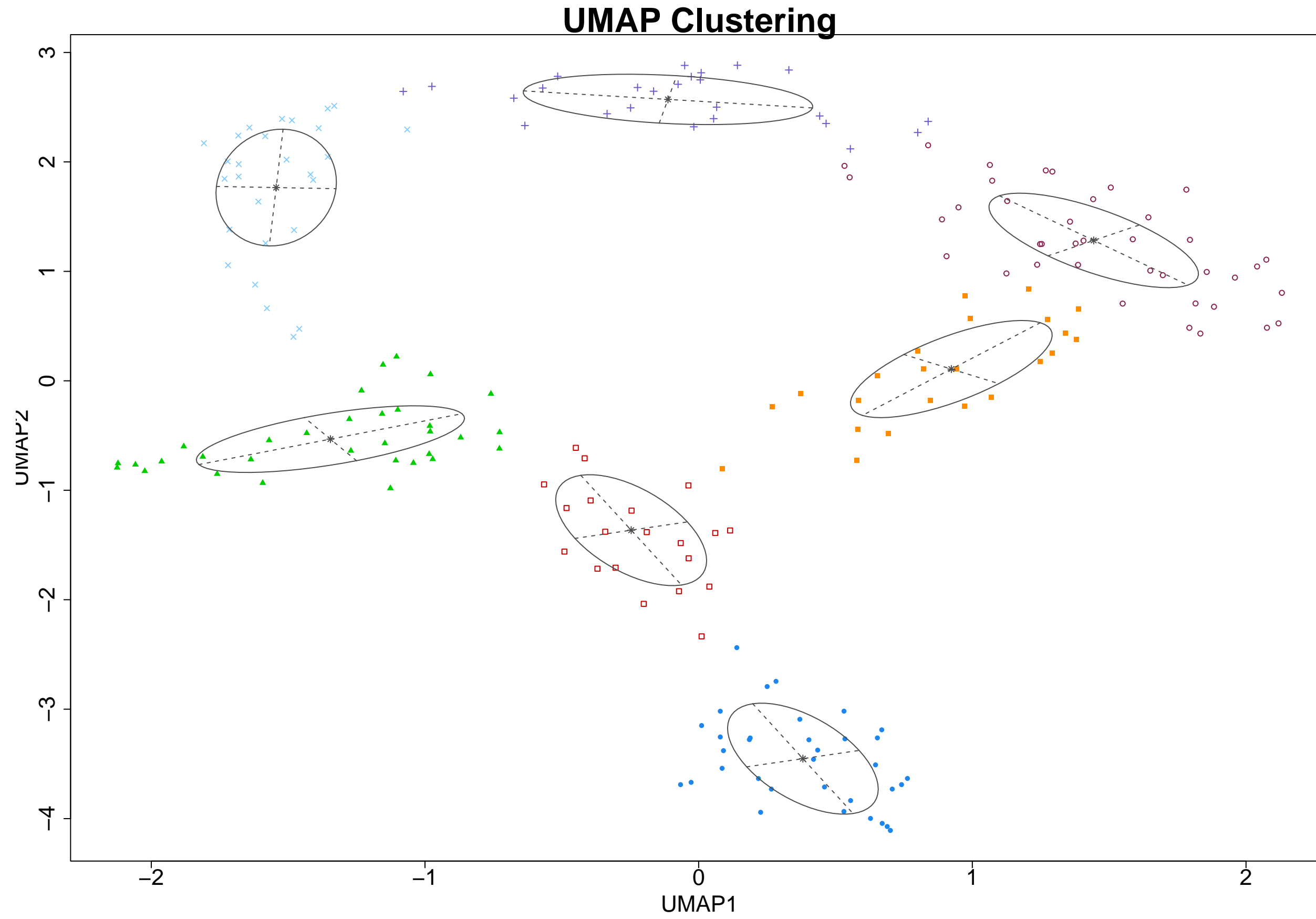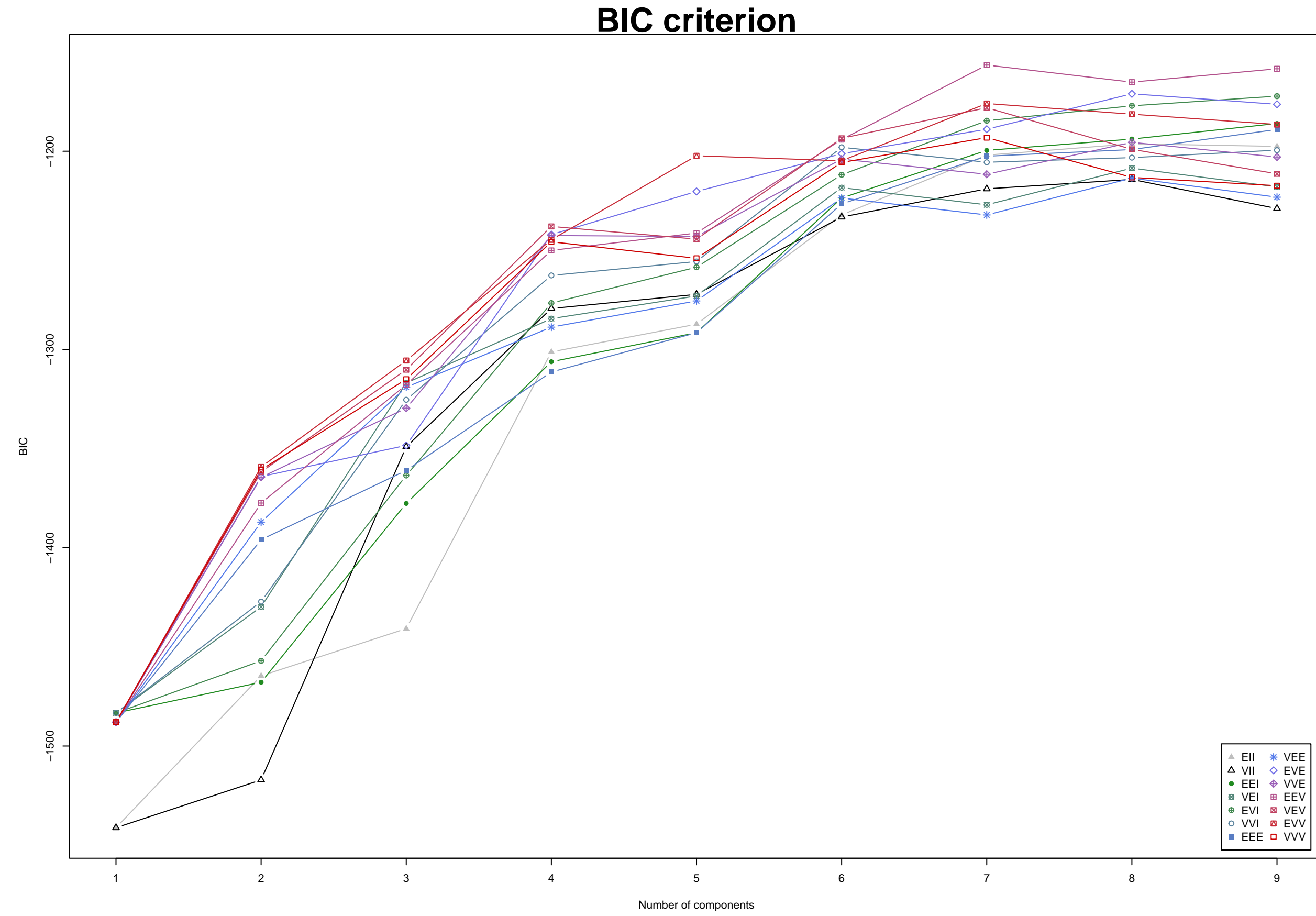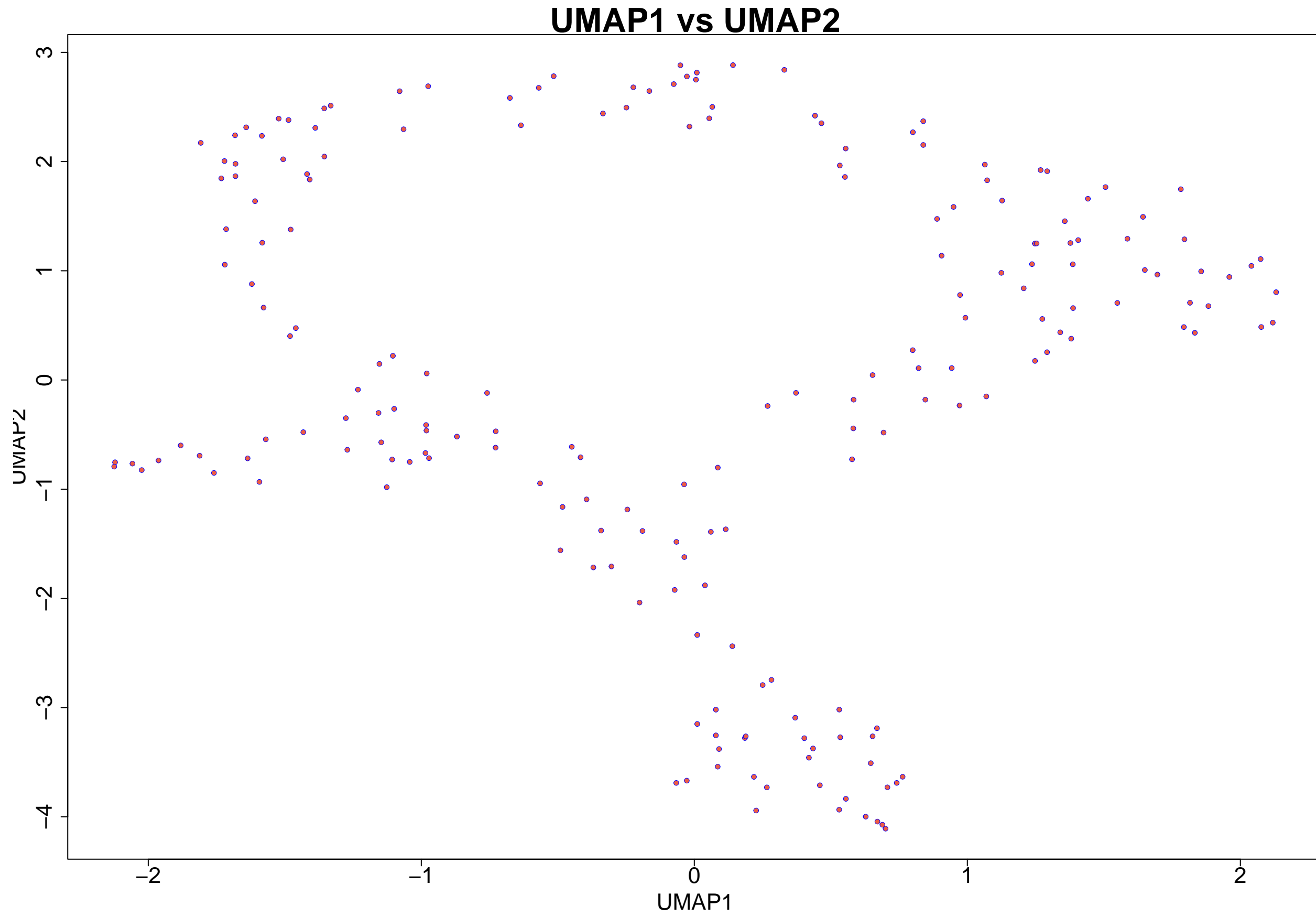
UMAP Trajectory plot

Clustering: UMAP
n = 25 | dist = 0.1

UMAP Trajectory plot

Clustering: UMAP
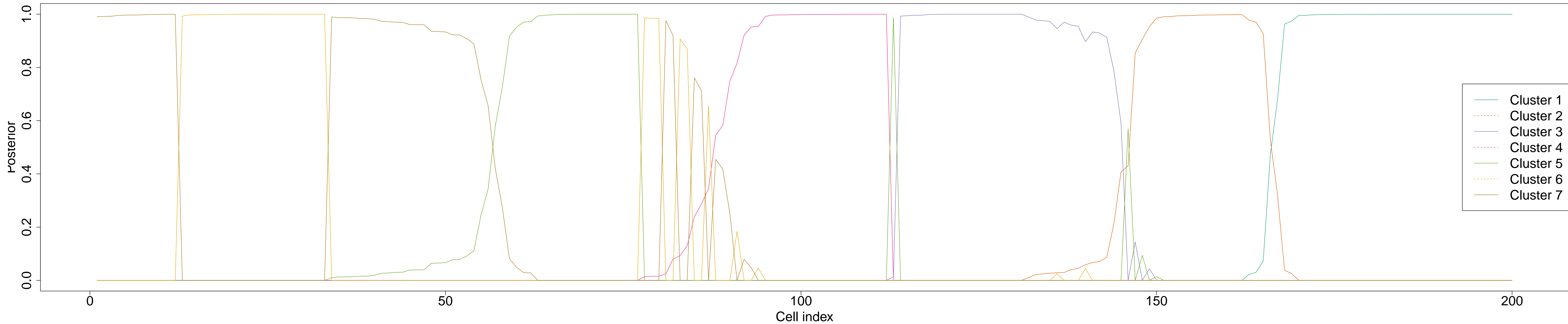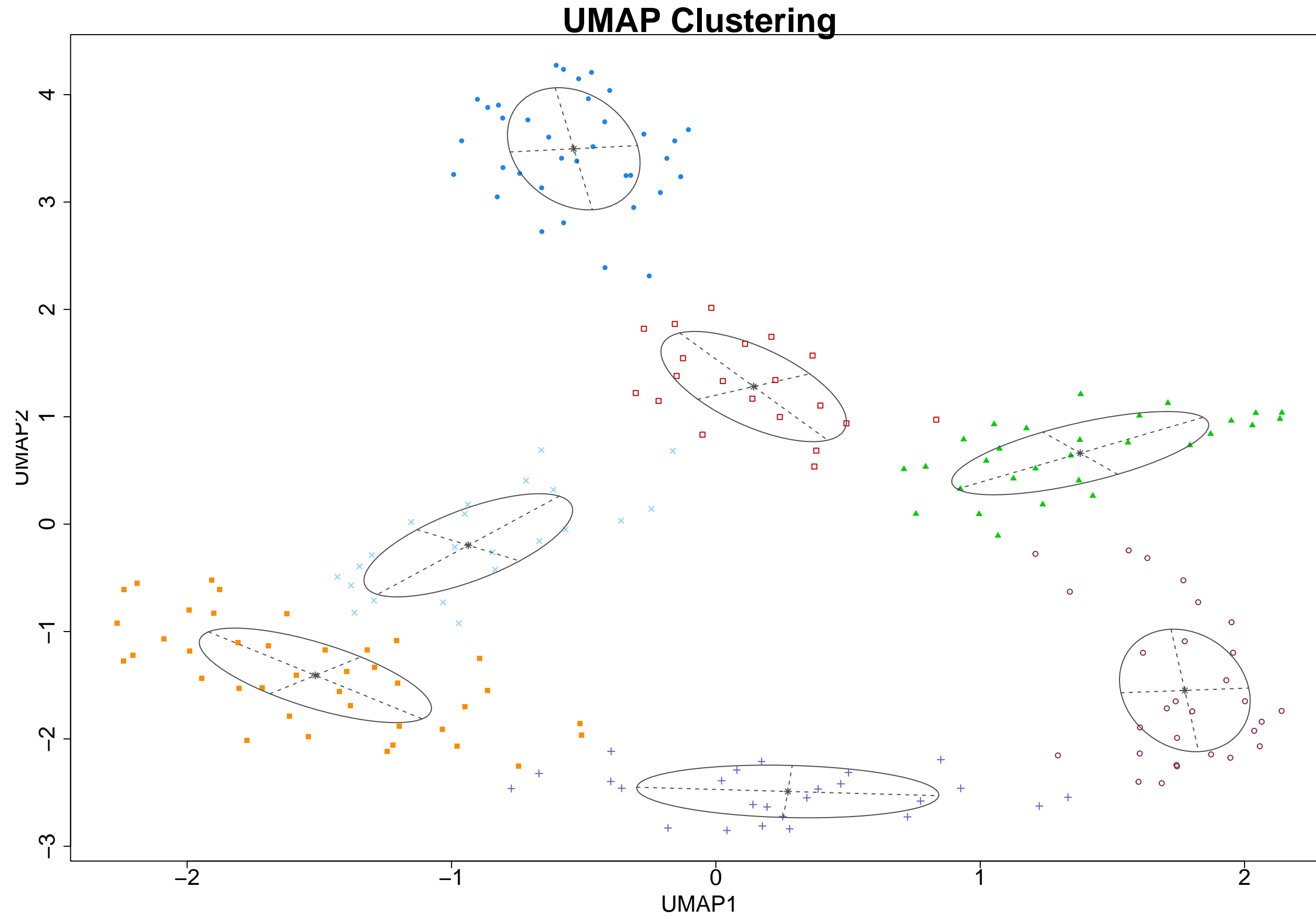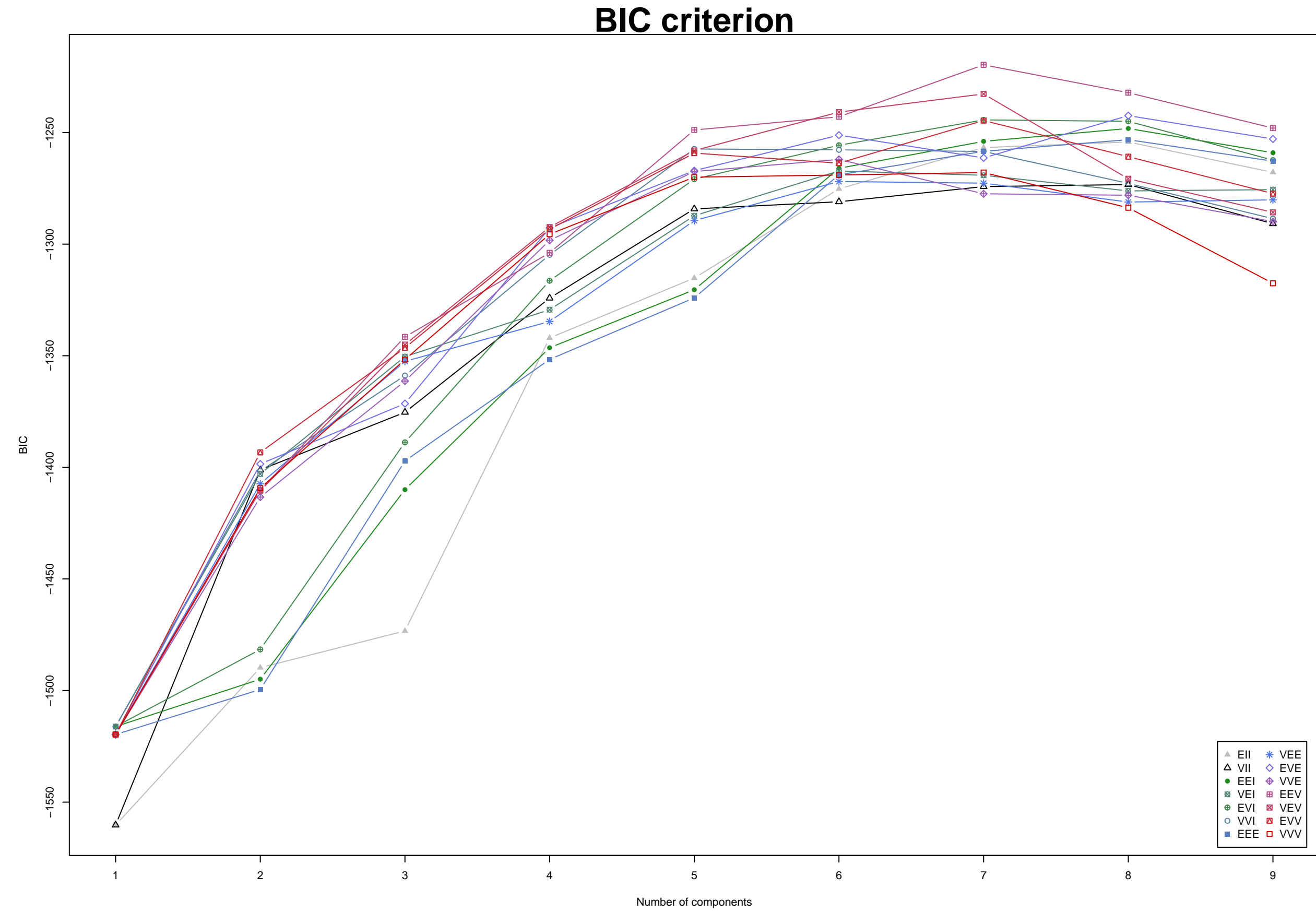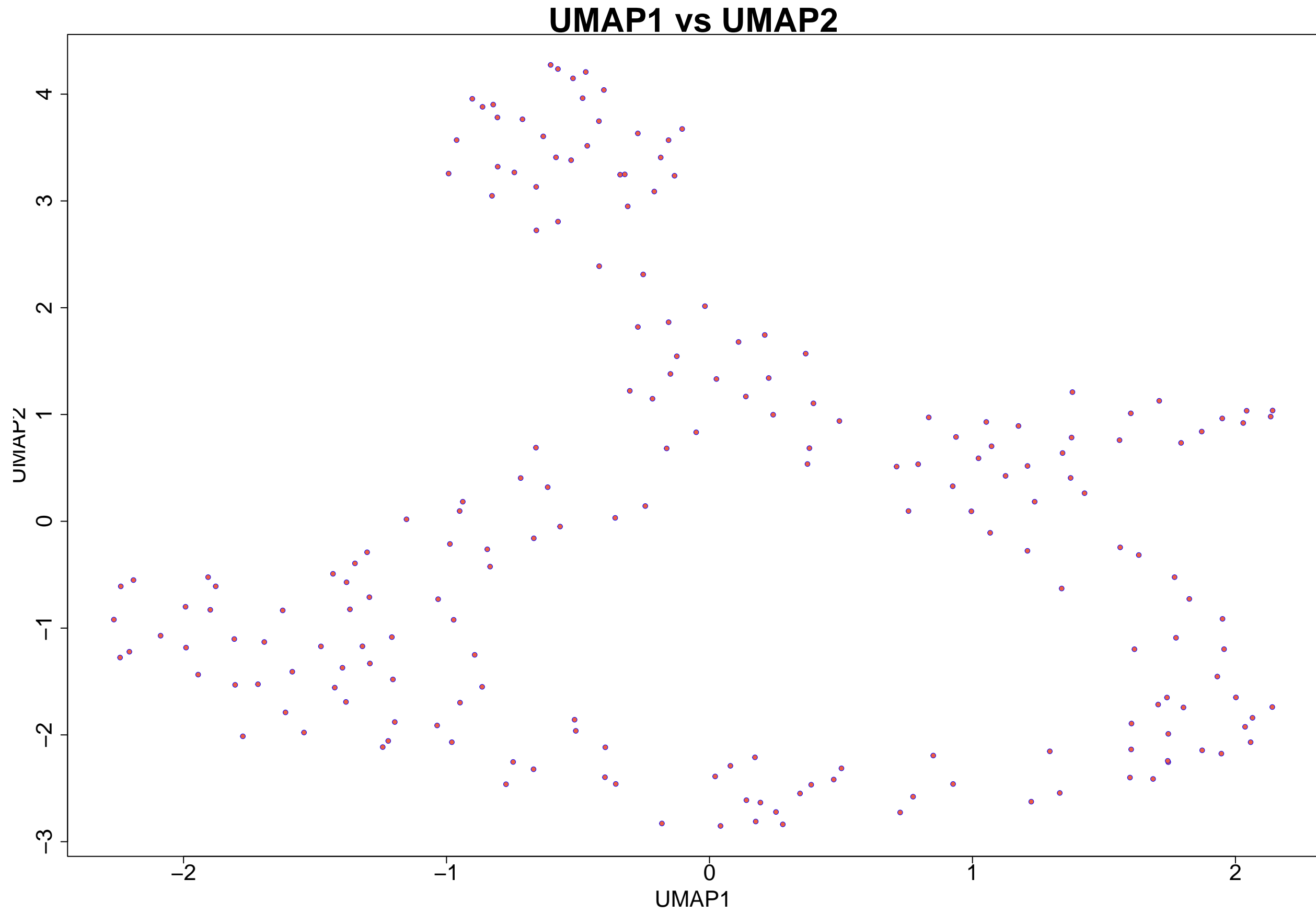n = 25 | dist = 0.2

UMAP Trajectory plot
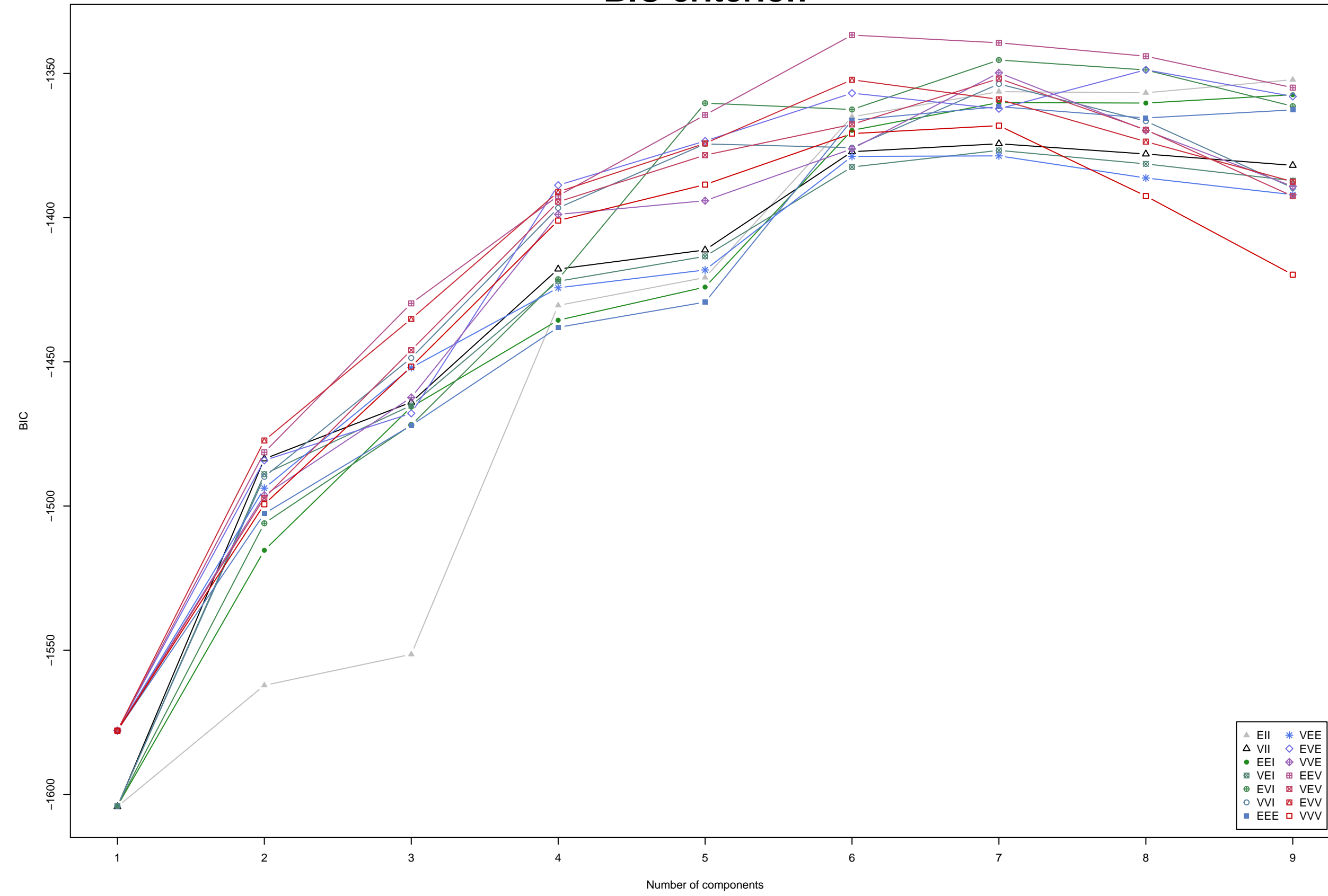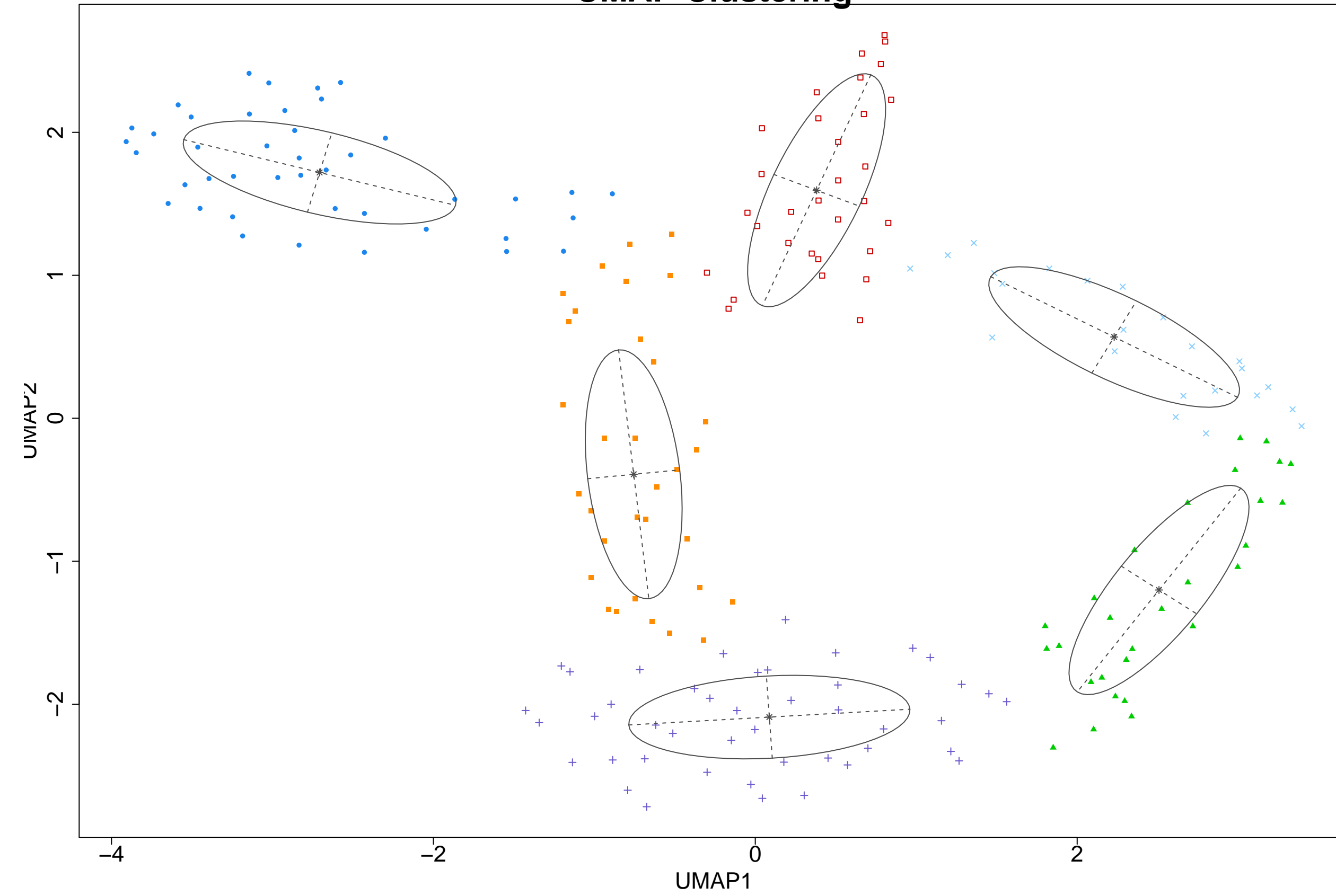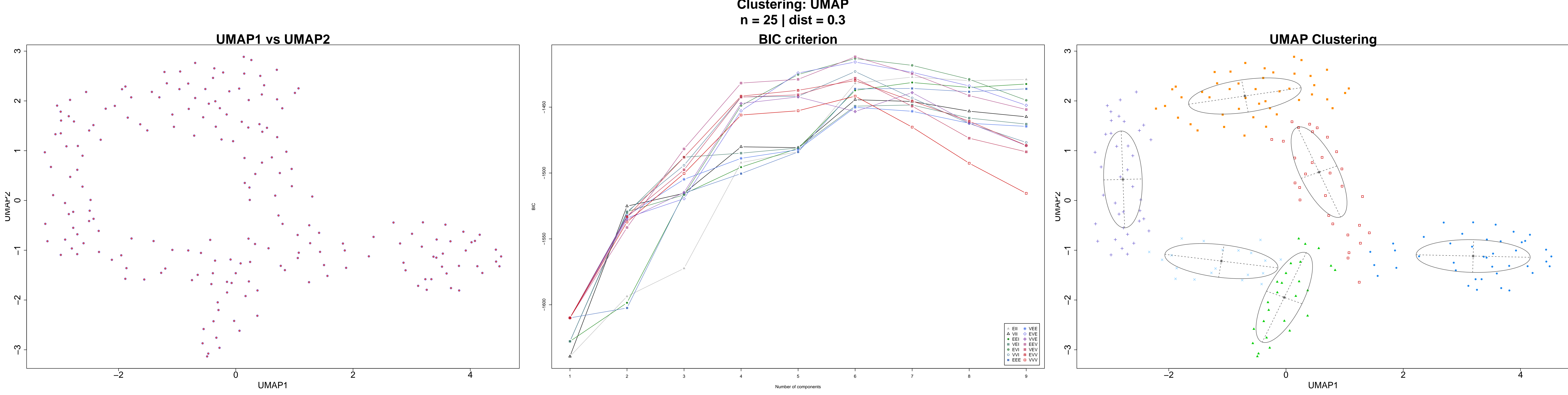
Clustering: UMAP
n = 25 | dist = 0.3

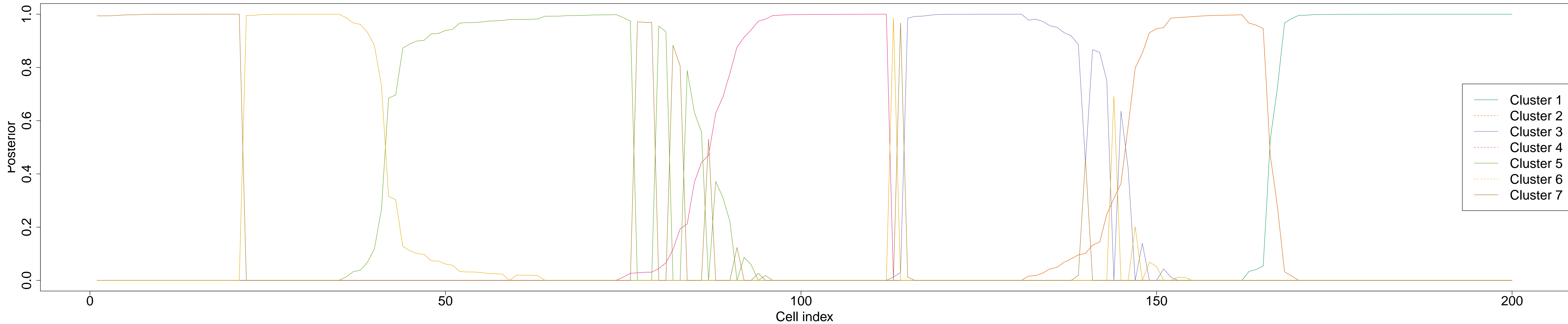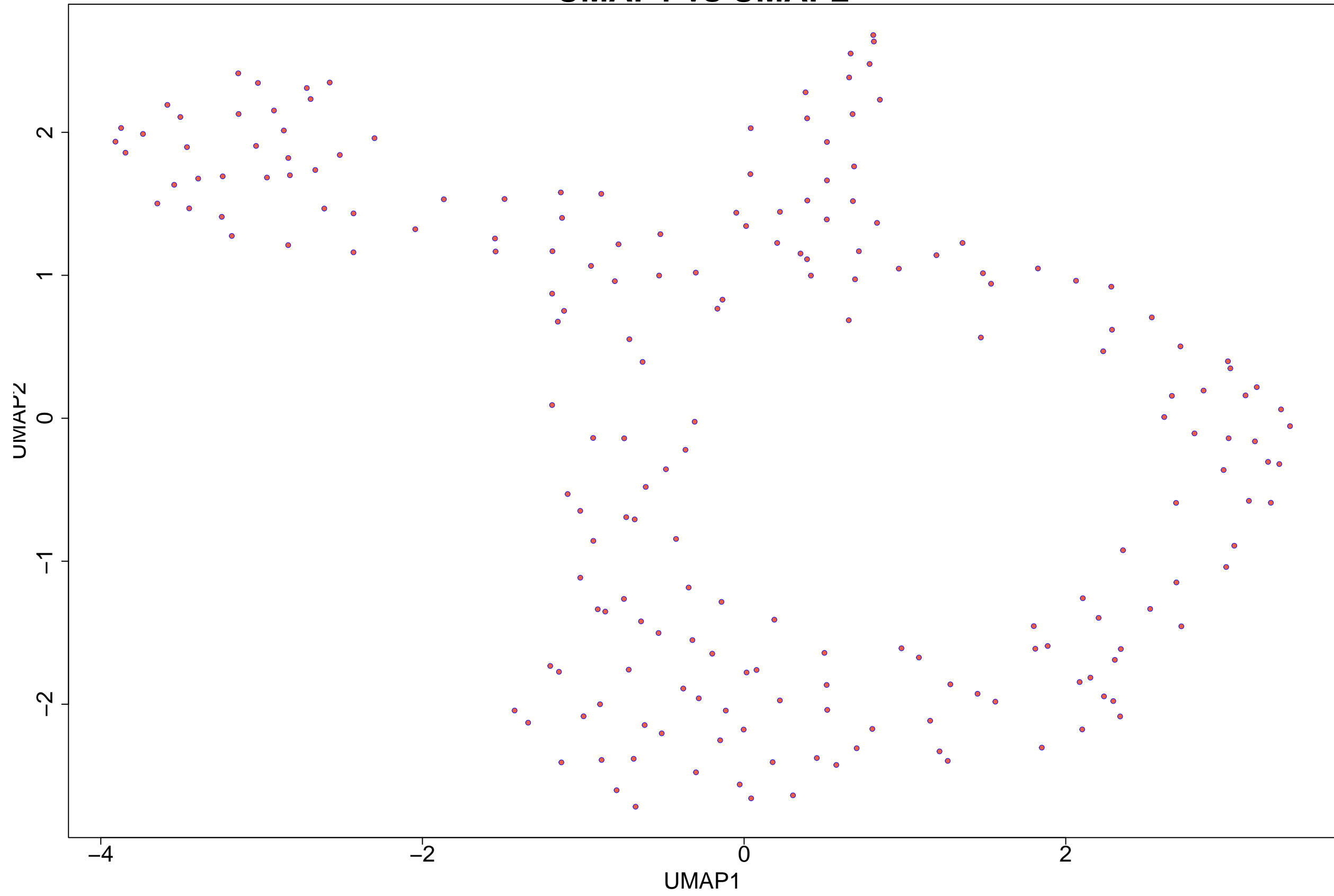**UMAP Trajectory plot**

Clustering: UMAP
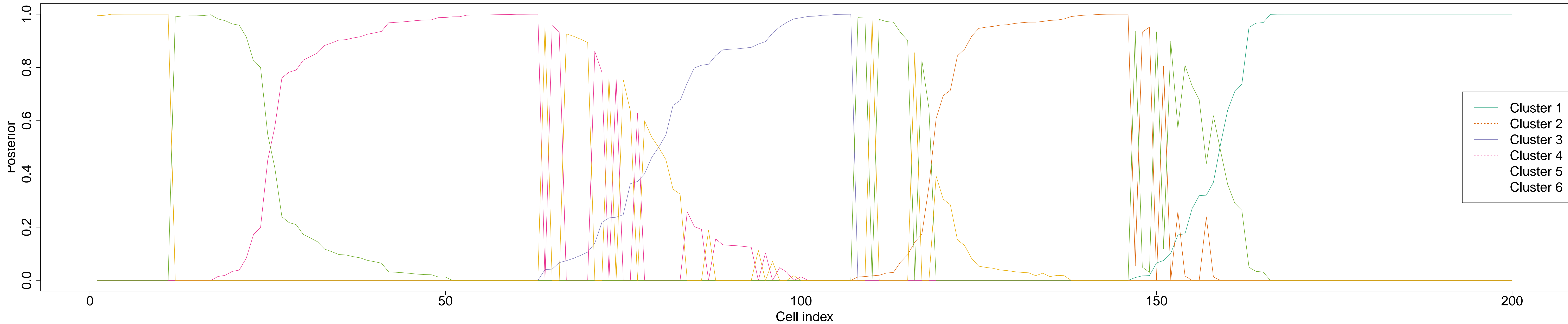**n = 25 | dist = 0.4**

UMAP Trajectory plot
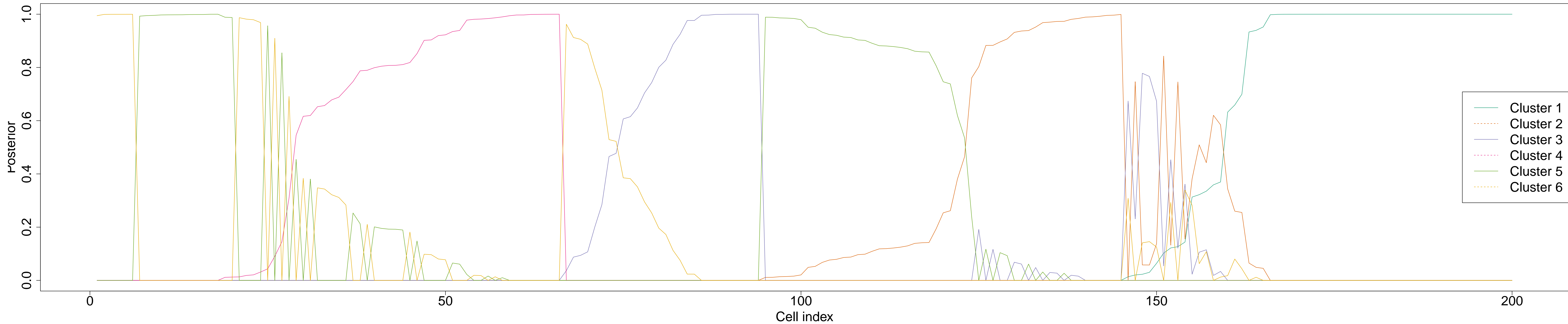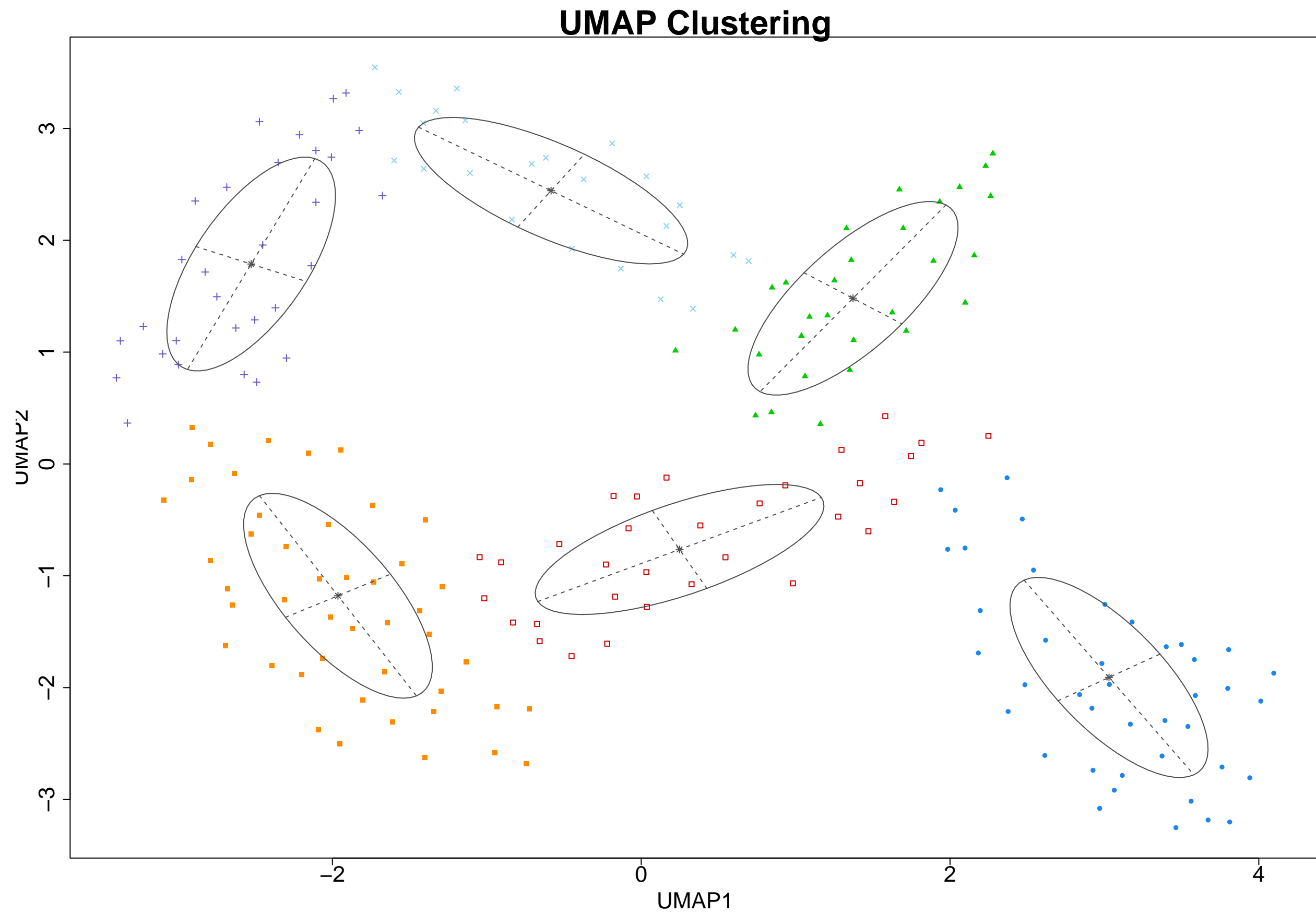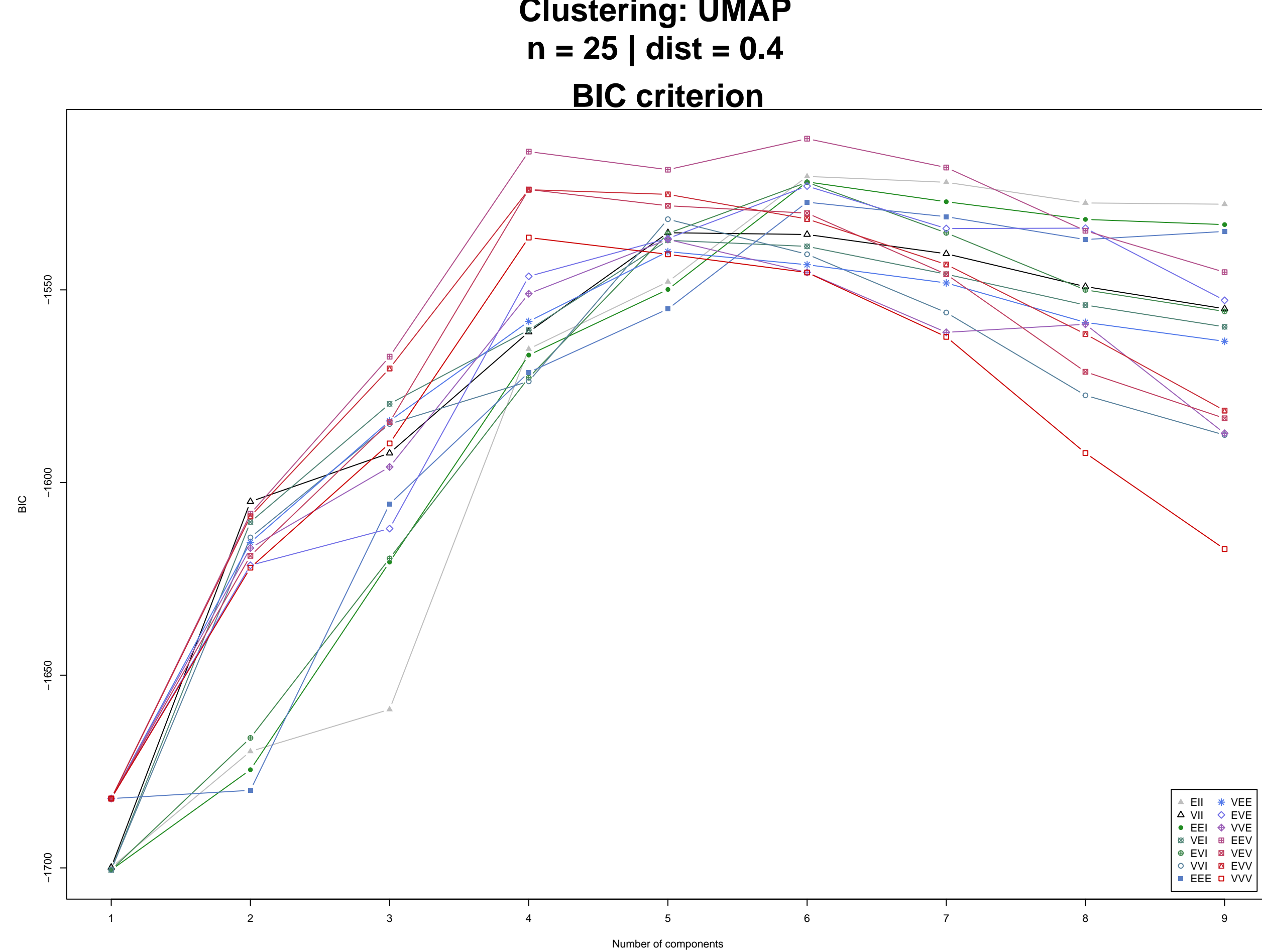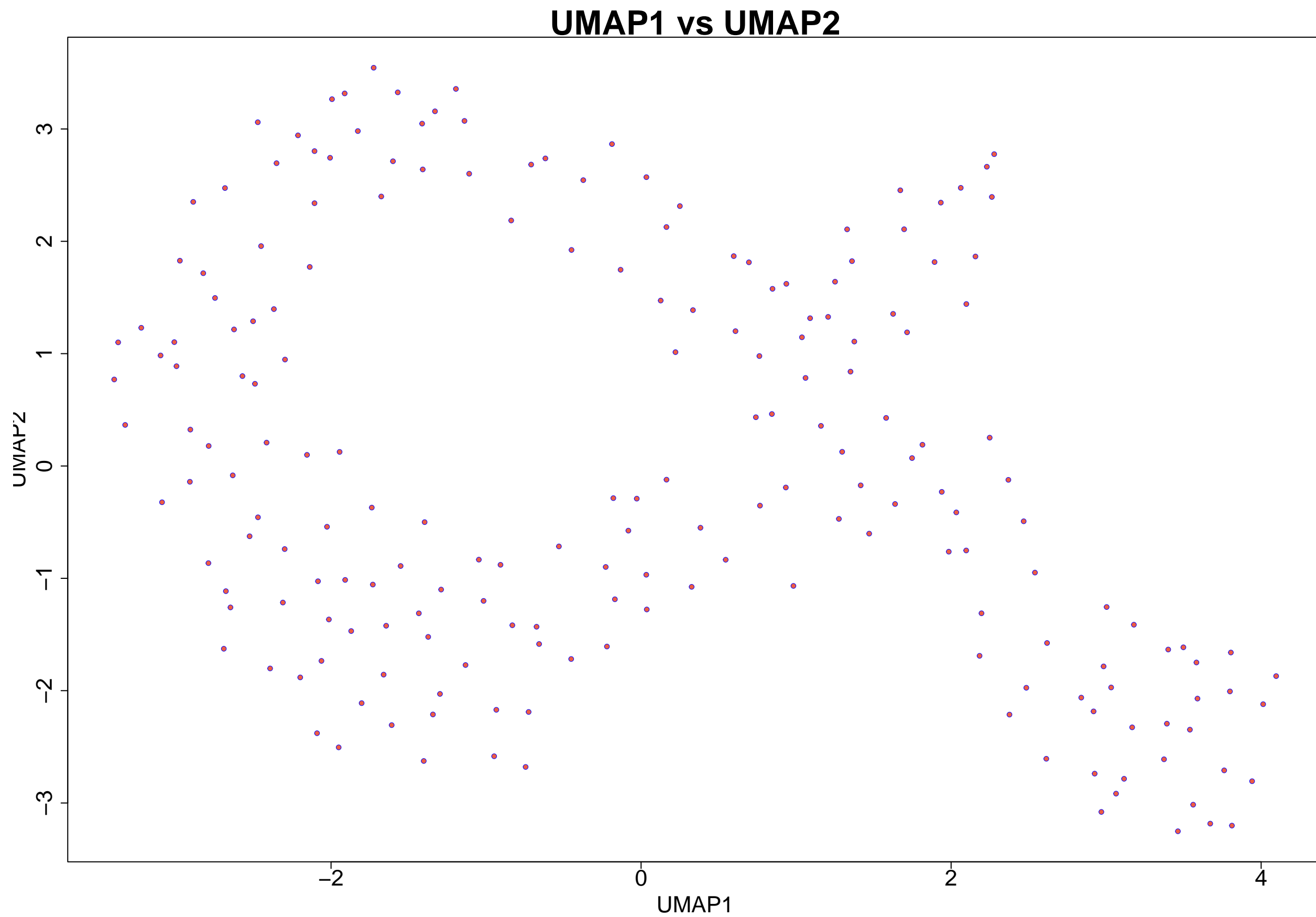
Clustering: UMAP
n = 30 | dist = 0.05
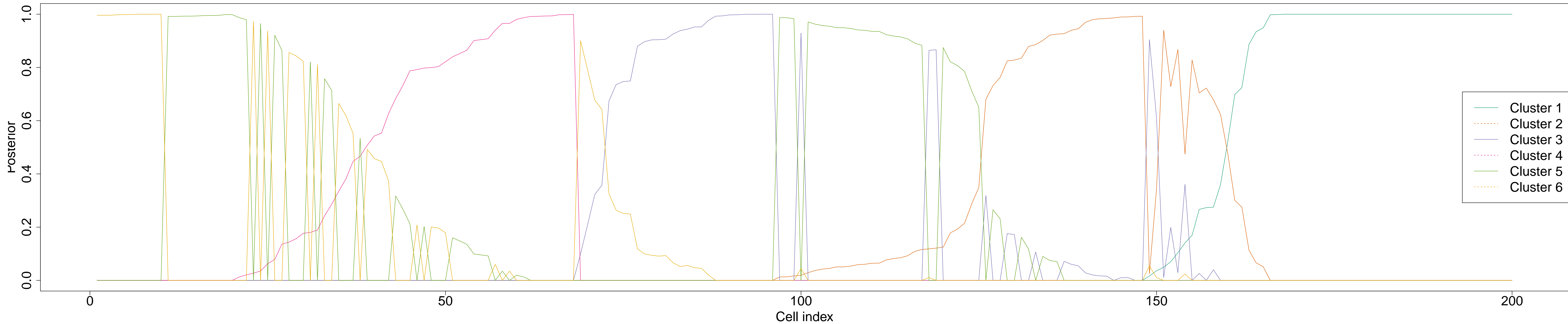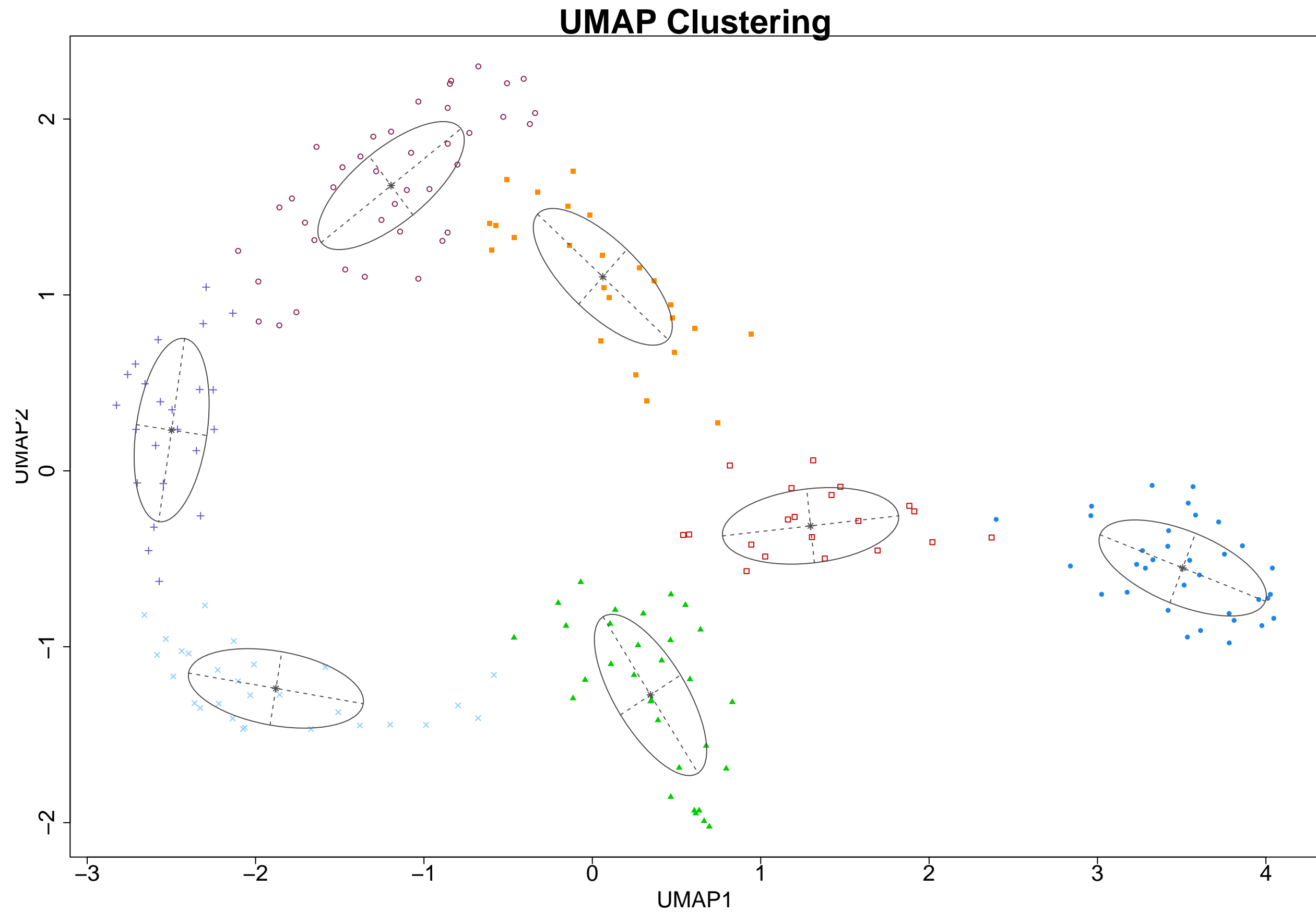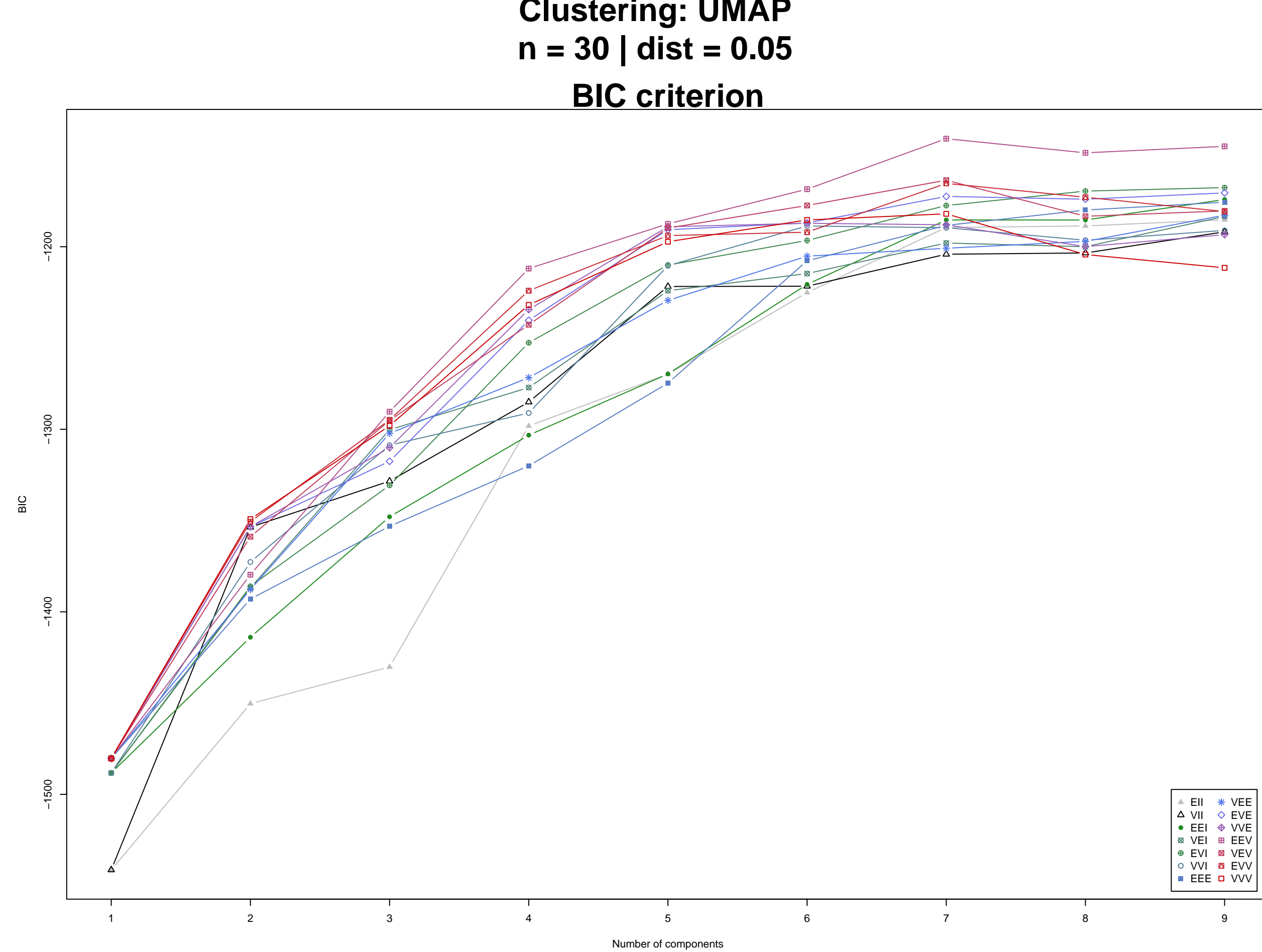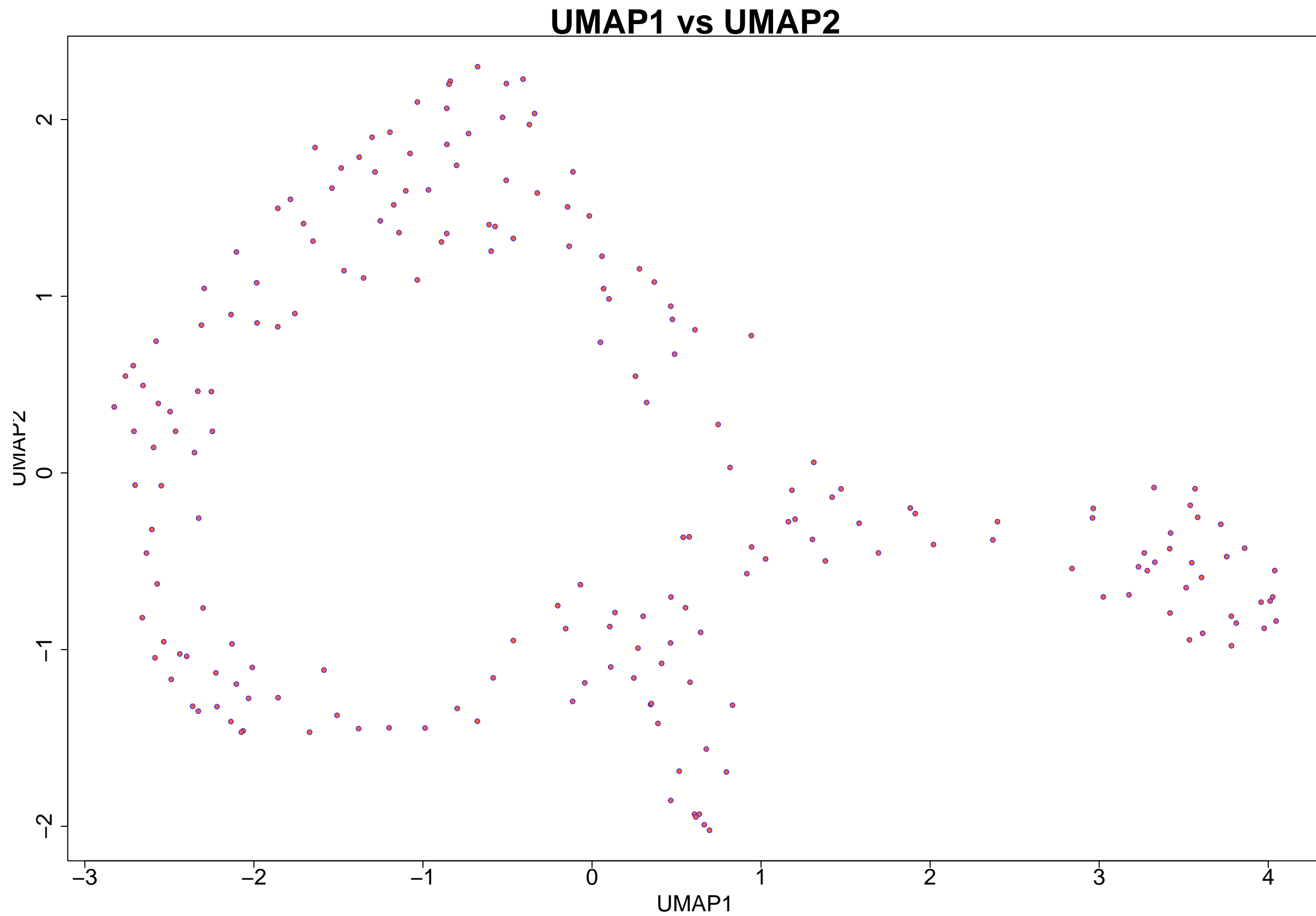
UMAP Trajectory plot
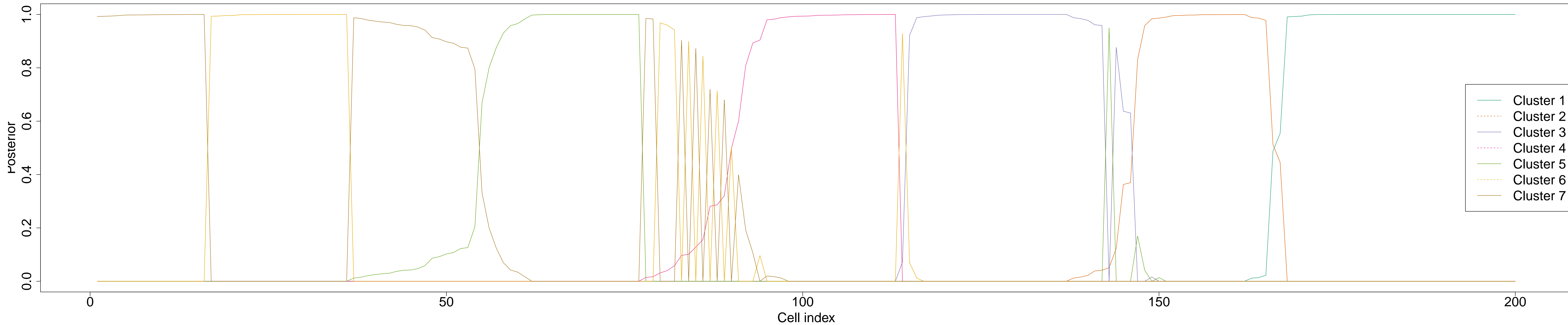
Clustering: UMAP
n = 30 | dist = 0.1

UMAP Trajectory plot

Clustering: UMAP
n = 30 | dist = 0.2

UMAP Trajectory plot

Clustering: UMAP
n = 30 | dist = 0.3
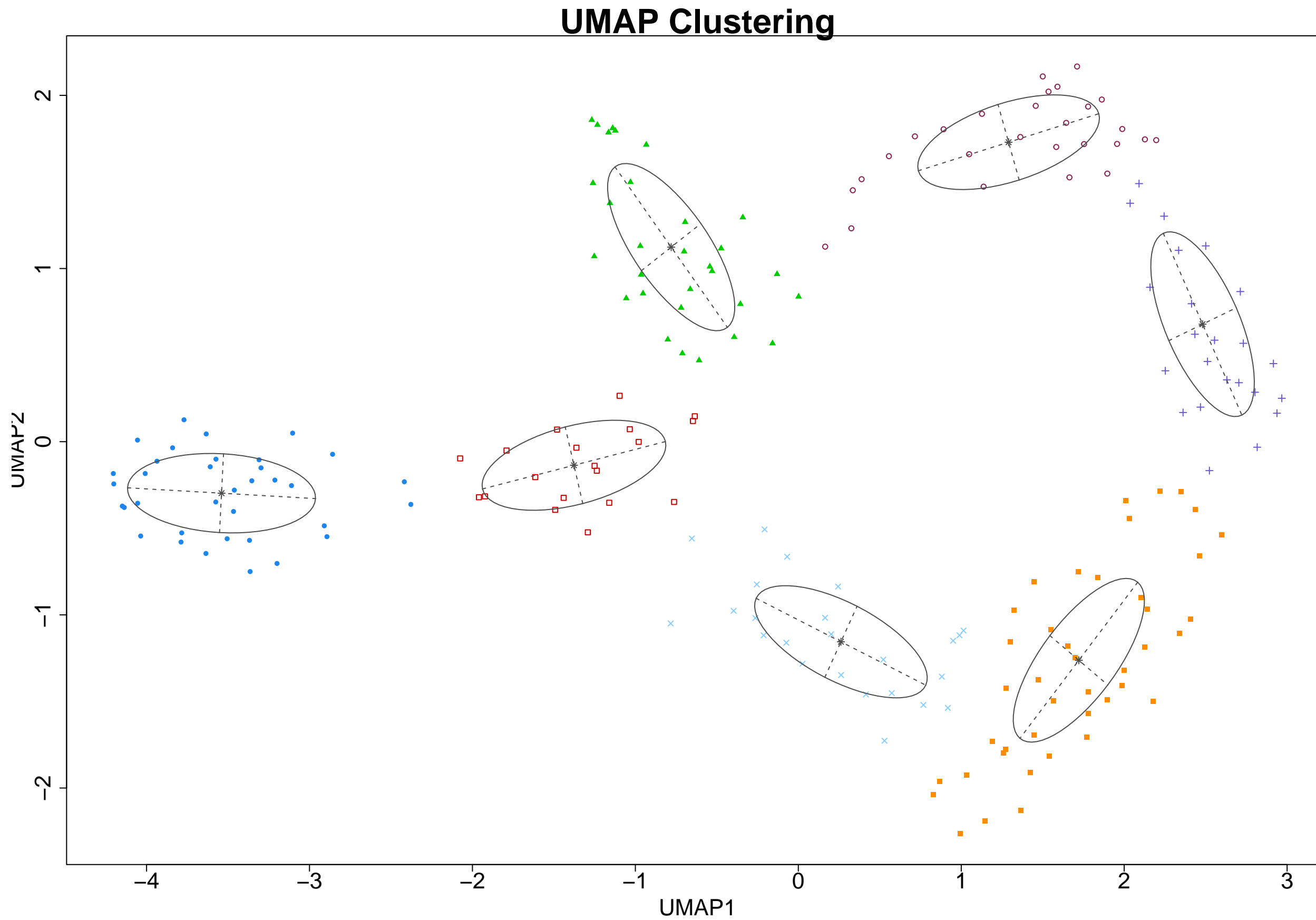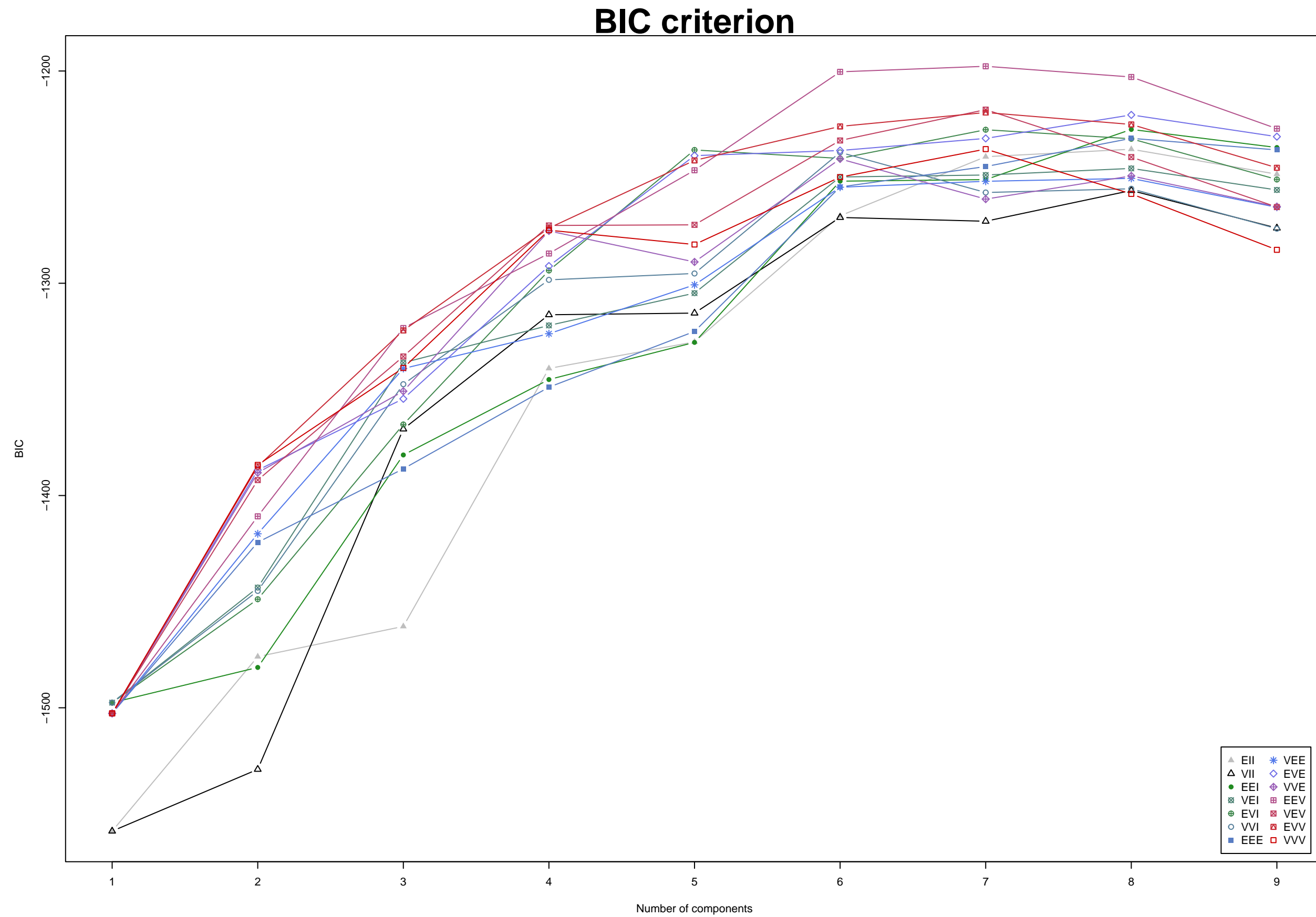
UMAP Trajectory plot
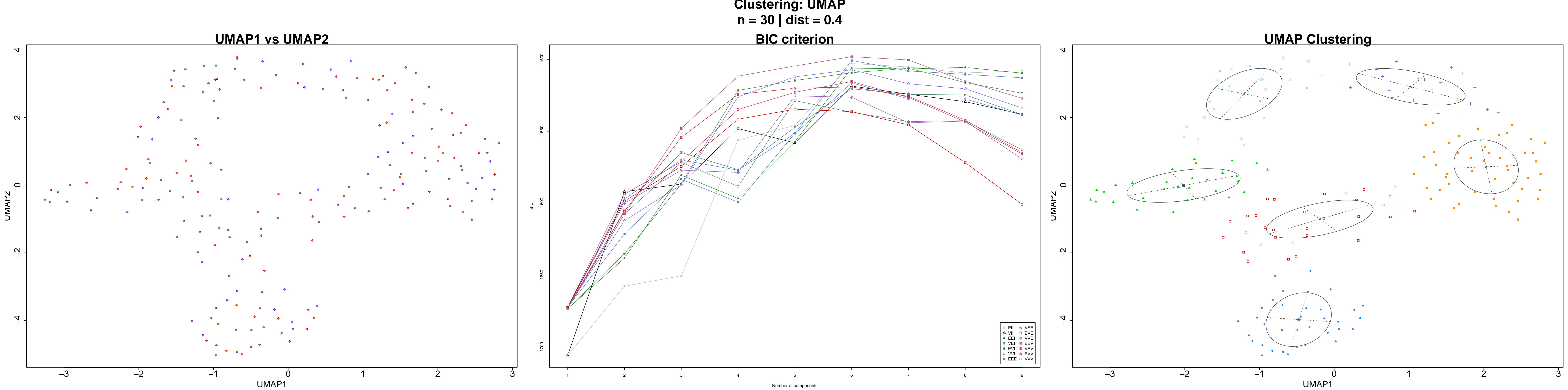
Clustering: UMAP
n = 30 | dist = 0.4

UMAP Trajectory plot

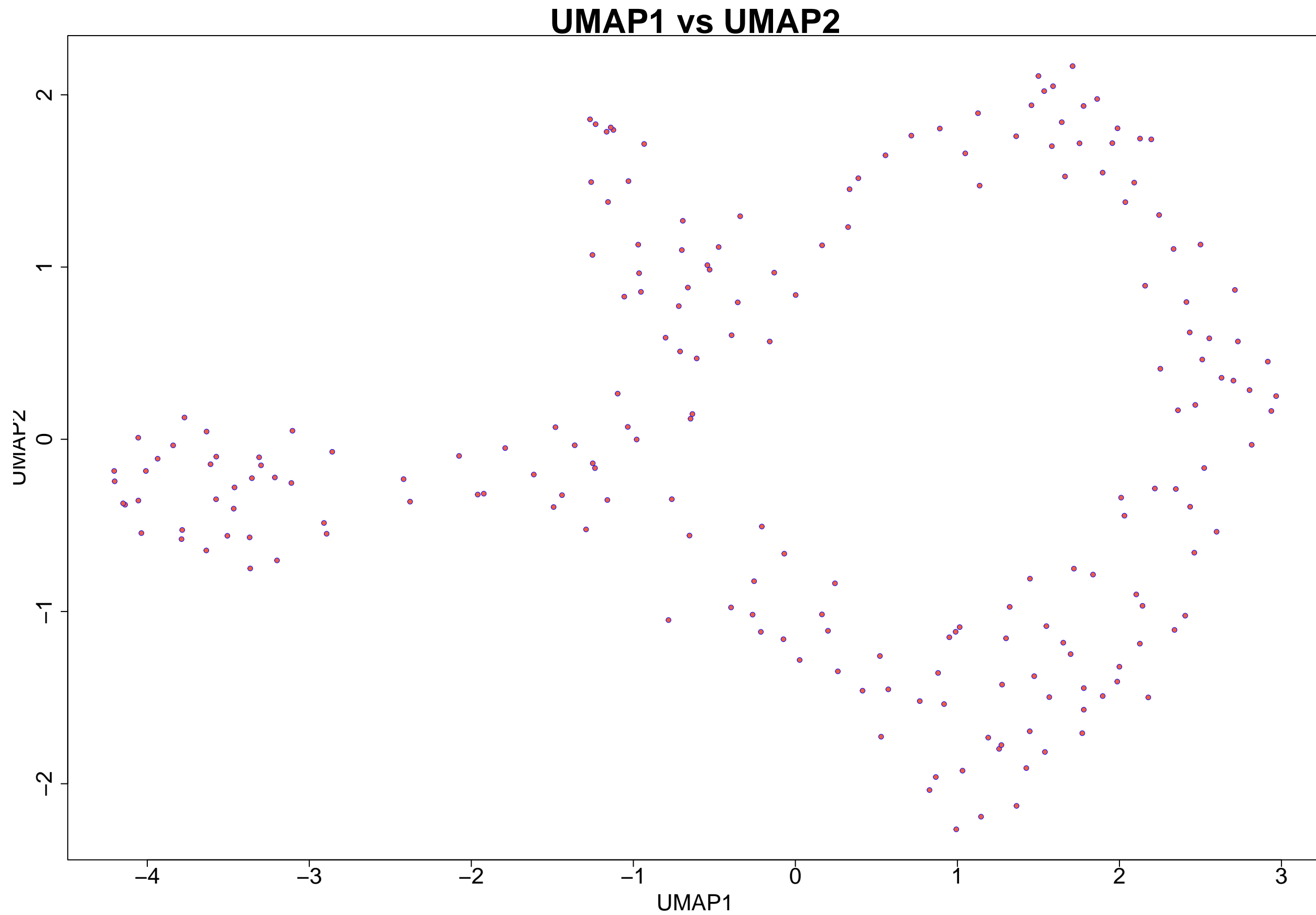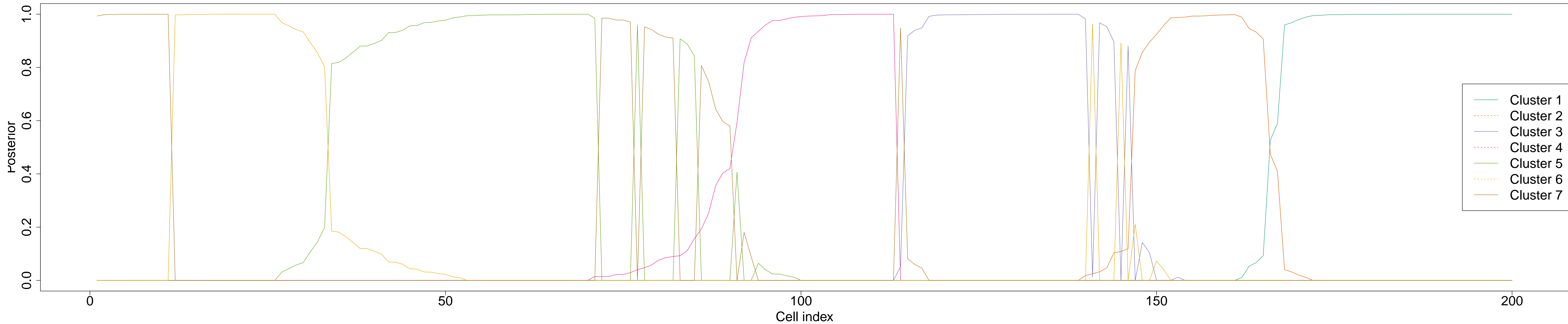**Clustering: UMAP**
n = 35 | dist = 0.05

UMAP Trajectory plot
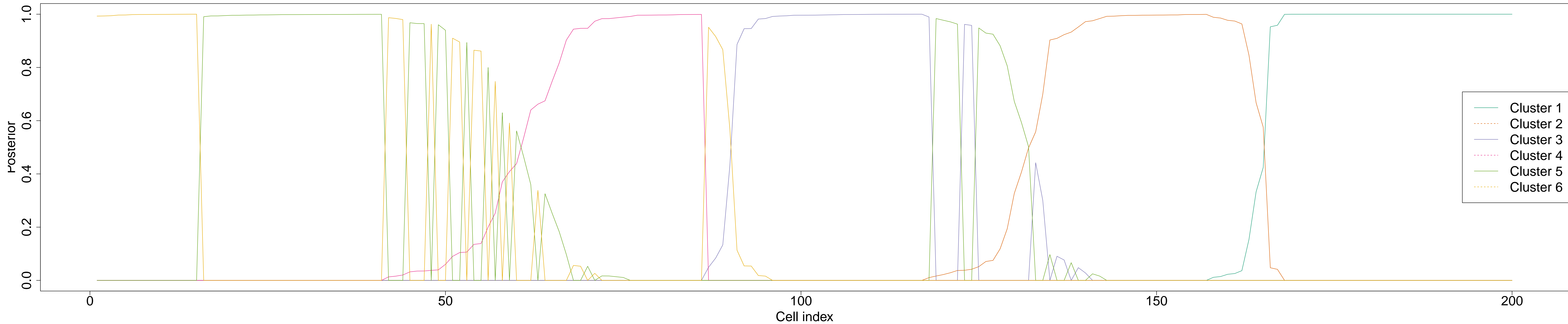
Clustering: UMAP
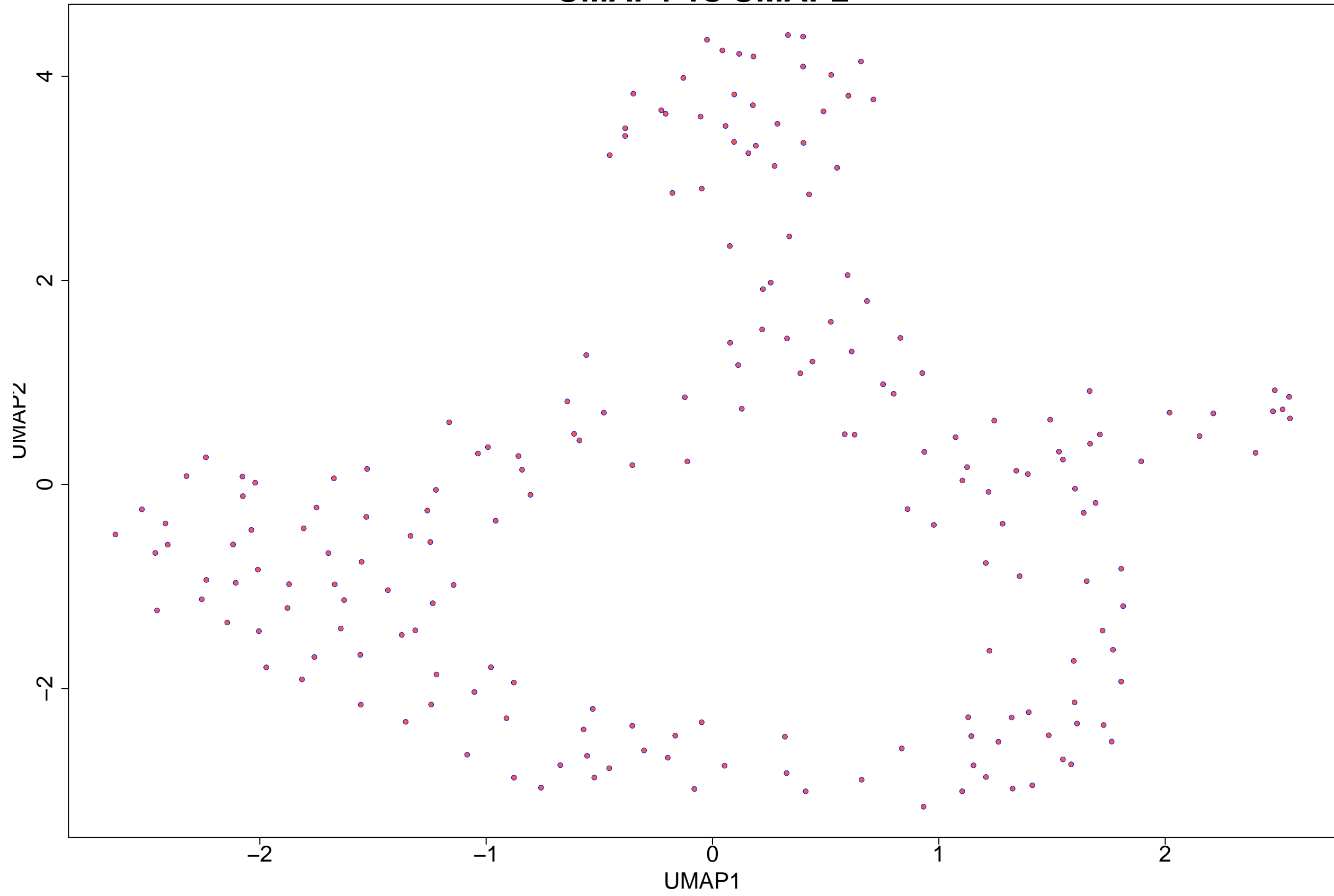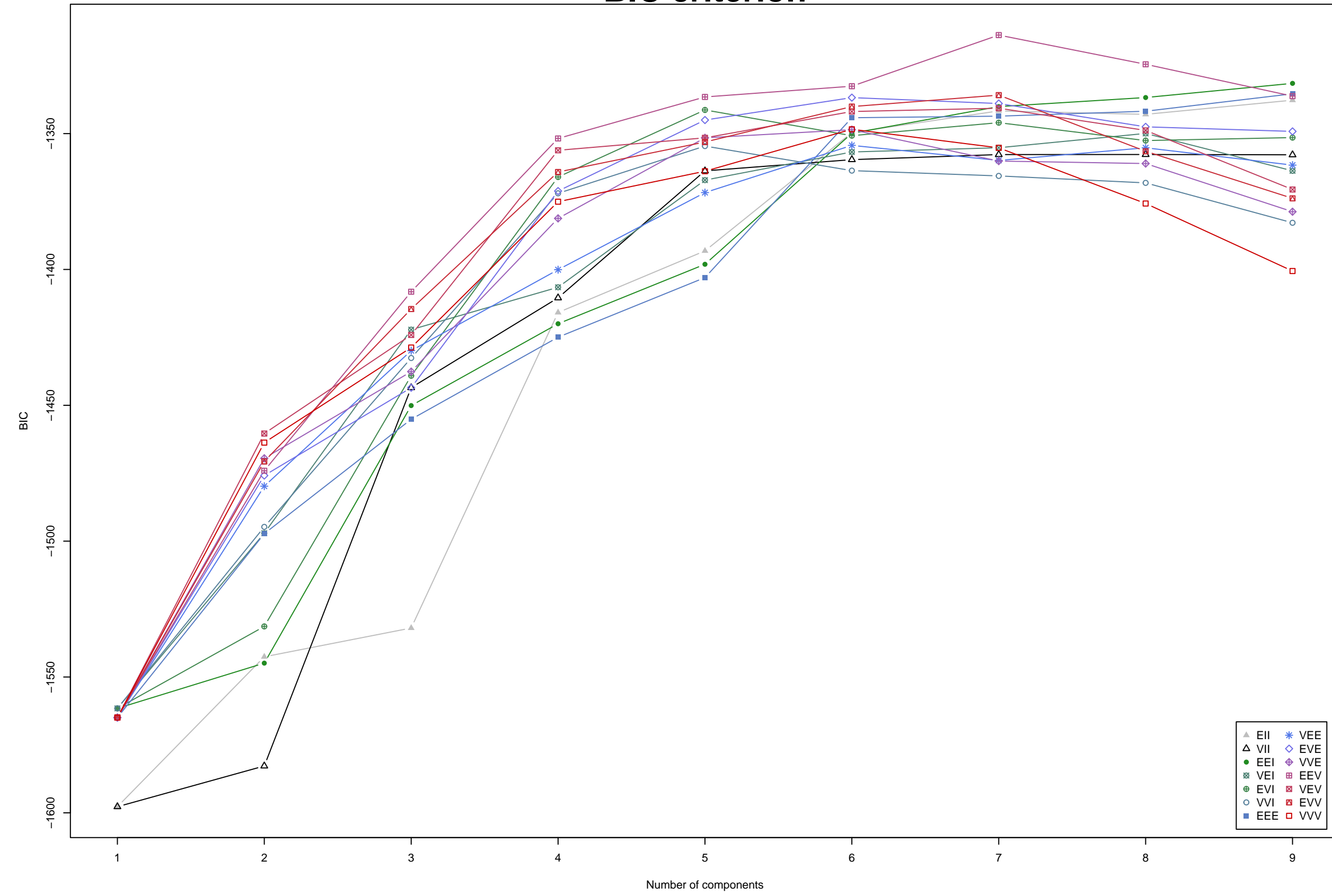**n = 35 | dist = 0.1**

UMAP Trajectory plot
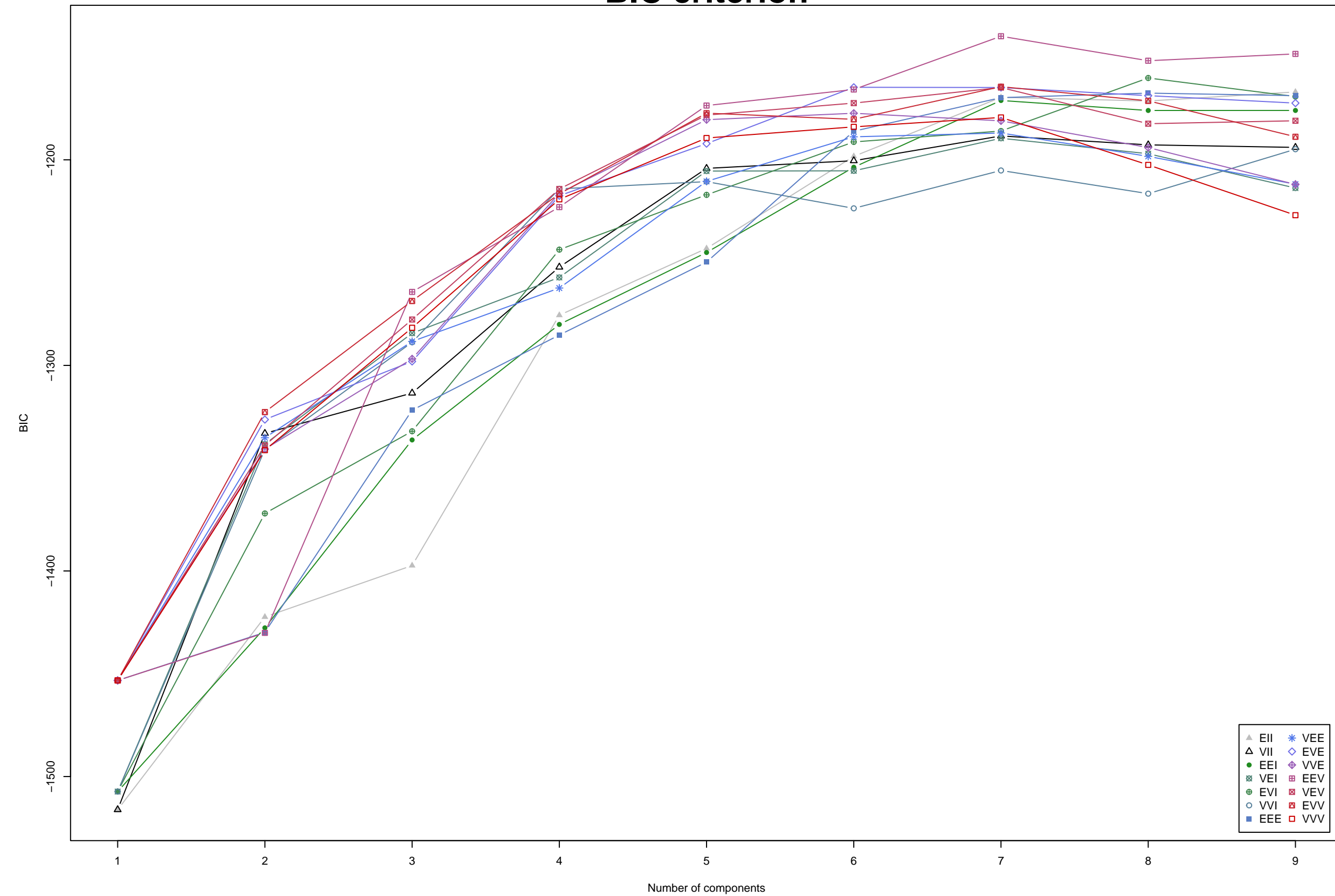
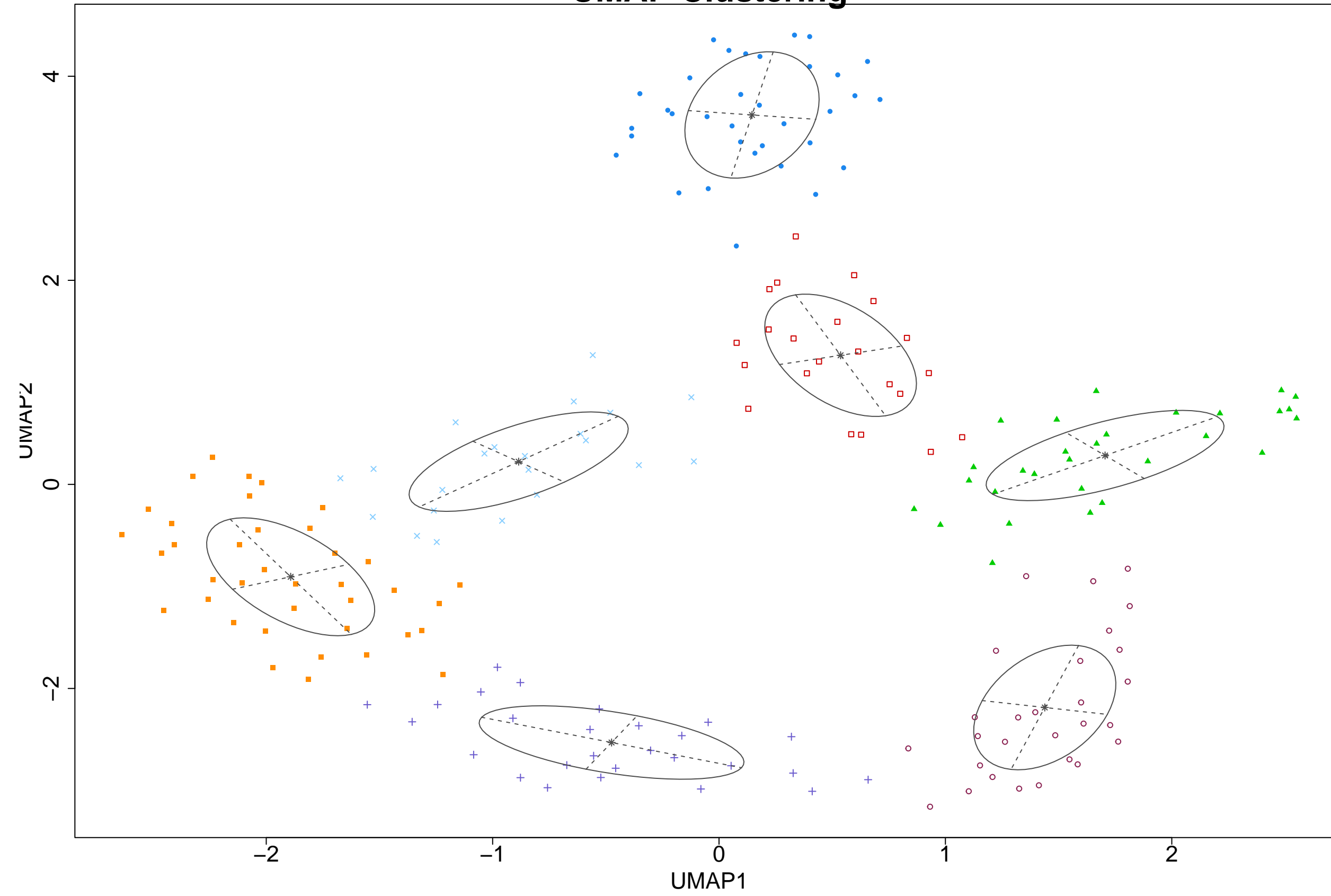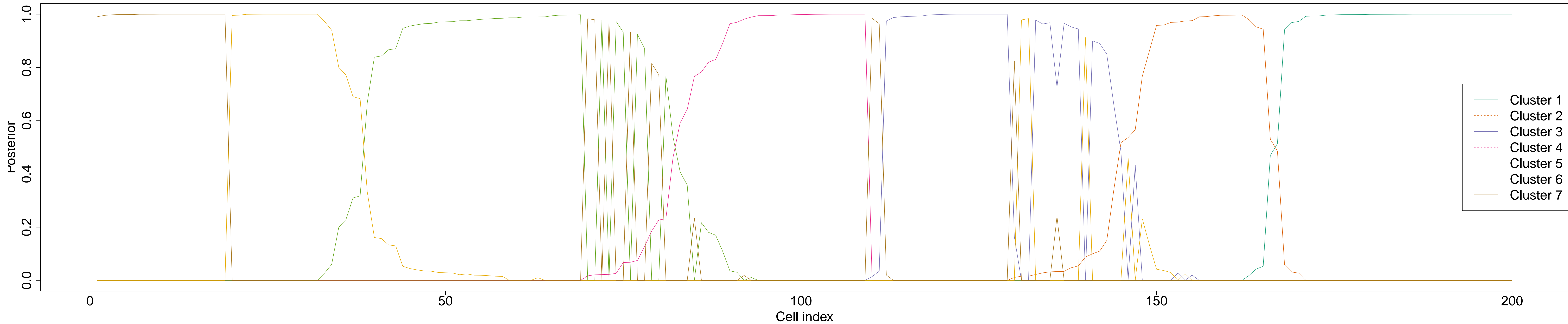## Clustering: UMAP
n = 35 | dist = 0.2

UMAP1 vs UMAP2
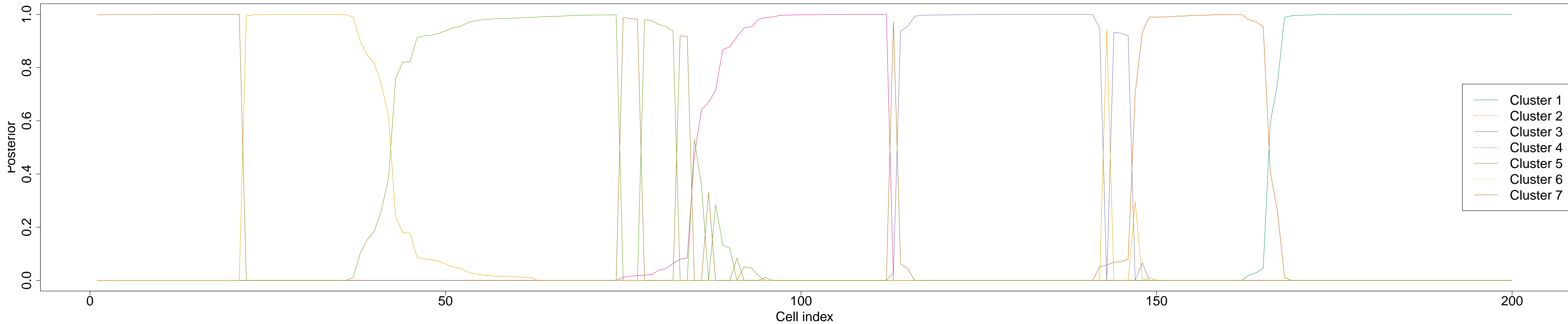
BIC criterion
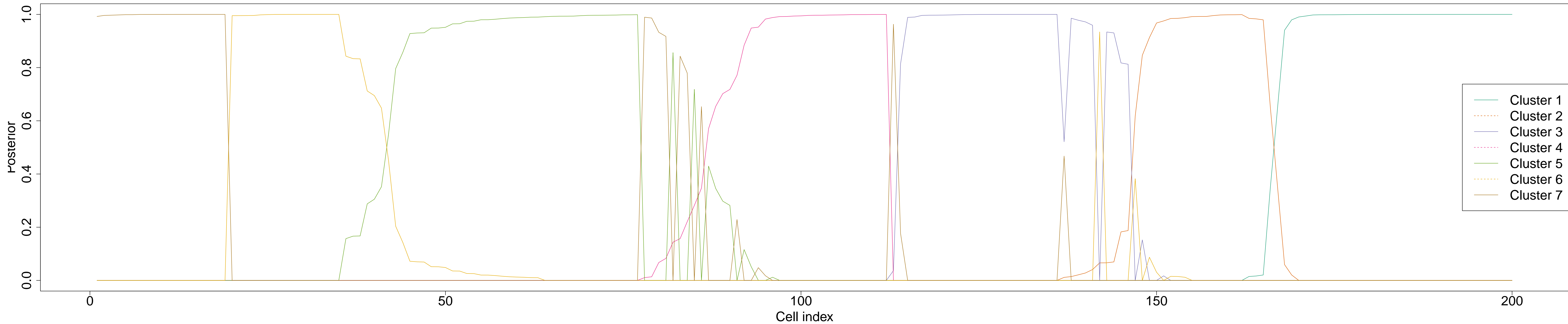
UMAP Clustering

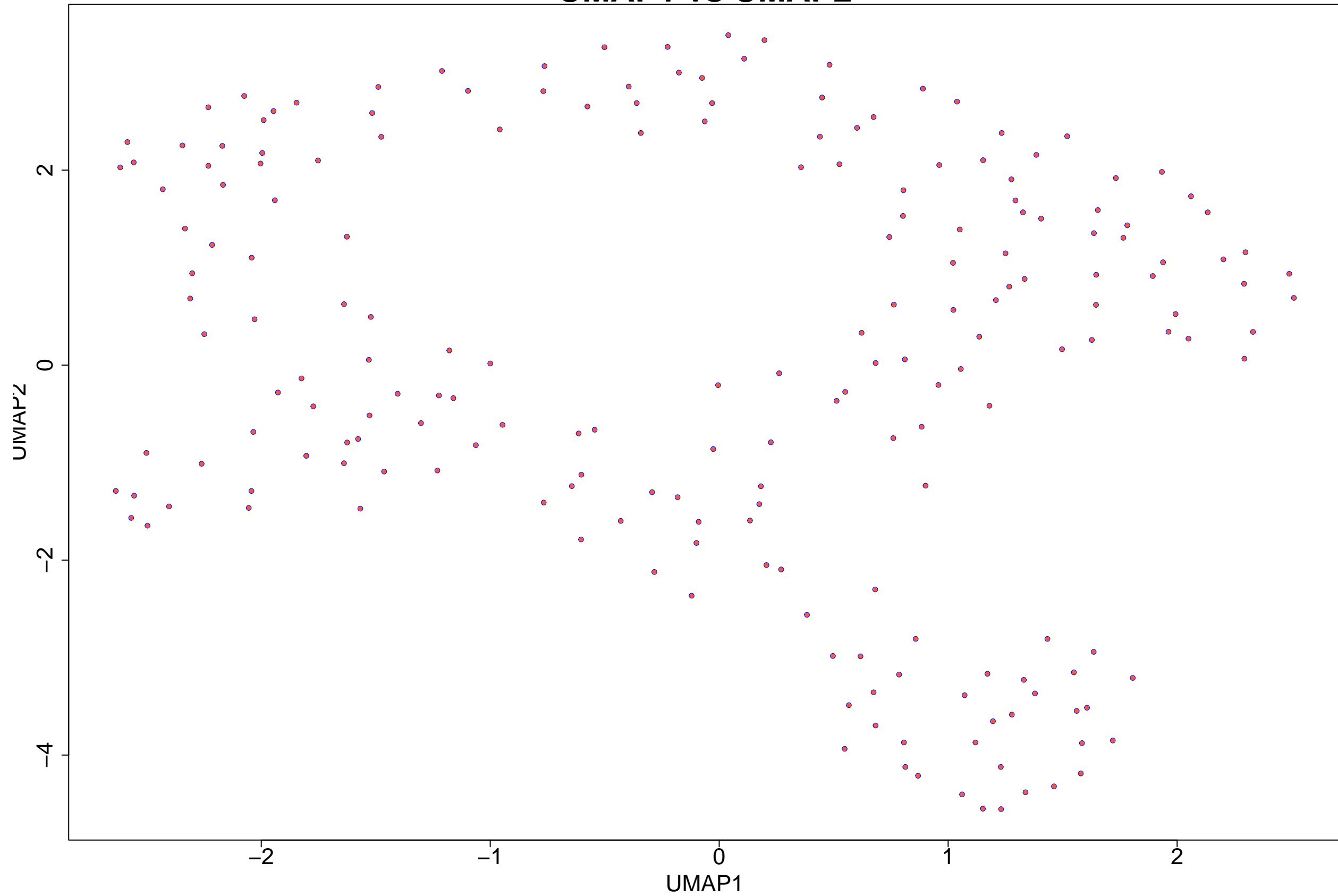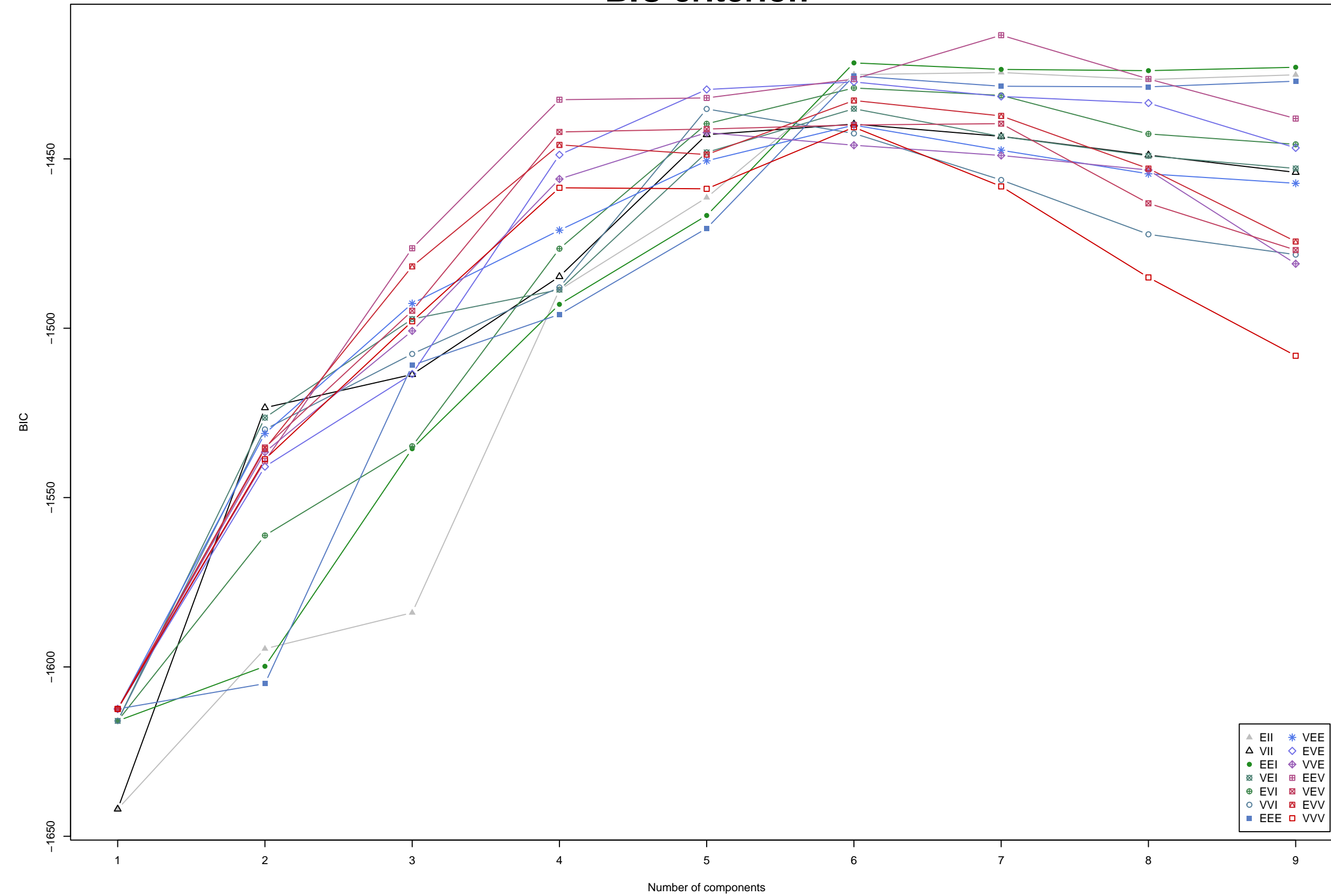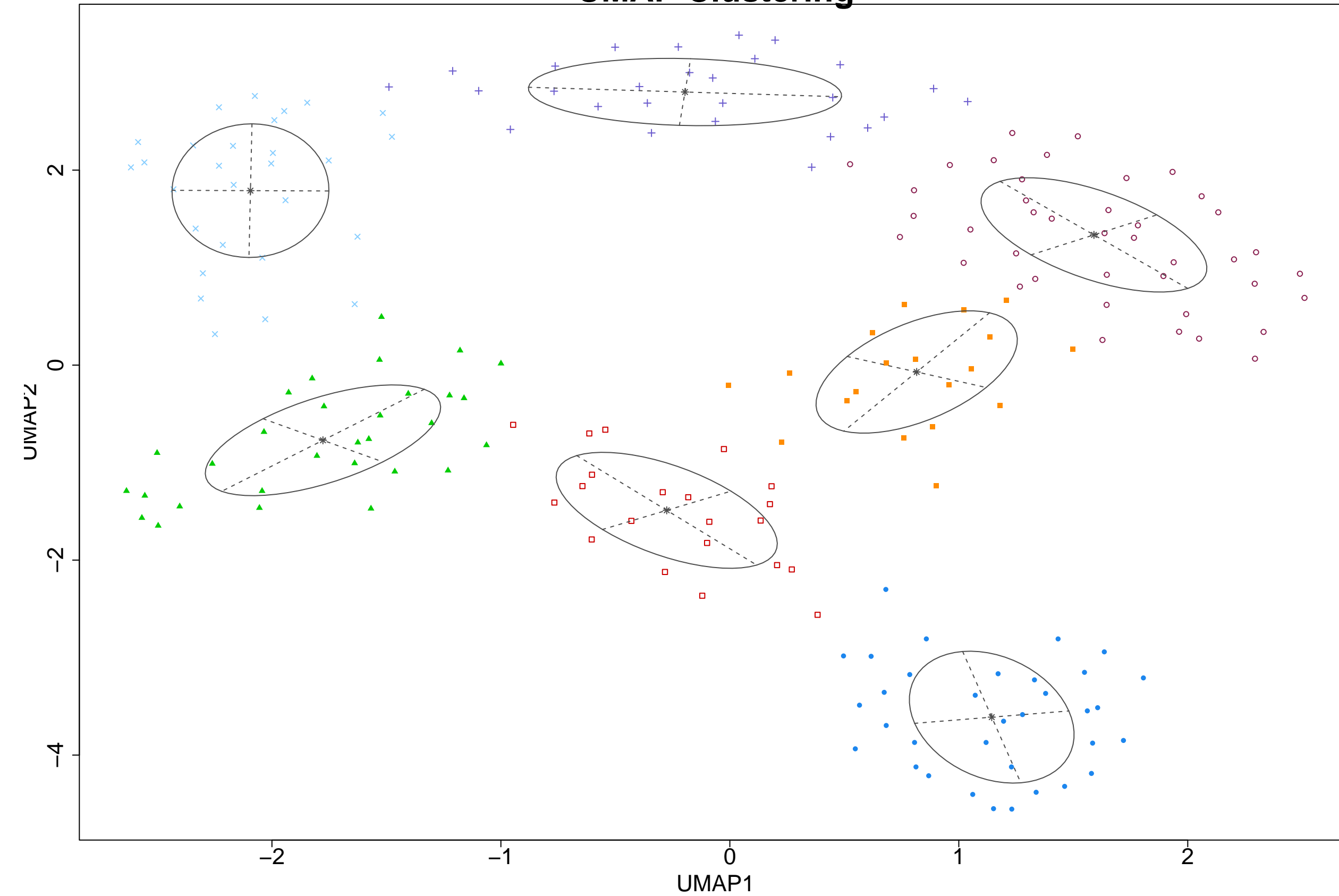**UMAP Trajectory plot**

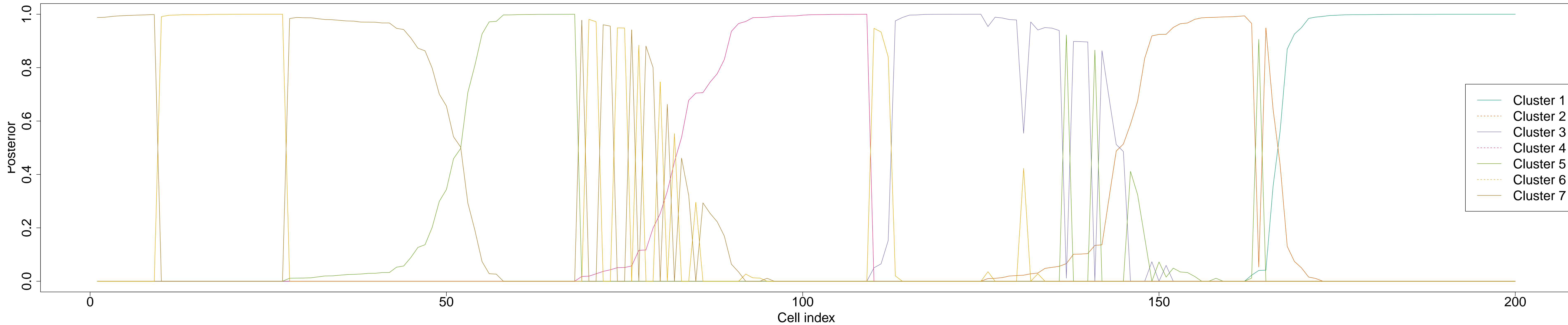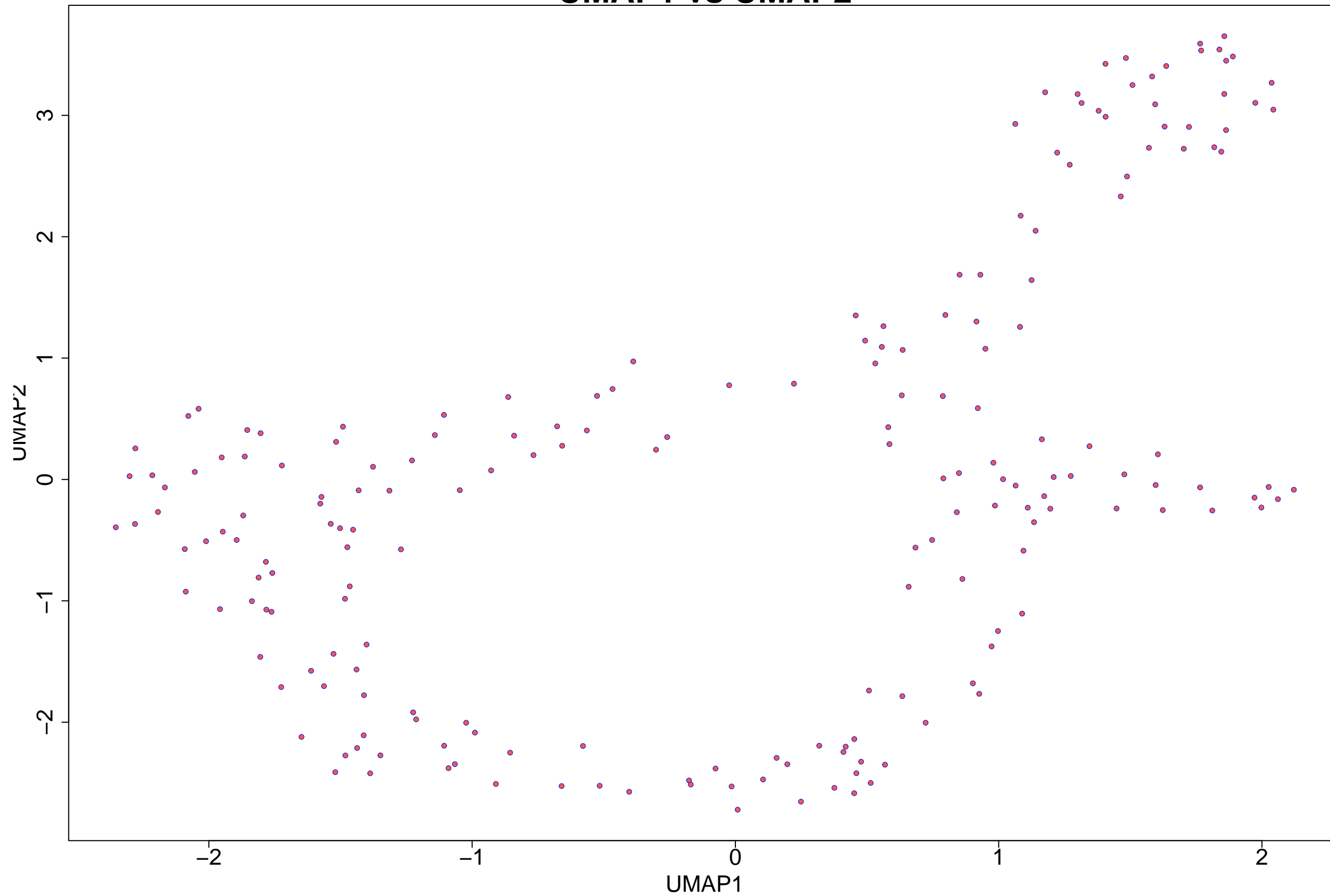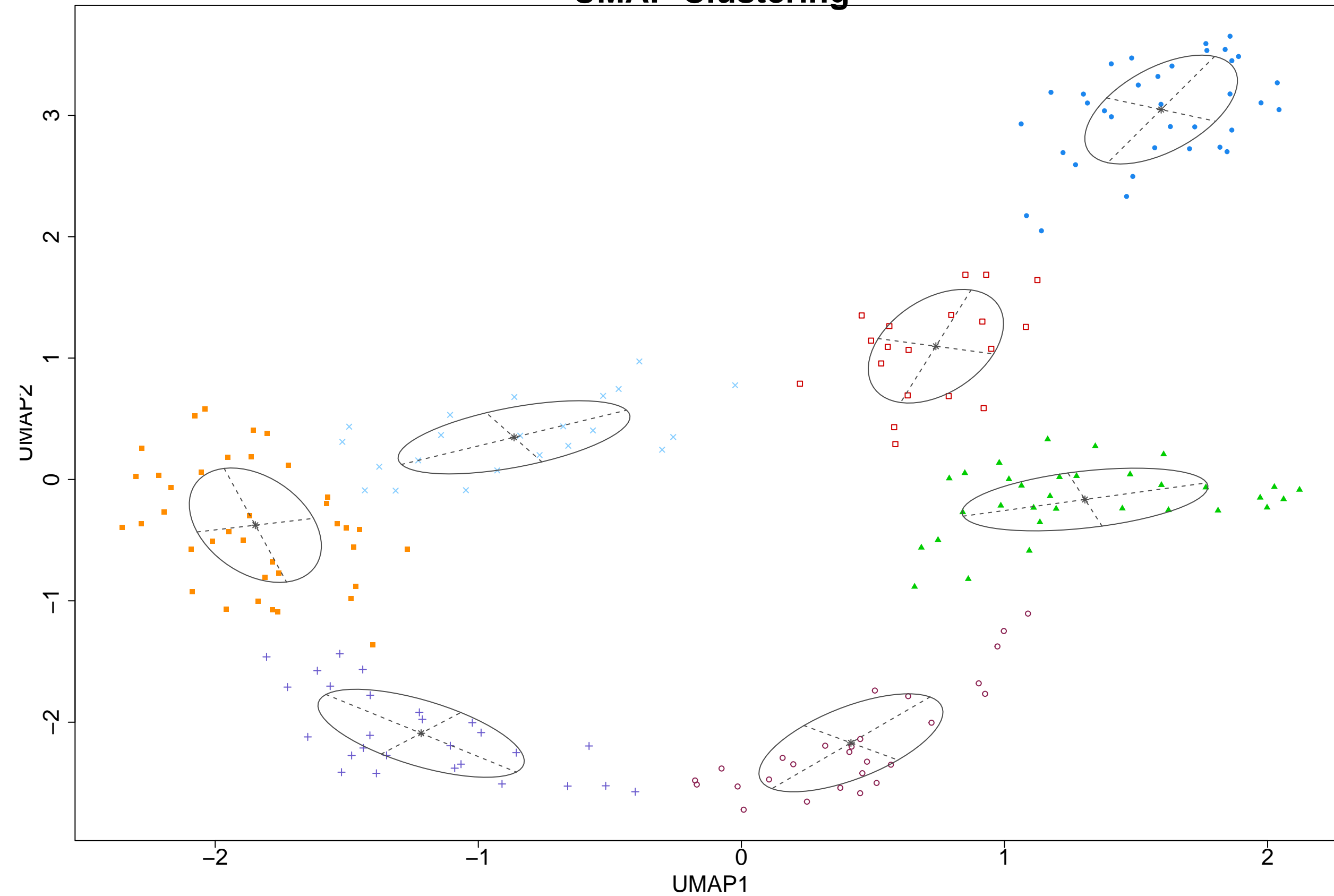**Clustering: UMAP**
n = 35 | dist = 0.3

UMAP Trajectory plot
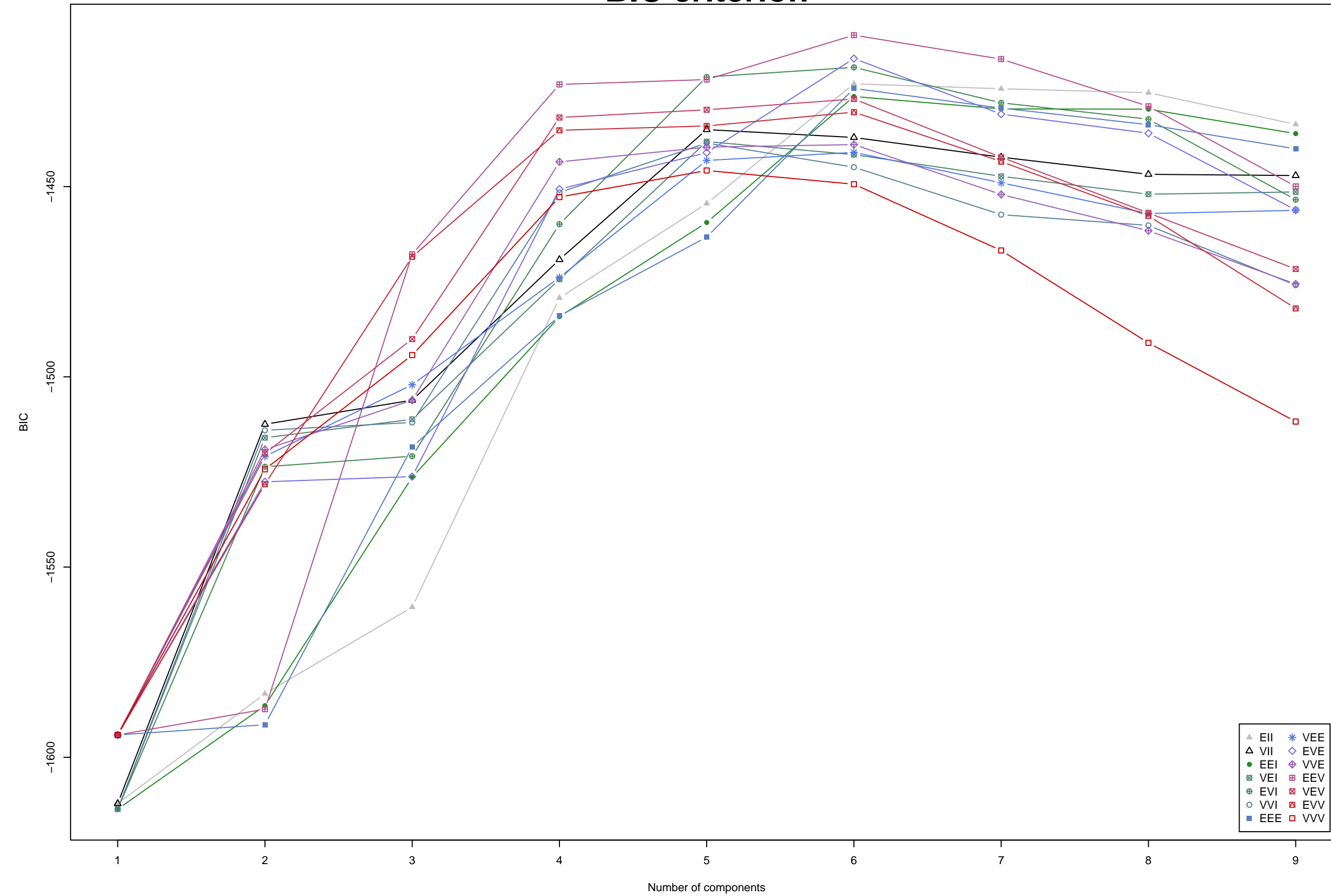
Clustering: UMAP
n = 35 | dist = 0.4
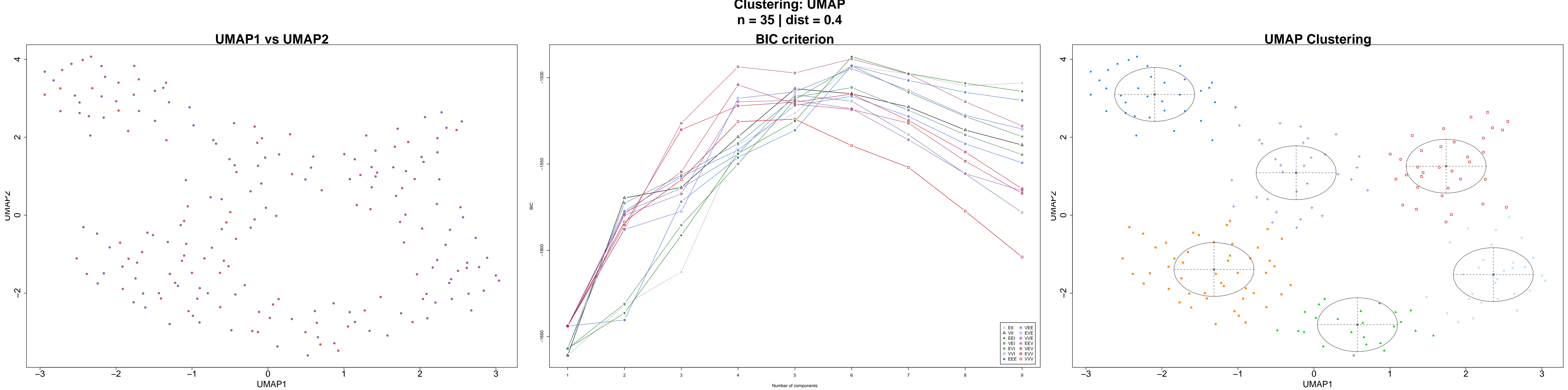
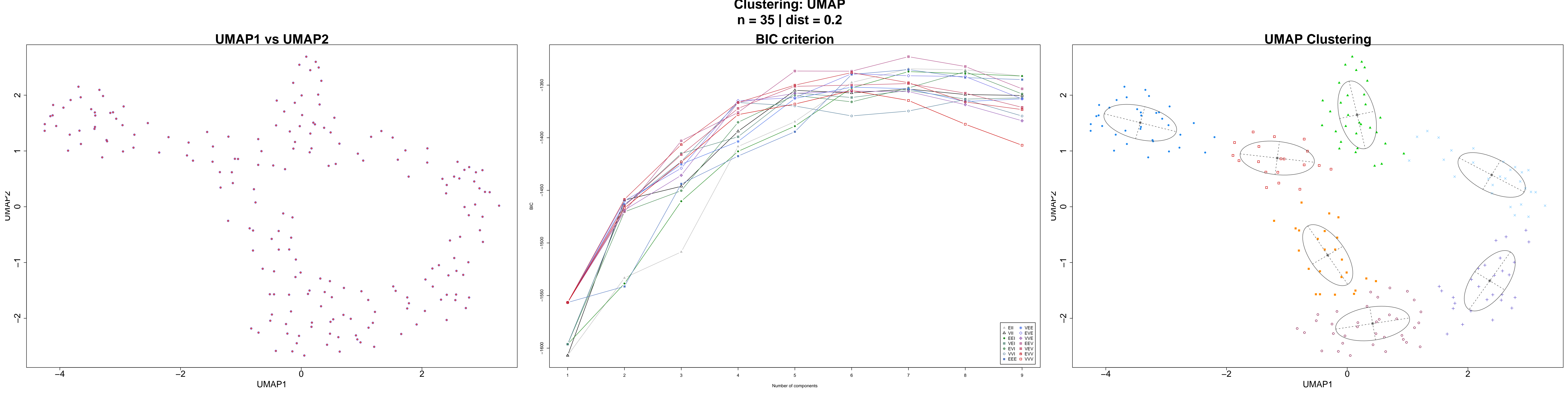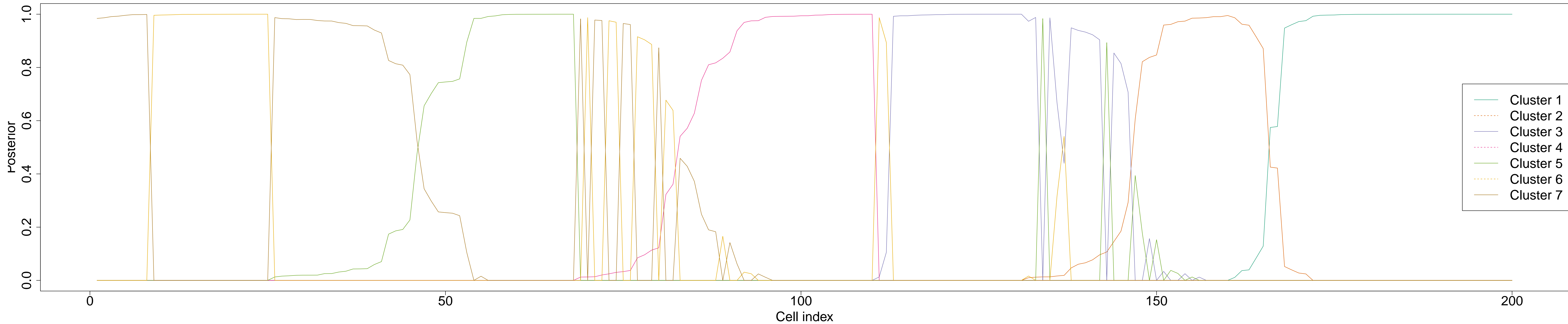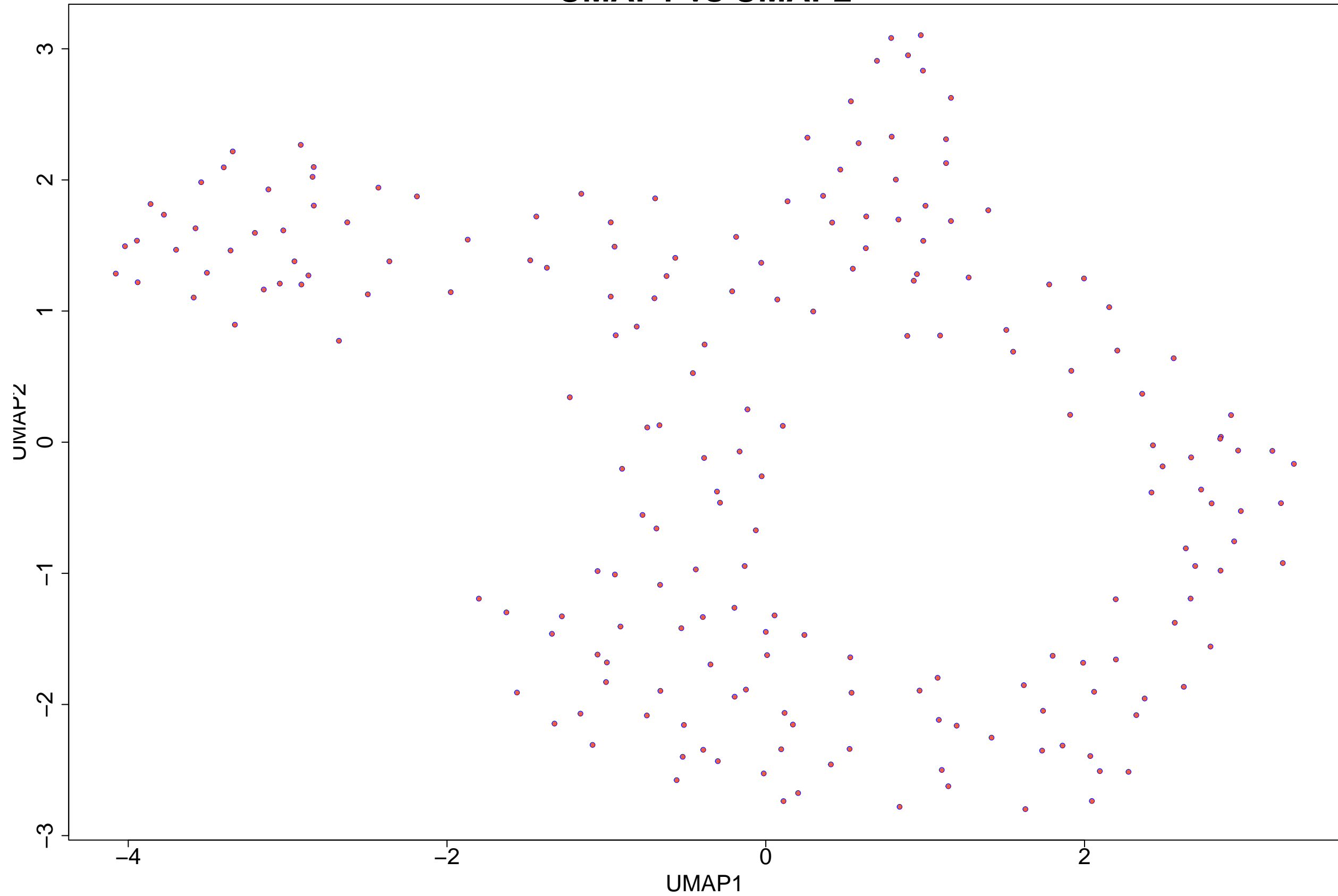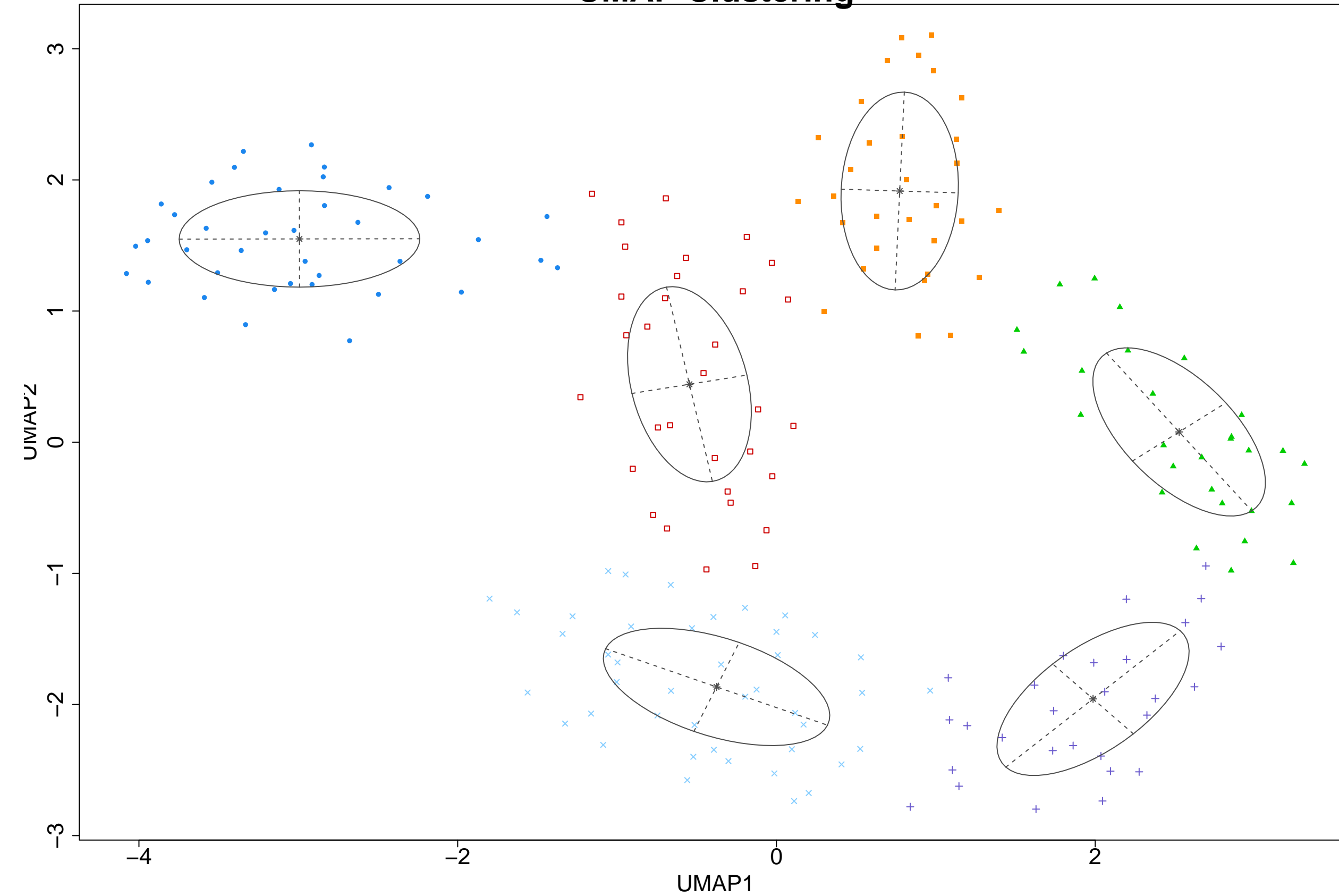**UMAP Trajectory plot**
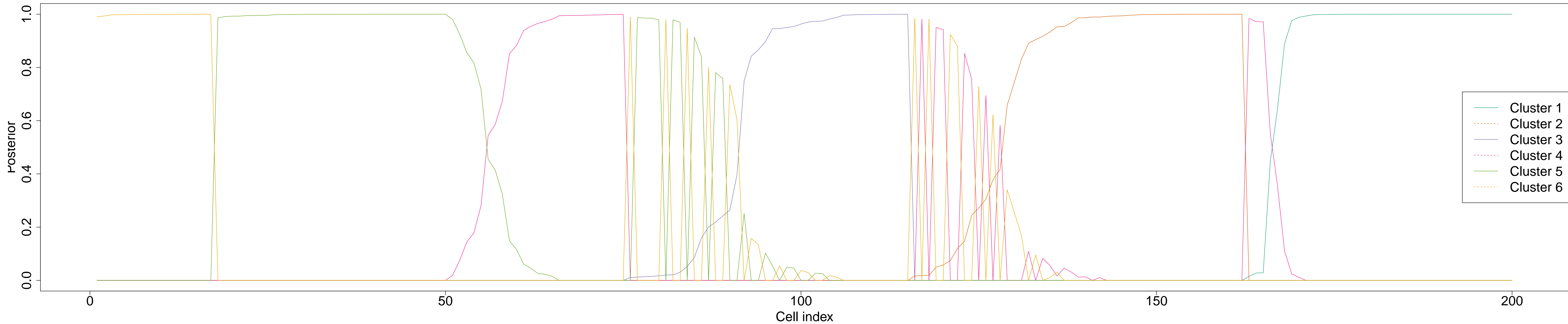
Clustering: UMAP
n = 40 | dist = 0.05

UMAP Trajectory plot
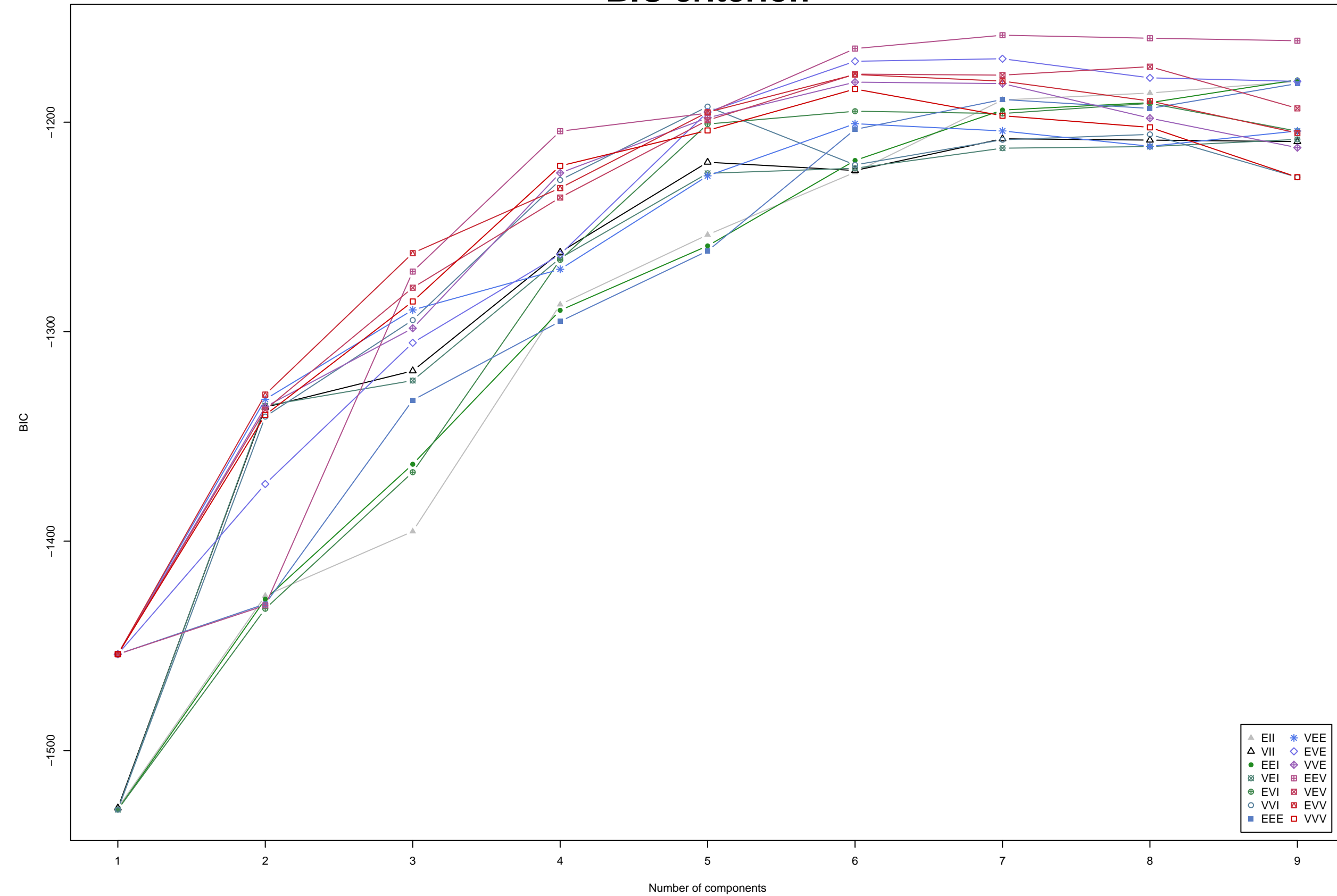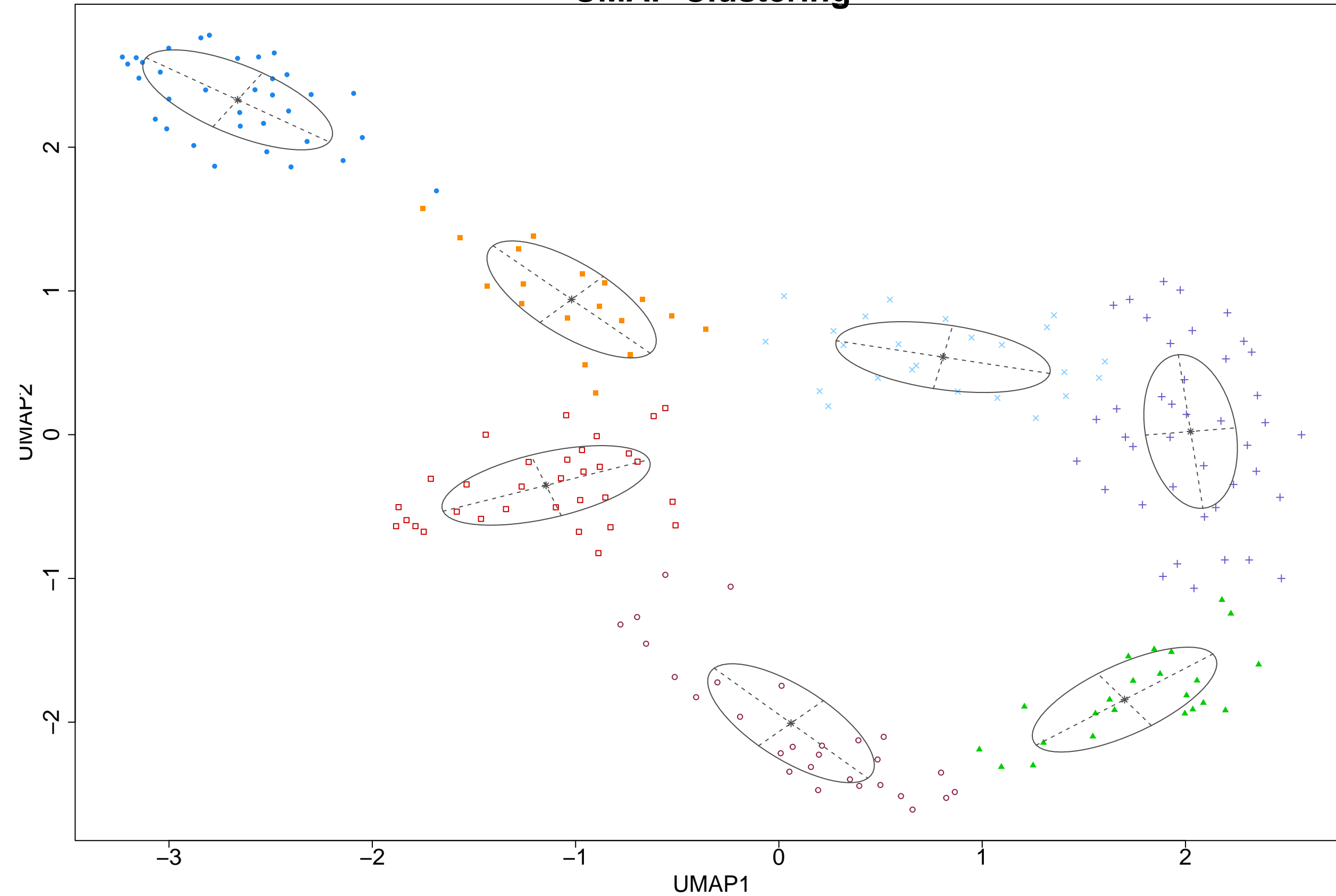
Clustering: UMAP
n = 40 | dist = 0.1
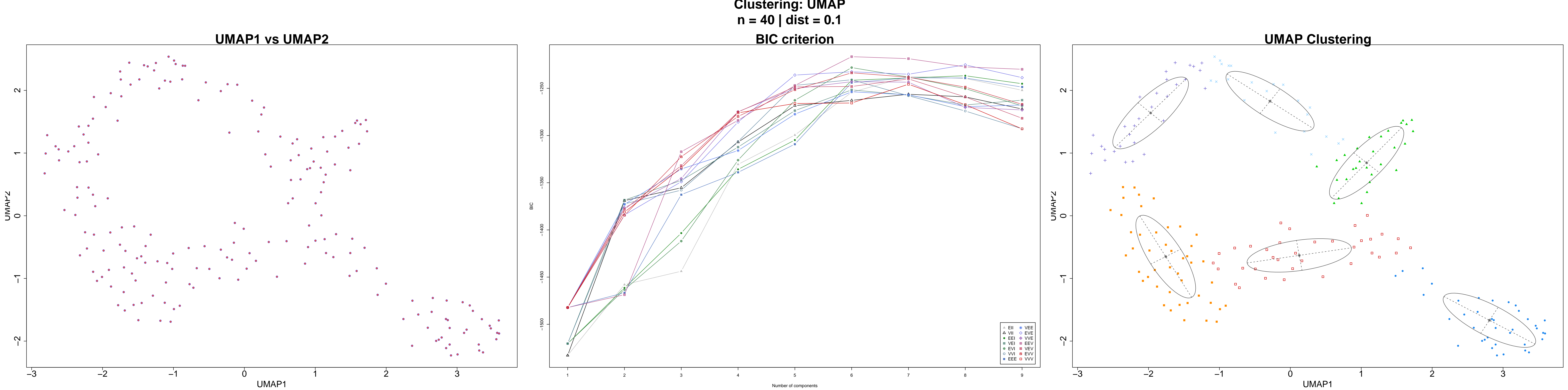
UMAP Trajectory plot
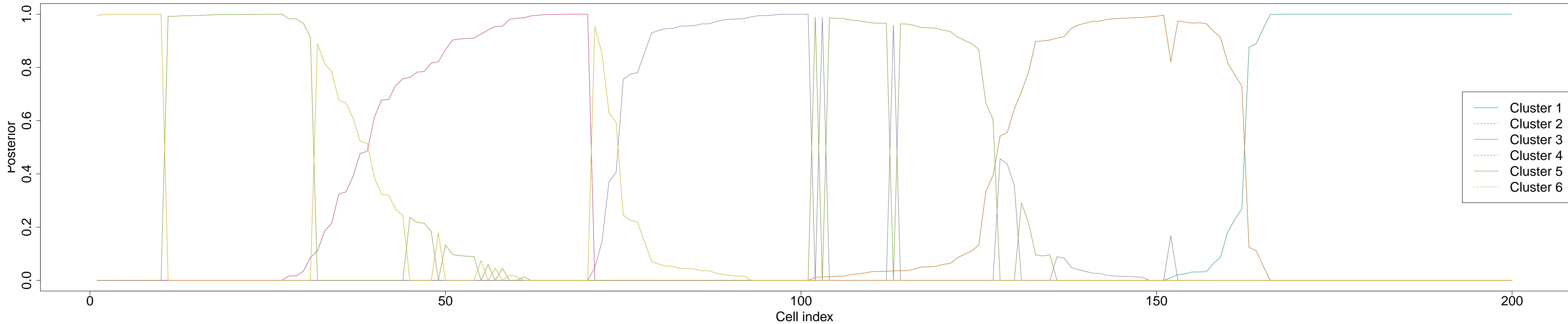
Clustering: UMAP
n = 40 | dist = 0.2

UMAP Trajectory plot
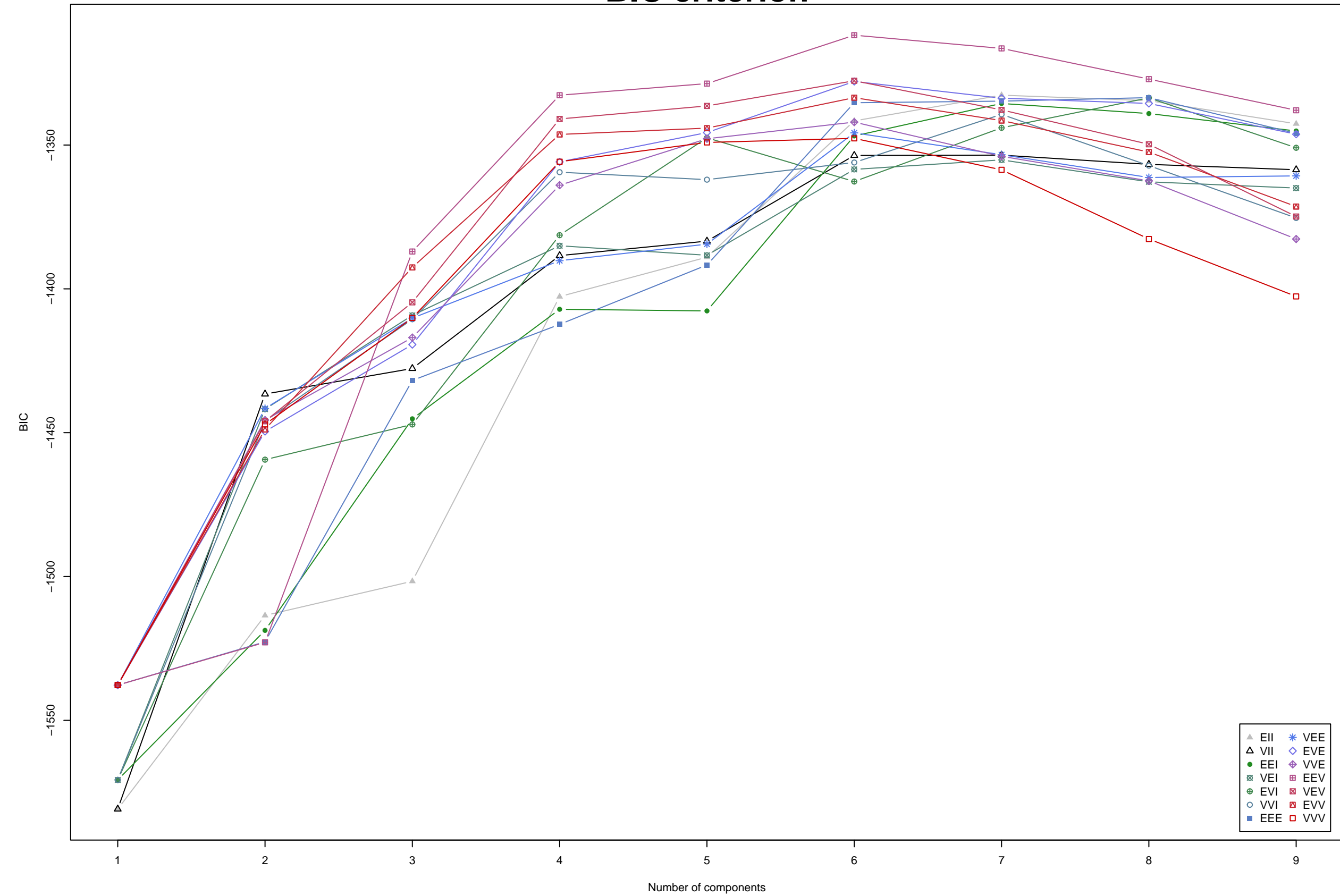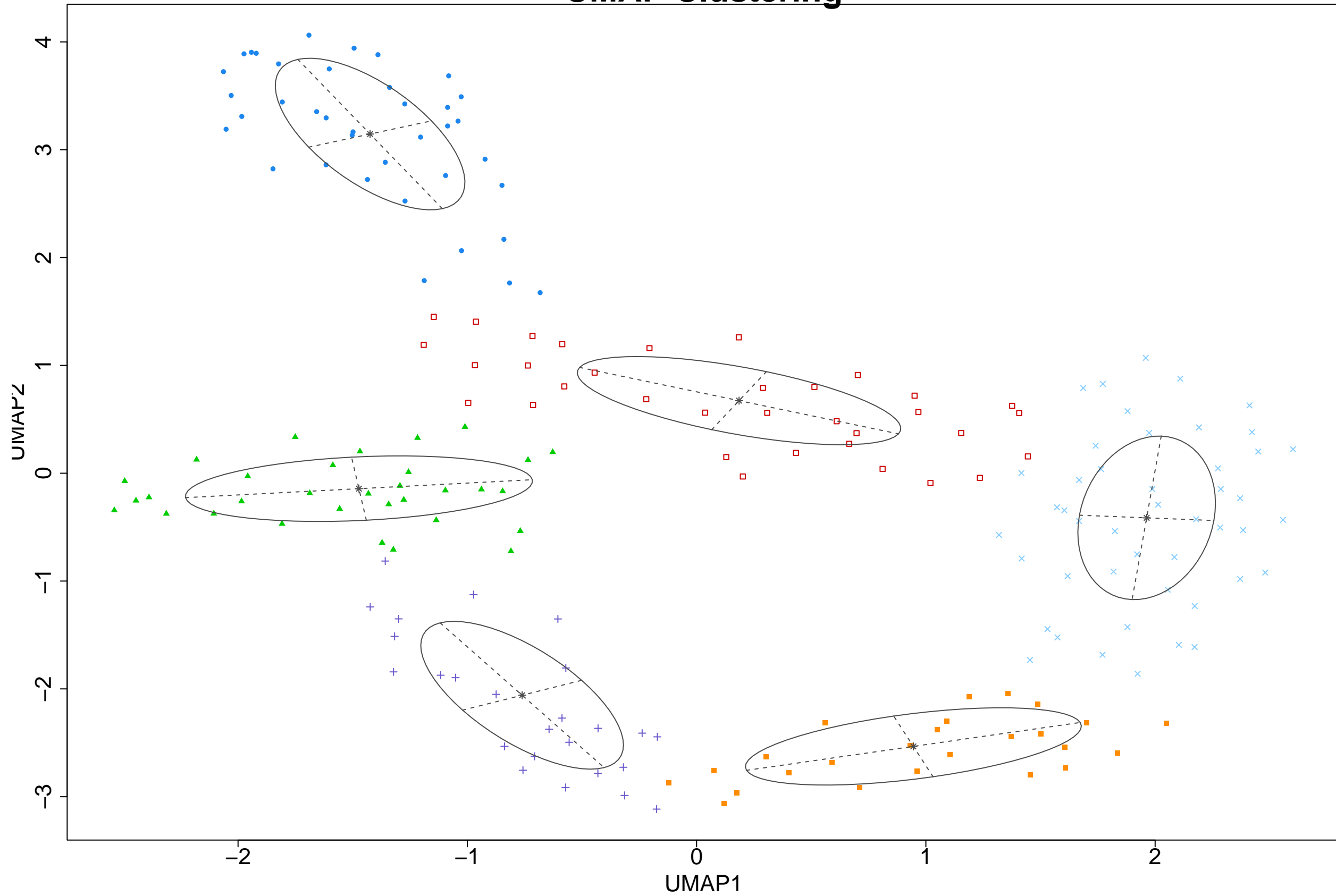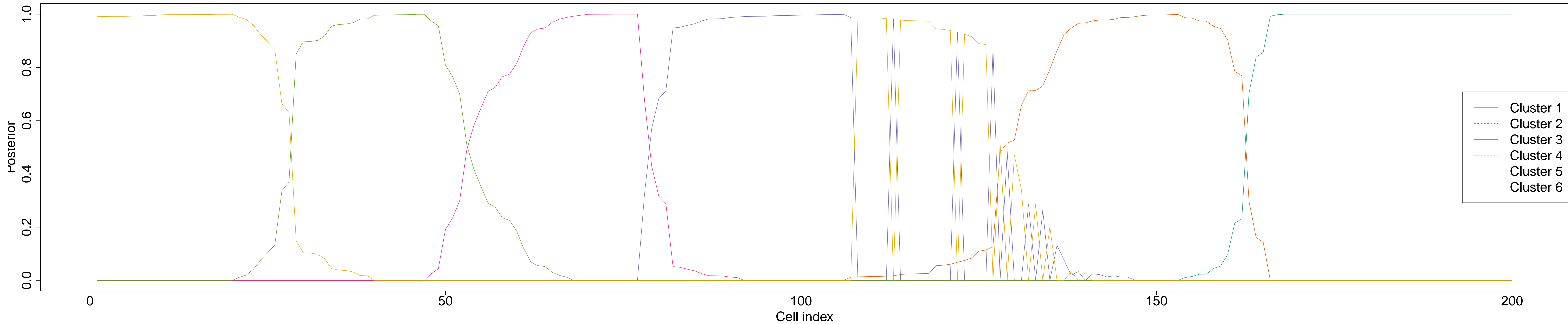
Clustering: UMAP
n = 40 | dist = 0.3
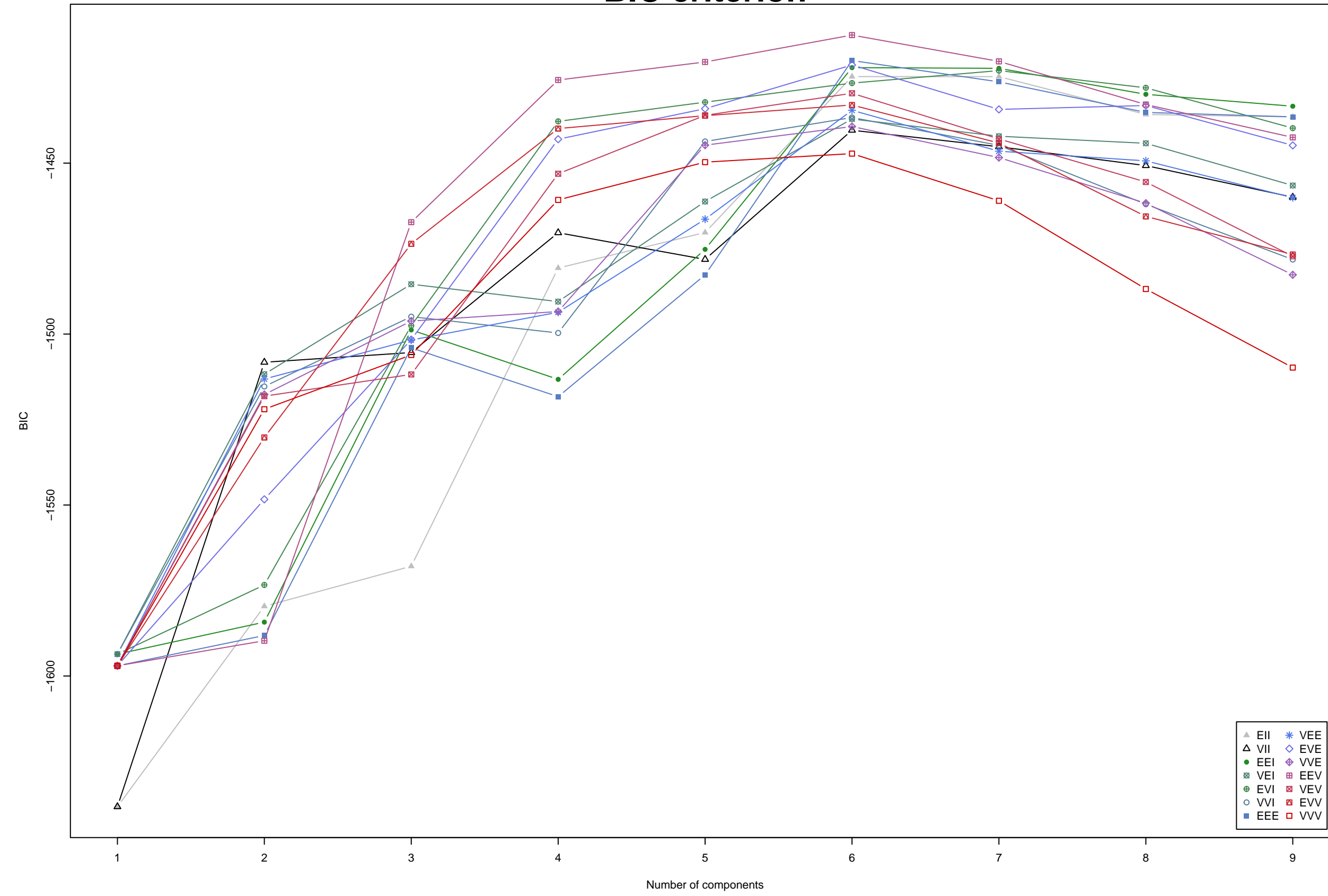
UMAP Trajectory plot
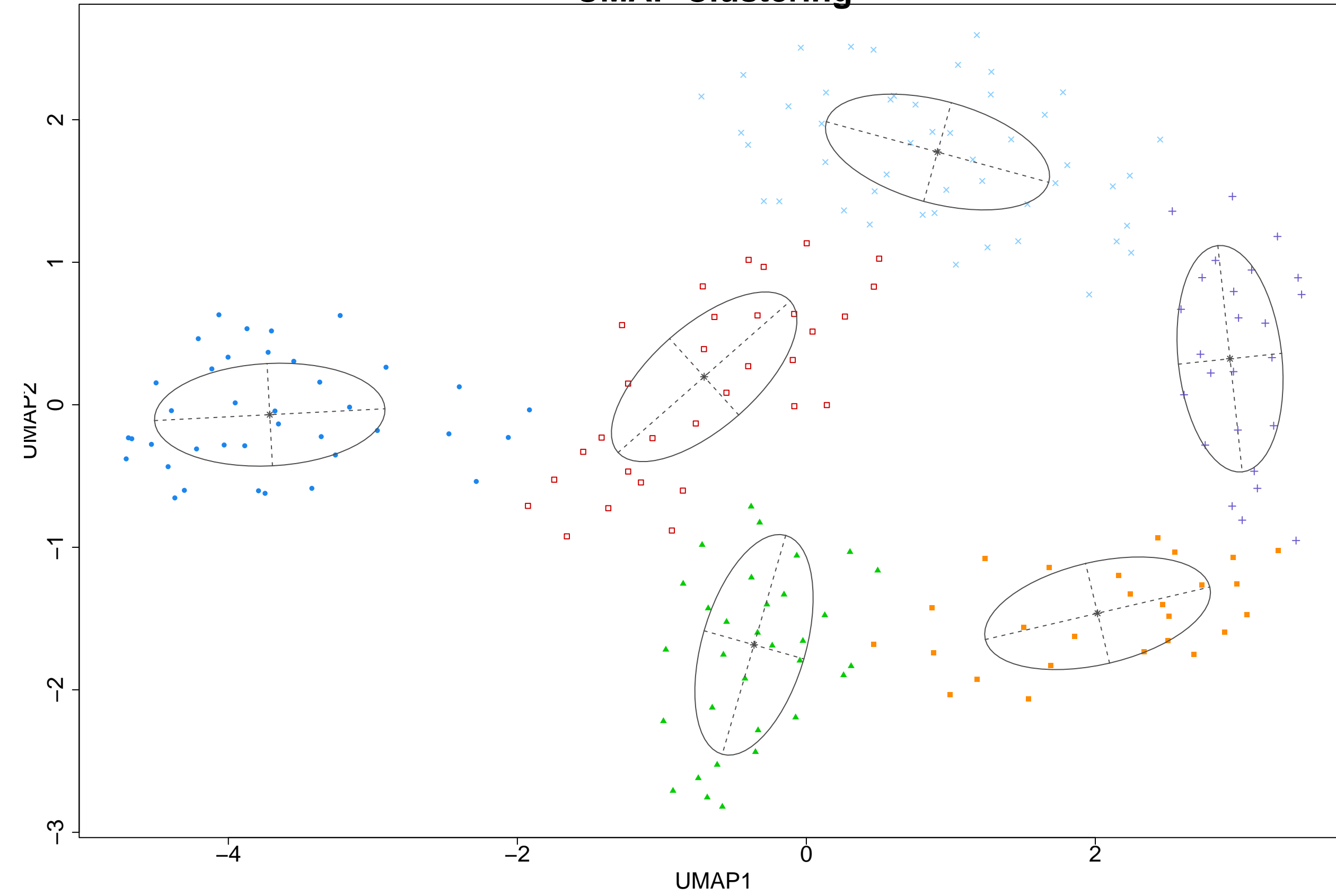
Clustering: UMAP
n = 40 | dist = 0.4
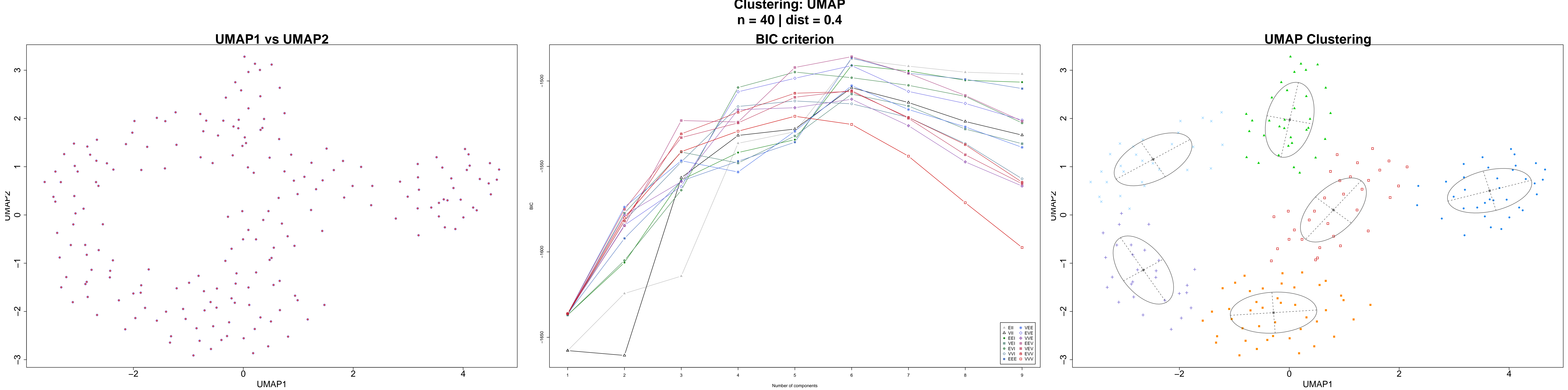
UMAP Trajectory plot
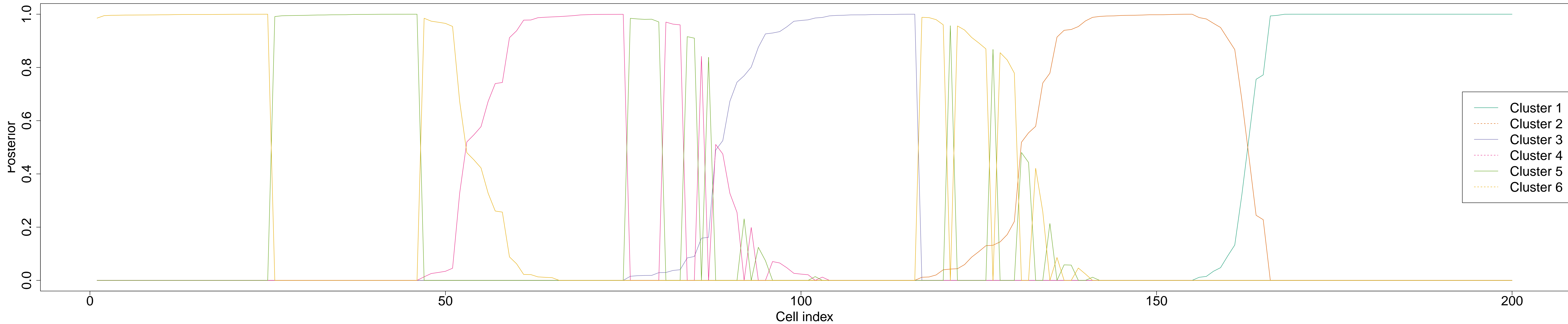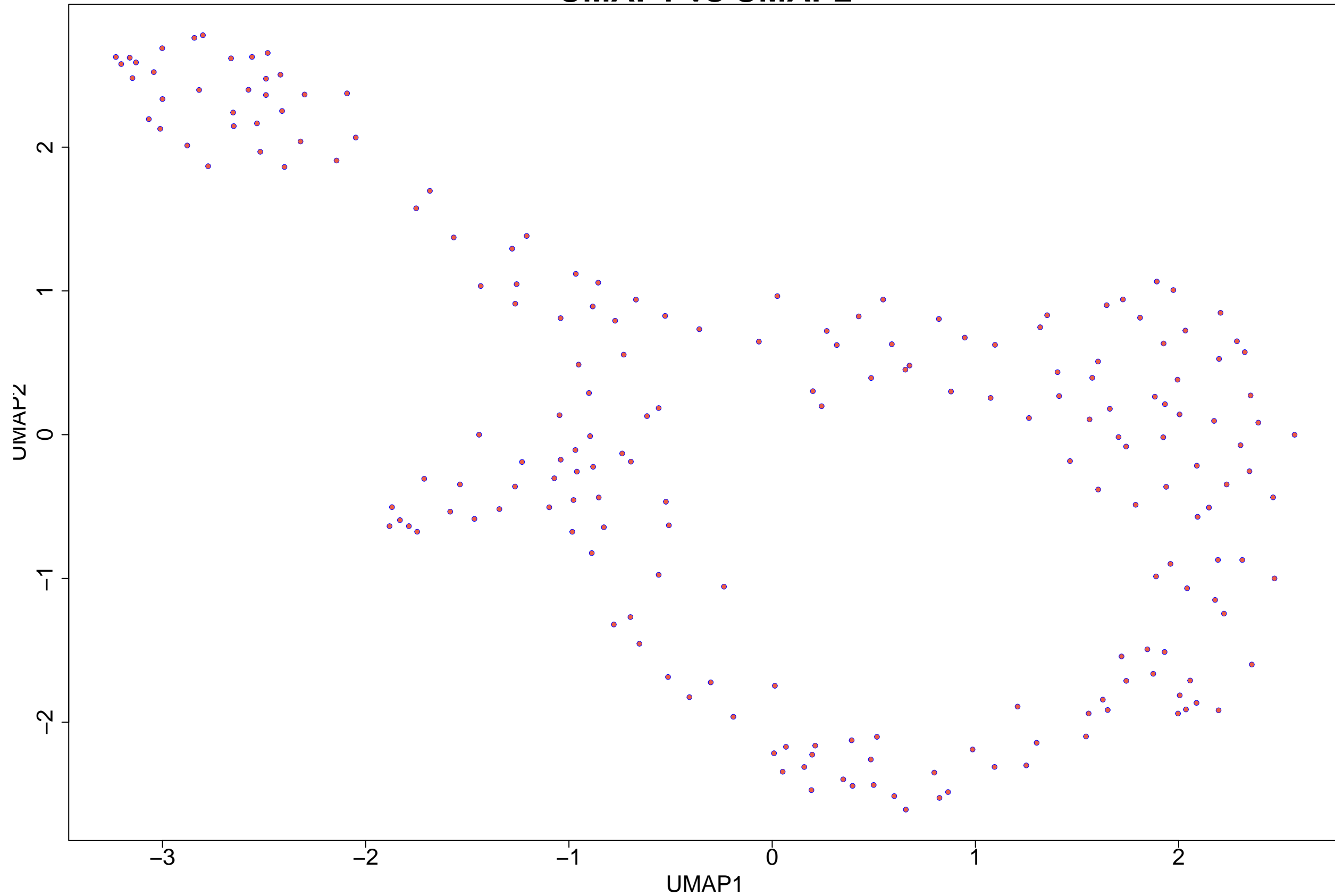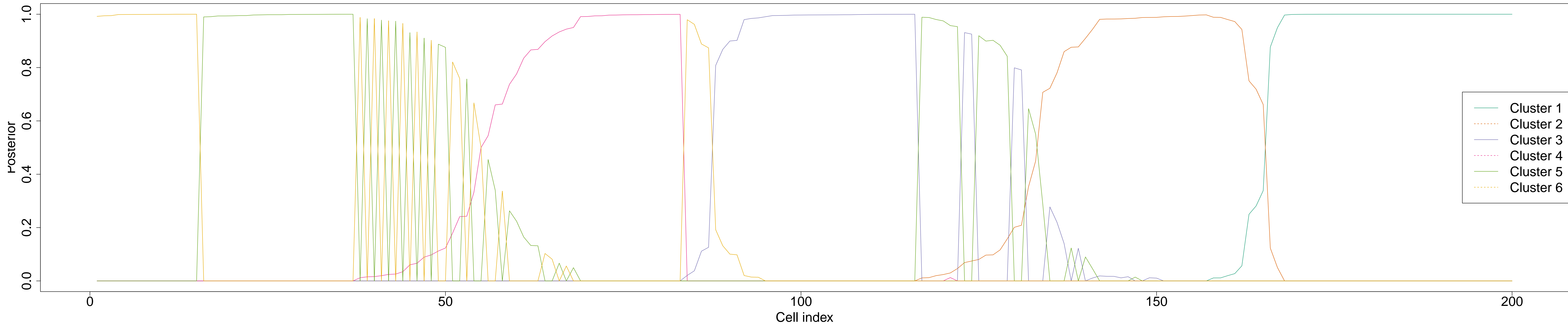
Clustering: UMAP
n = 45 | dist = 0.05
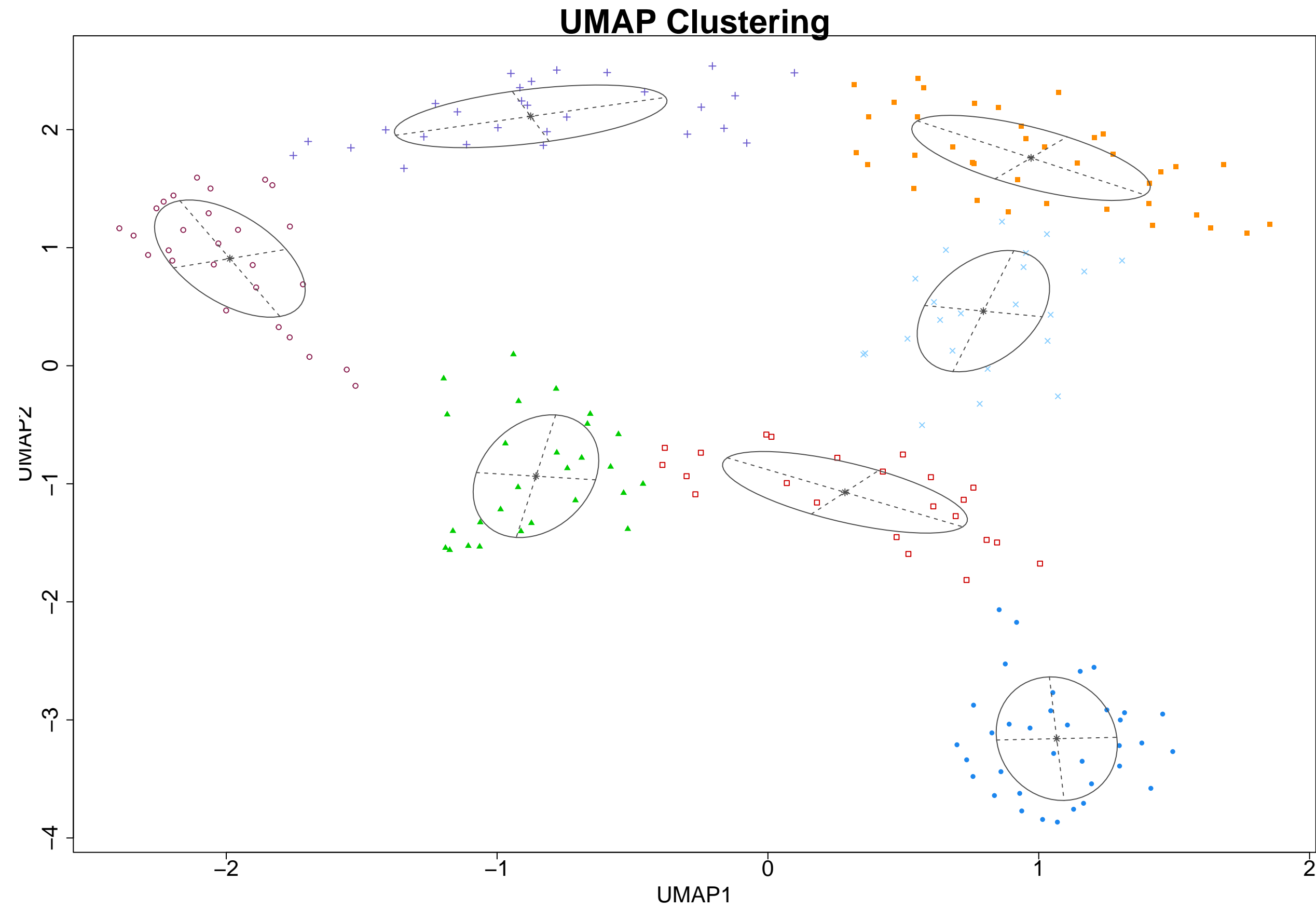
UMAP Trajectory plot
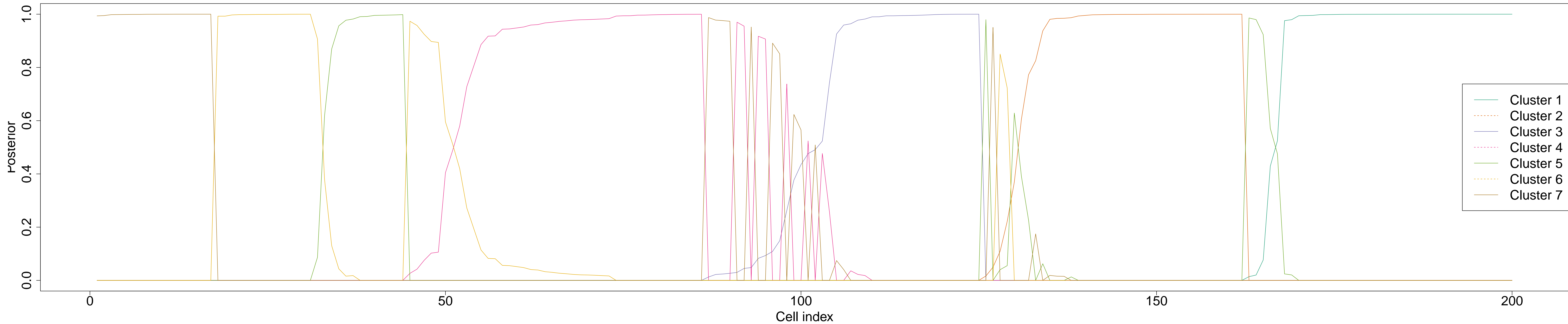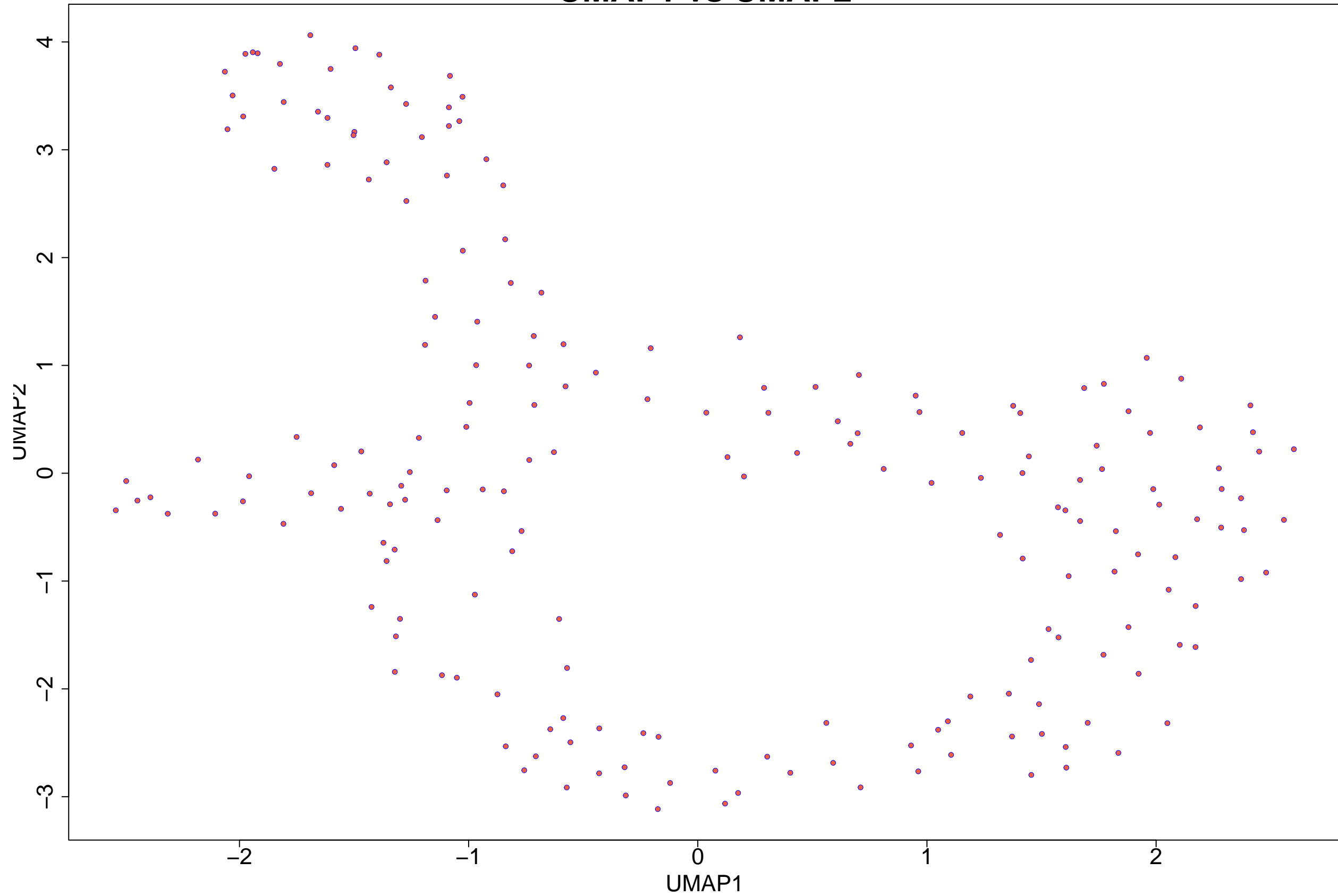
Clustering: UMAP
n = 45 | dist = 0.1

UMAP Trajectory plot
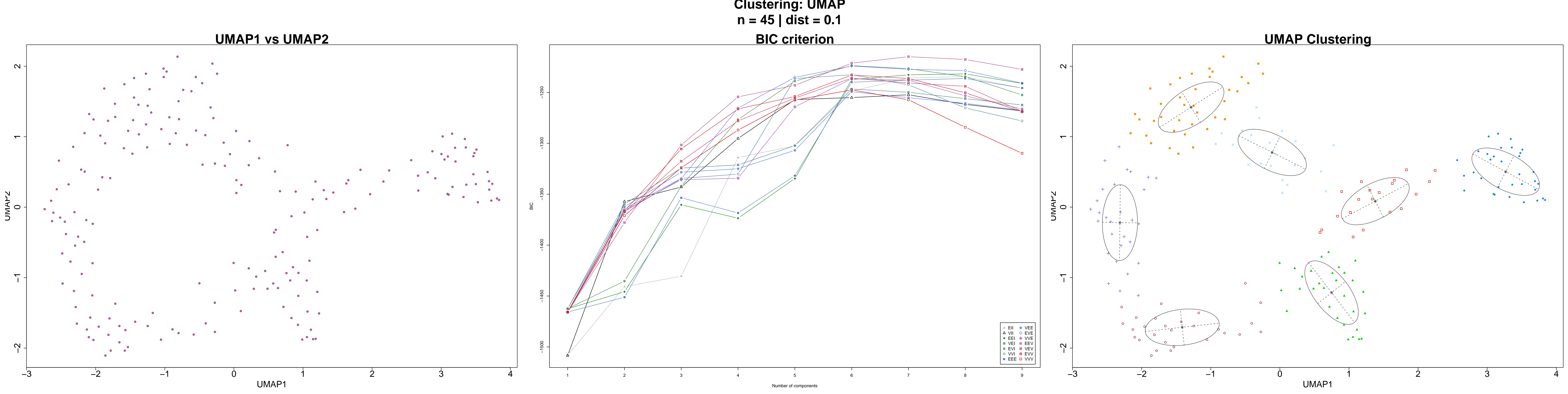
Clustering: UMAP
n = 45 | dist = 0.2
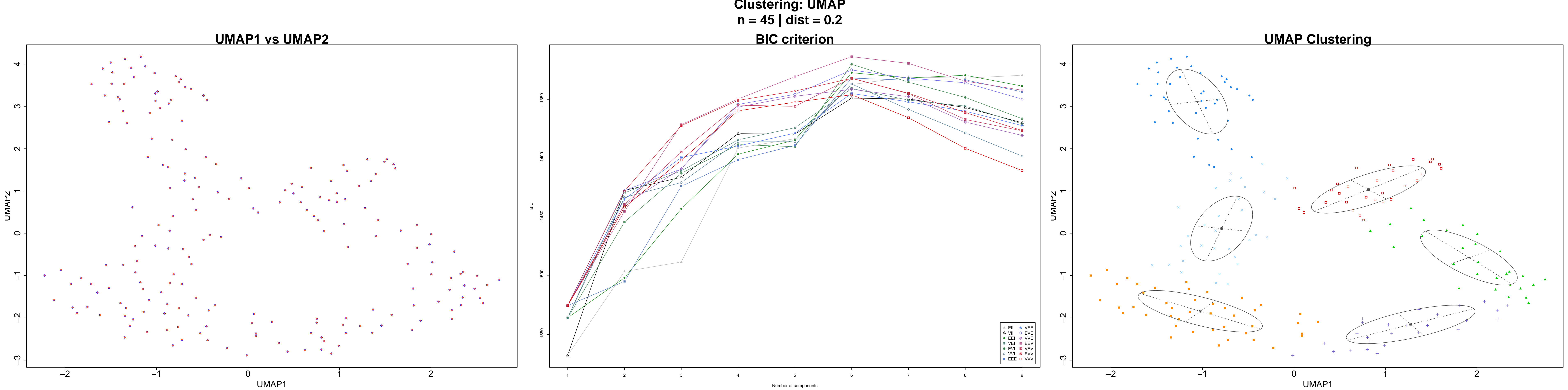
UMAP Trajectory plot
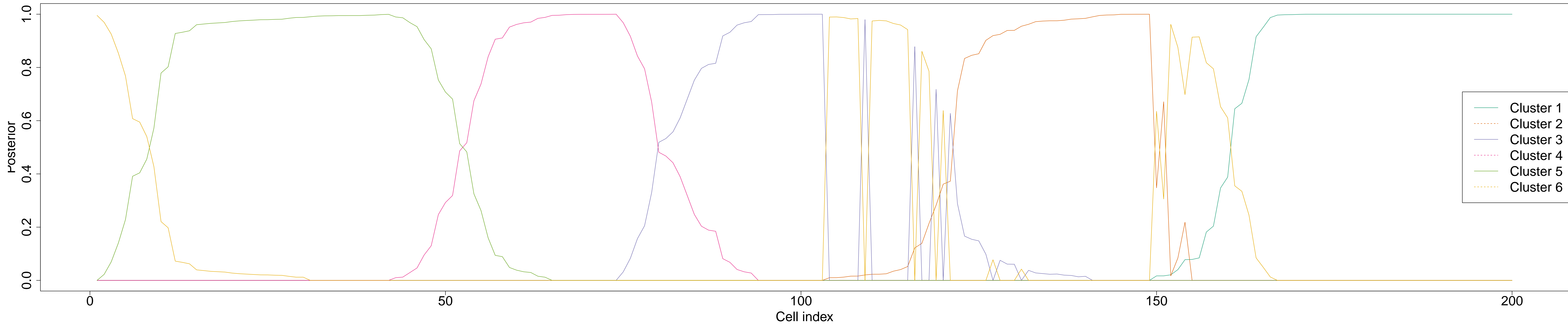
Clustering: UMAP
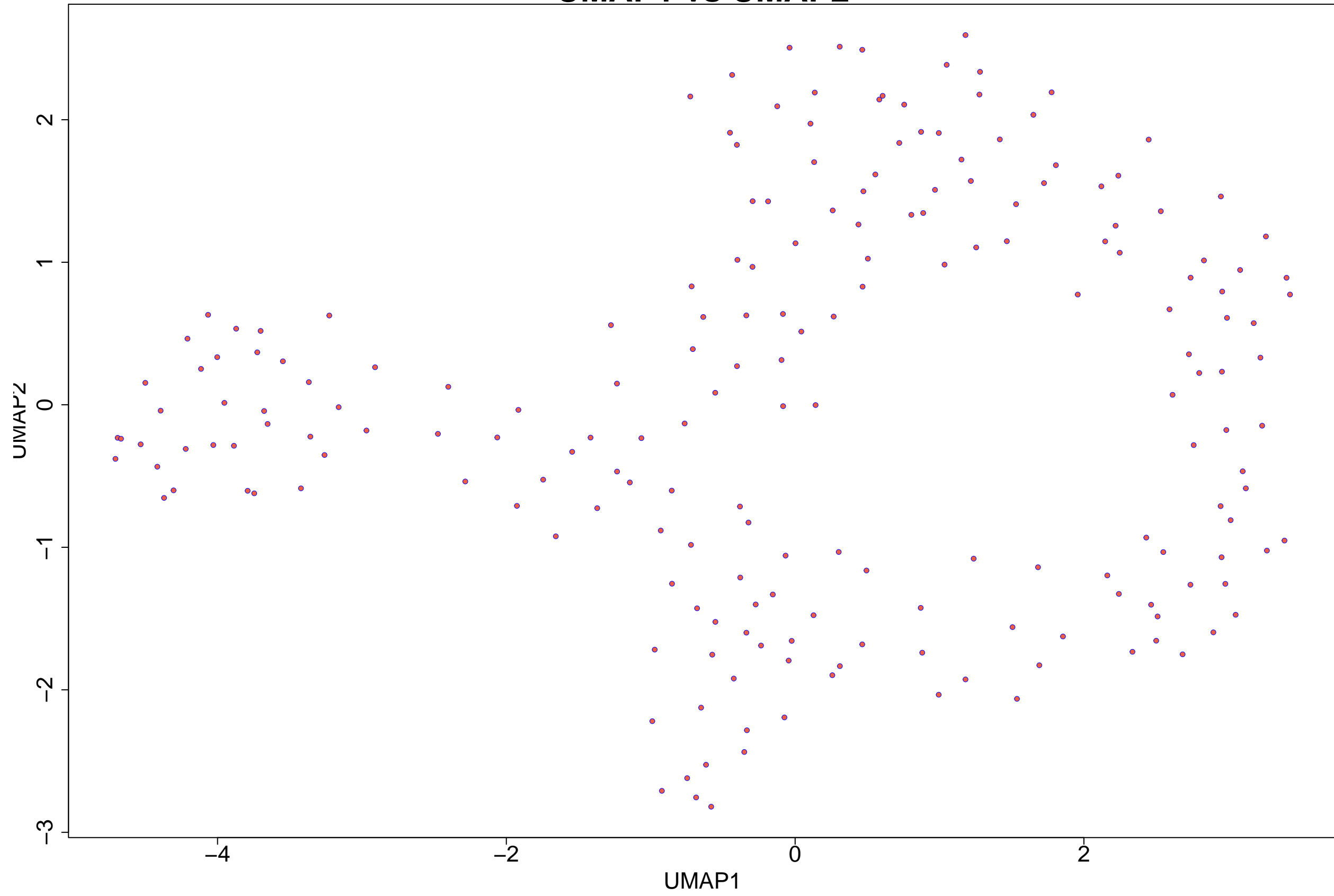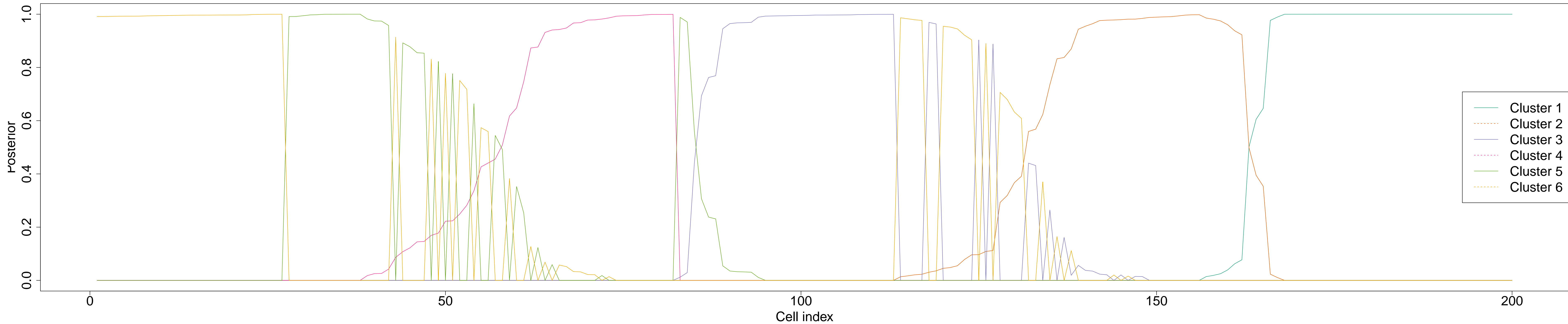**n = 45 | dist = 0.3**

UMAP Trajectory plot
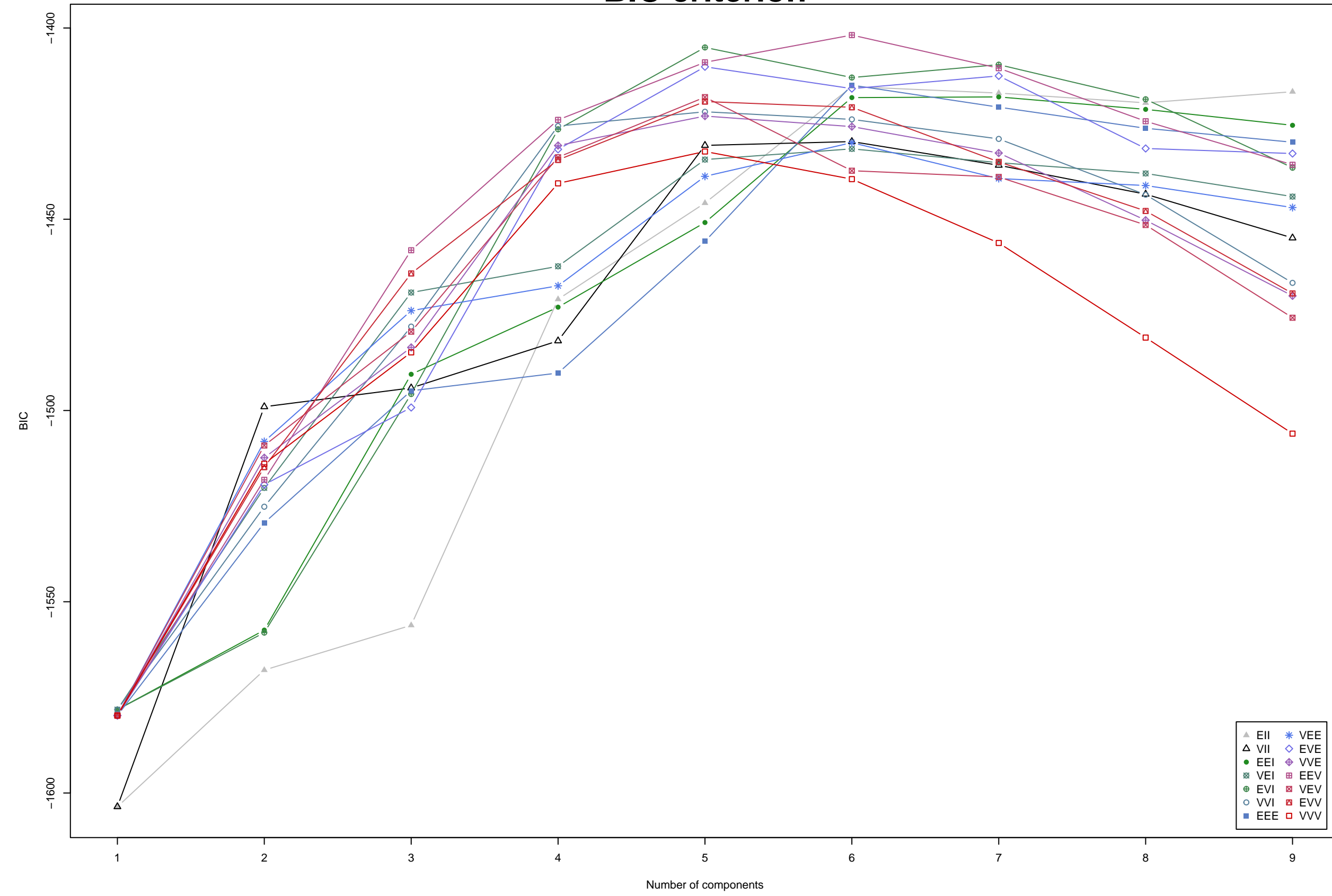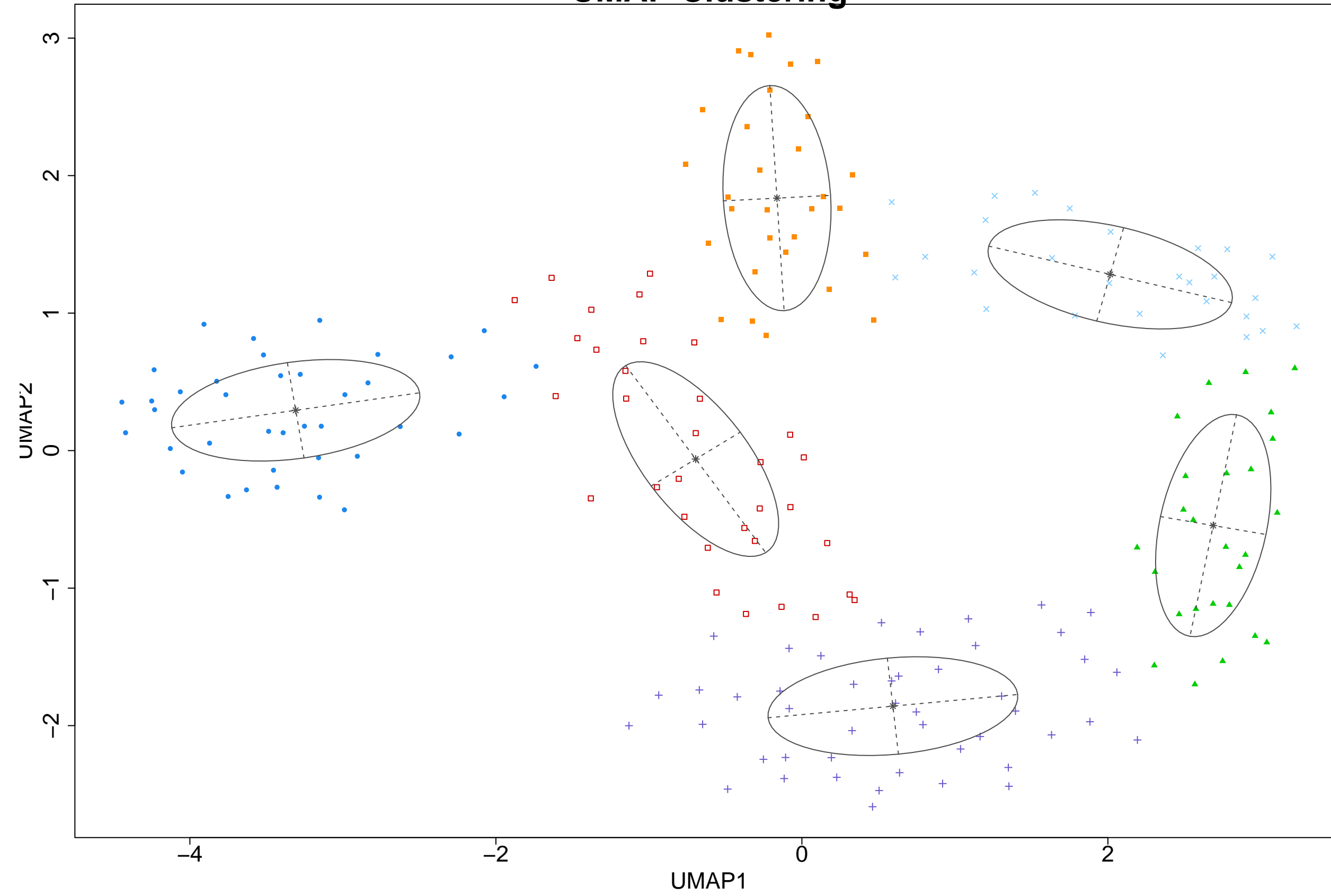
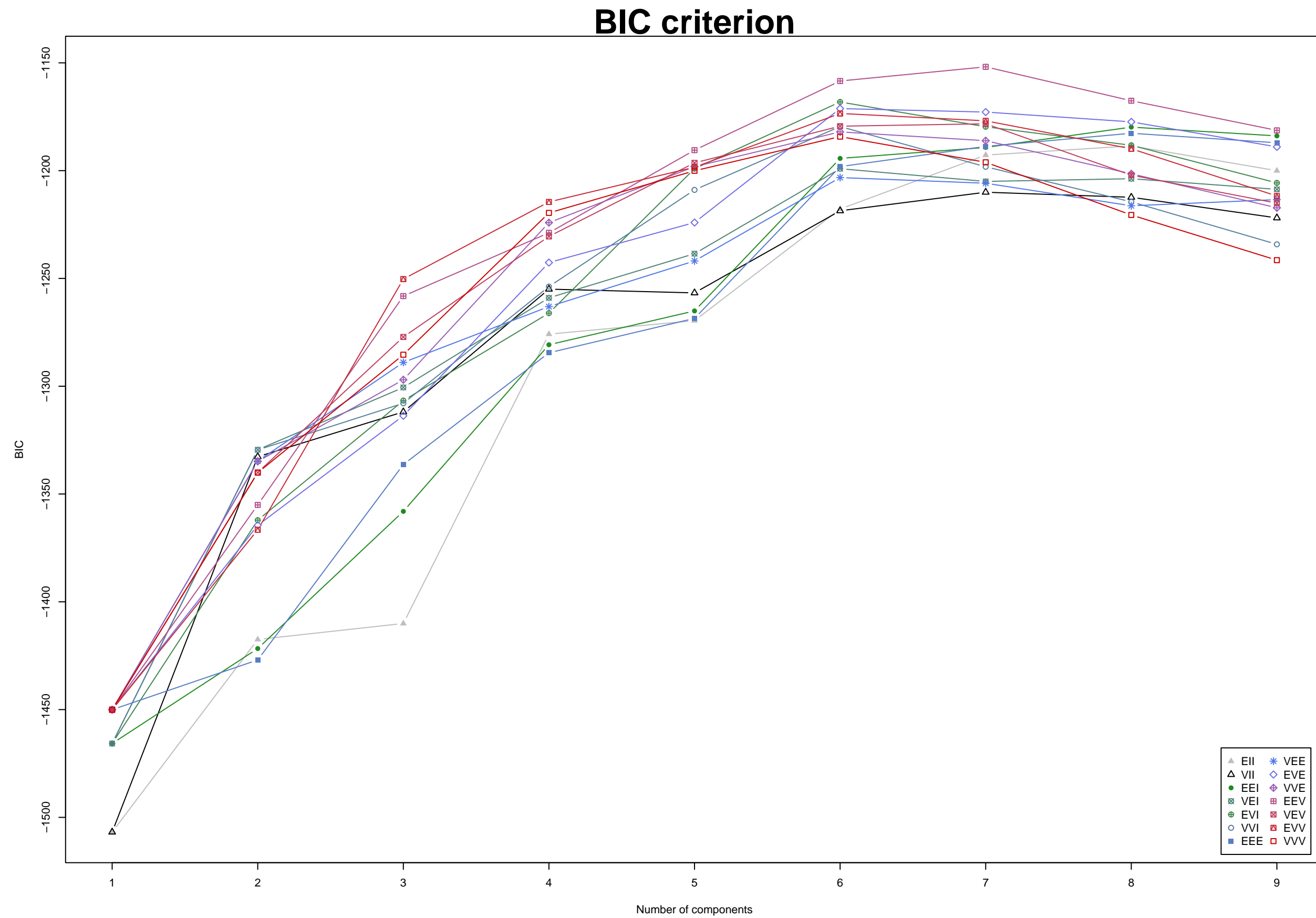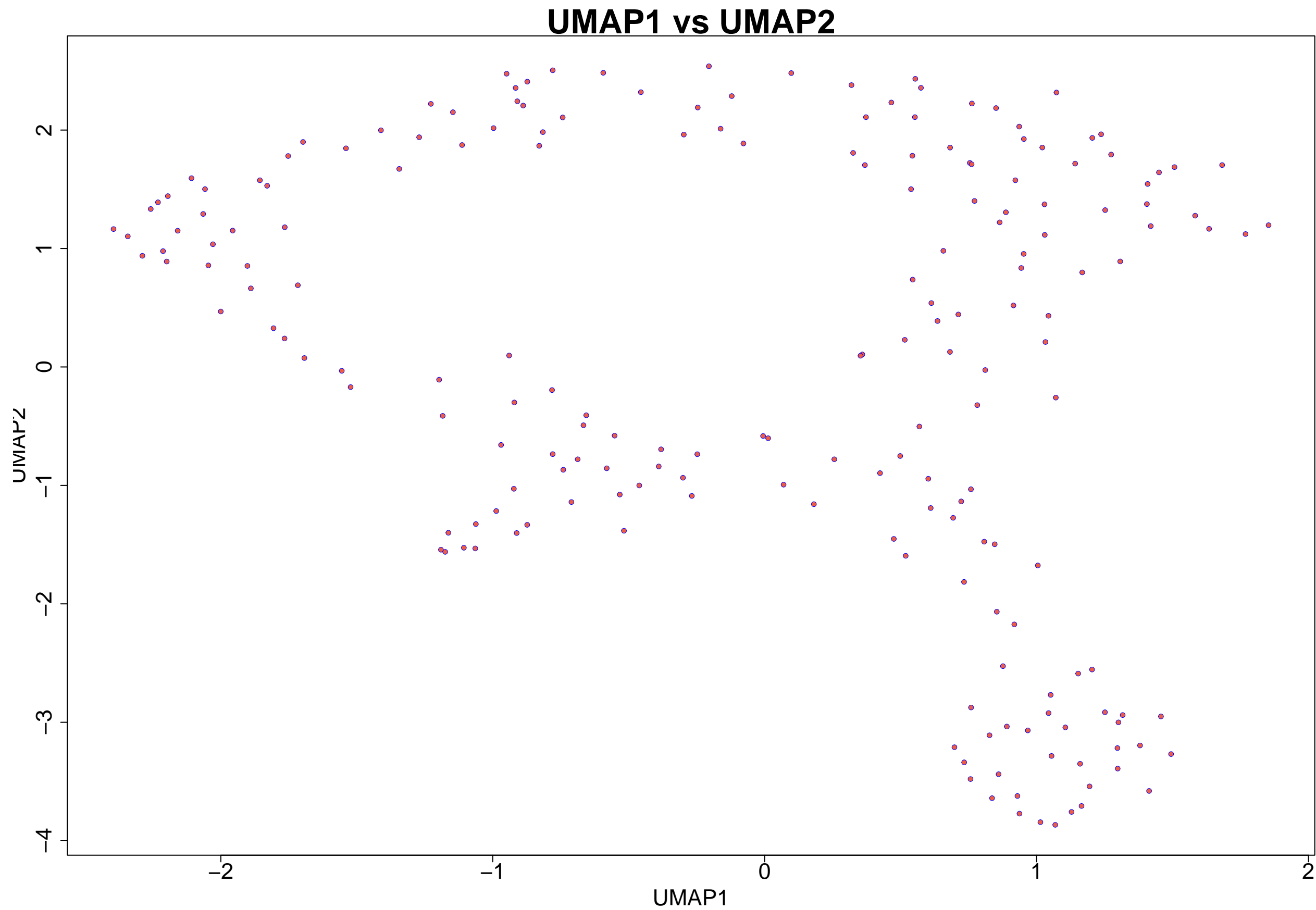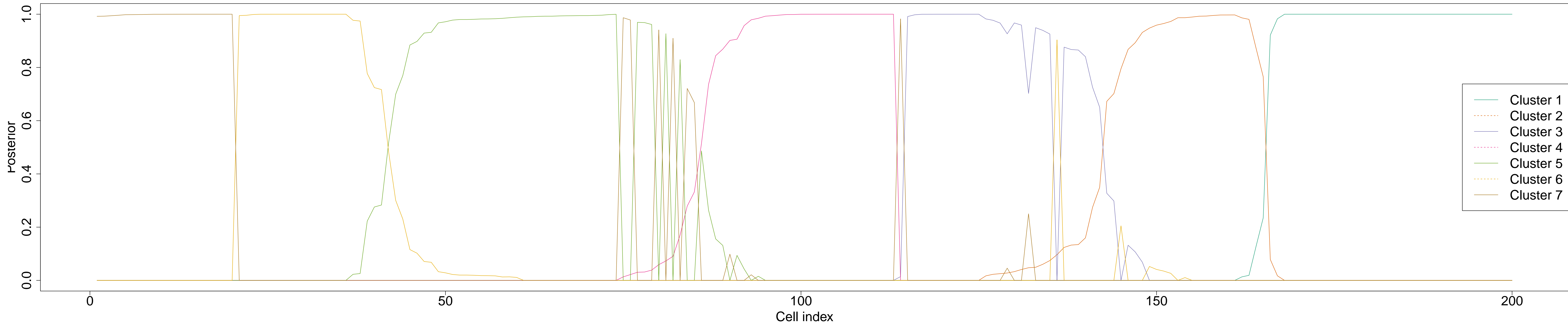**Clustering: UMAP**
n = 45 | dist = 0.4

UMAP Trajectory plot
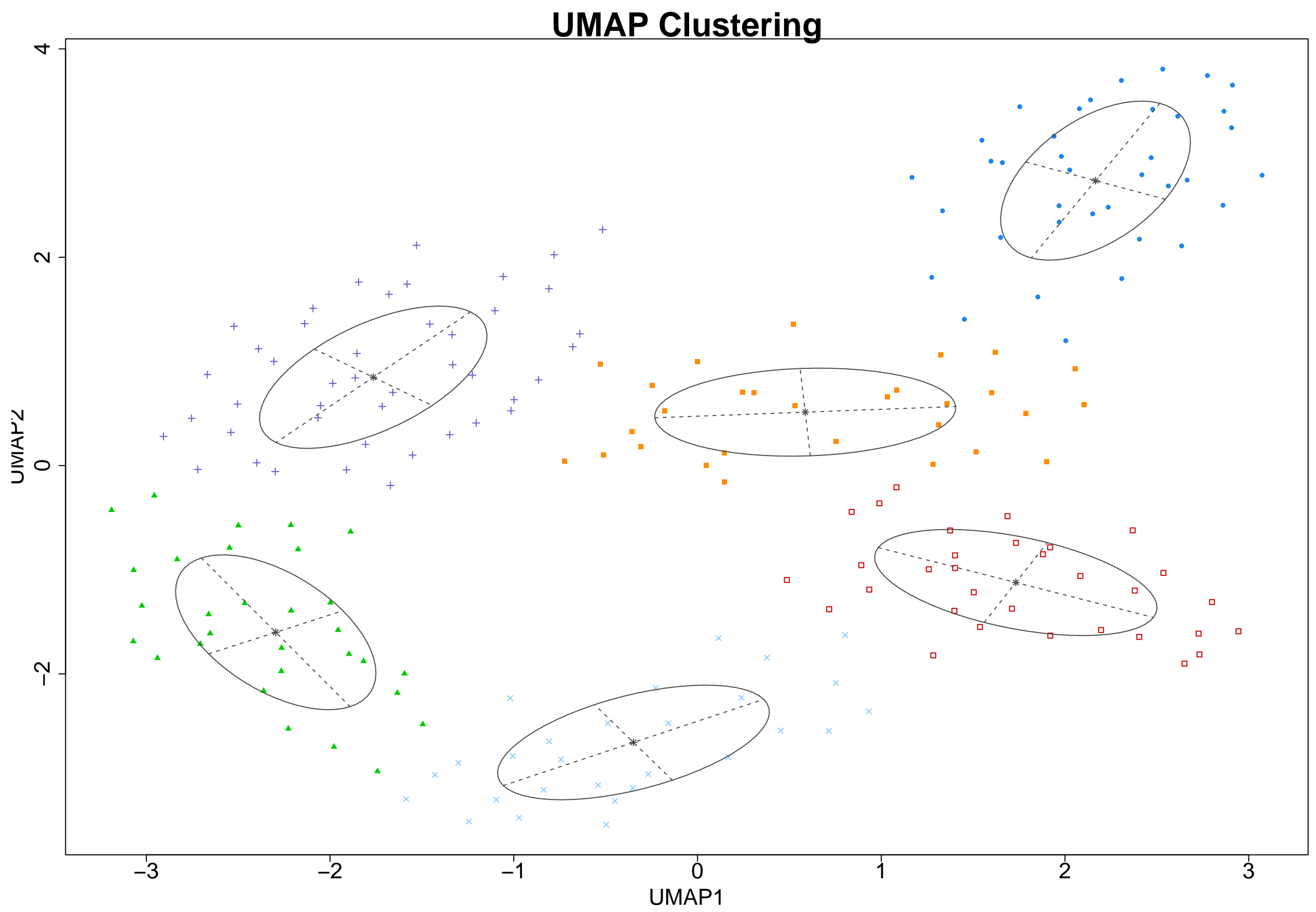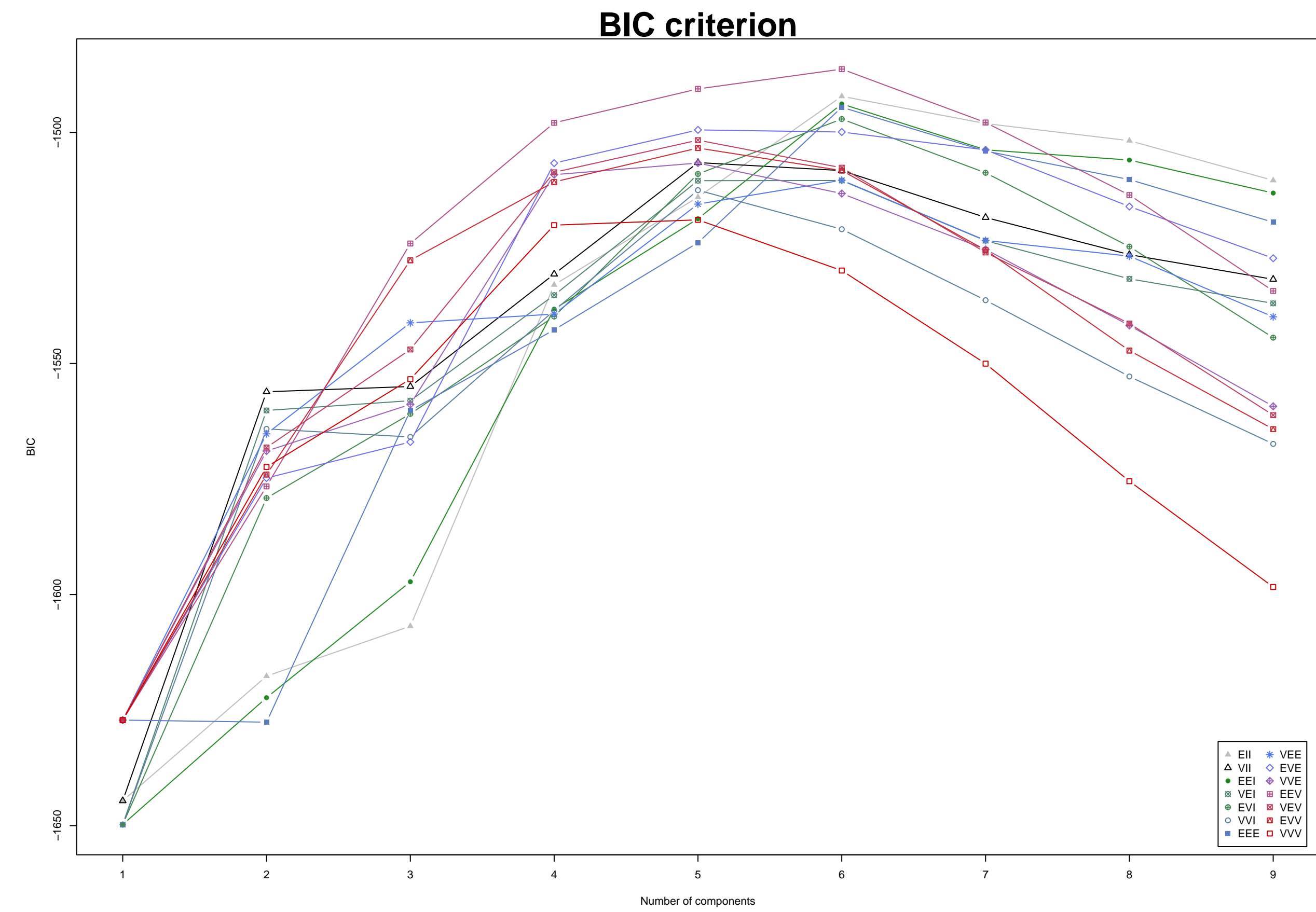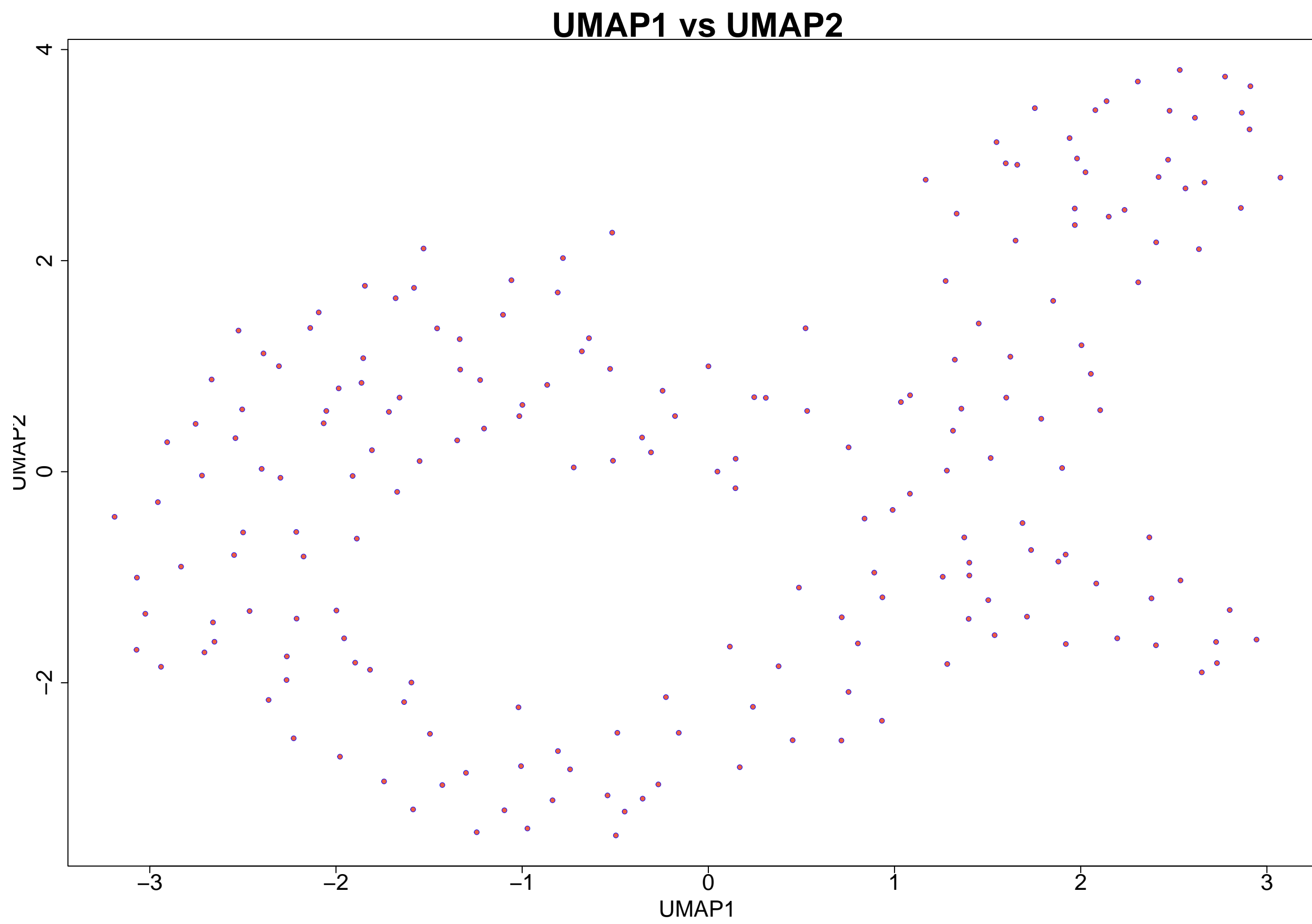
Clustering: UMAP
n = 50 | dist = 0.05

UMAP Trajectory plot
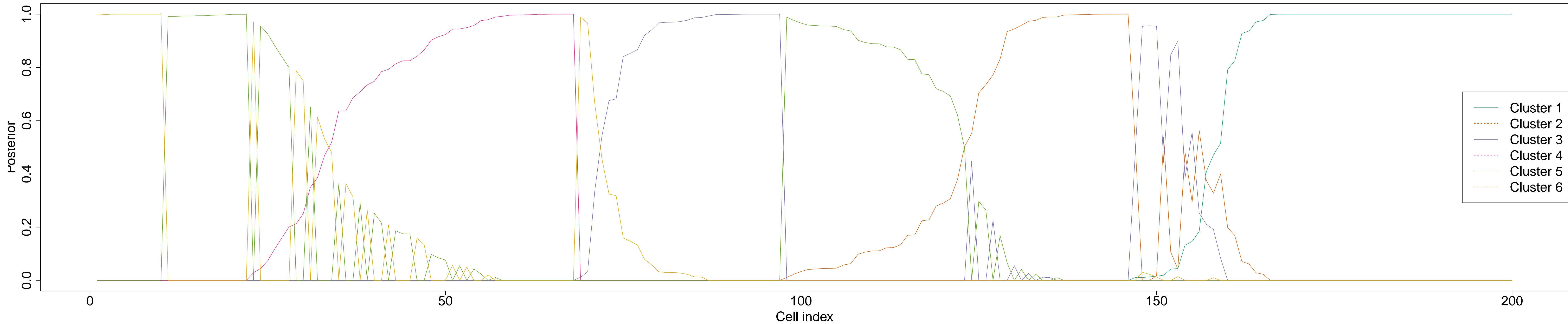
Clustering: UMAP
n = 50 | dist = 0.1

UMAP Trajectory plot

Clustering: UMAP
n = 50 | dist = 0.2
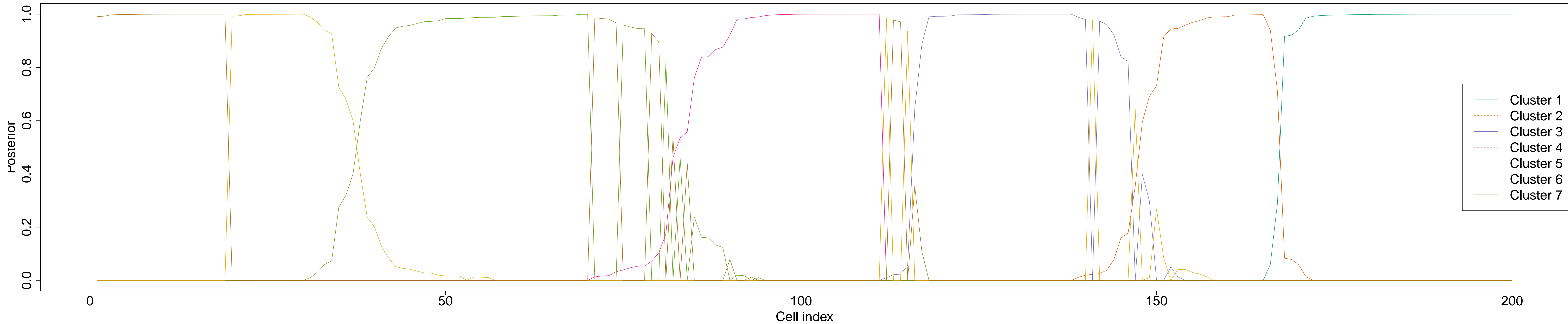
UMAP Trajectory plot

Clustering: UMAP
n = 50 | dist = 0.3

UMAP Trajectory plot
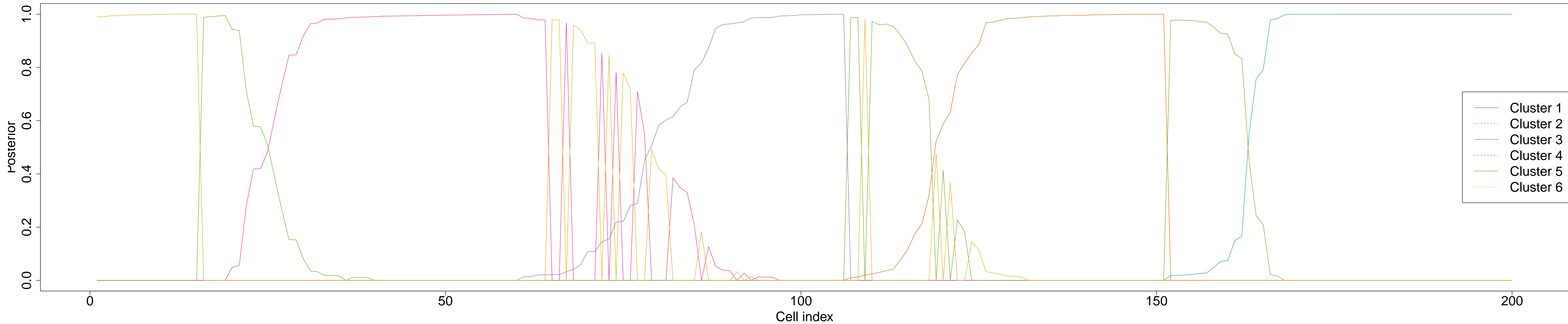
Clustering: UMAP
n = 50 | dist = 0.4

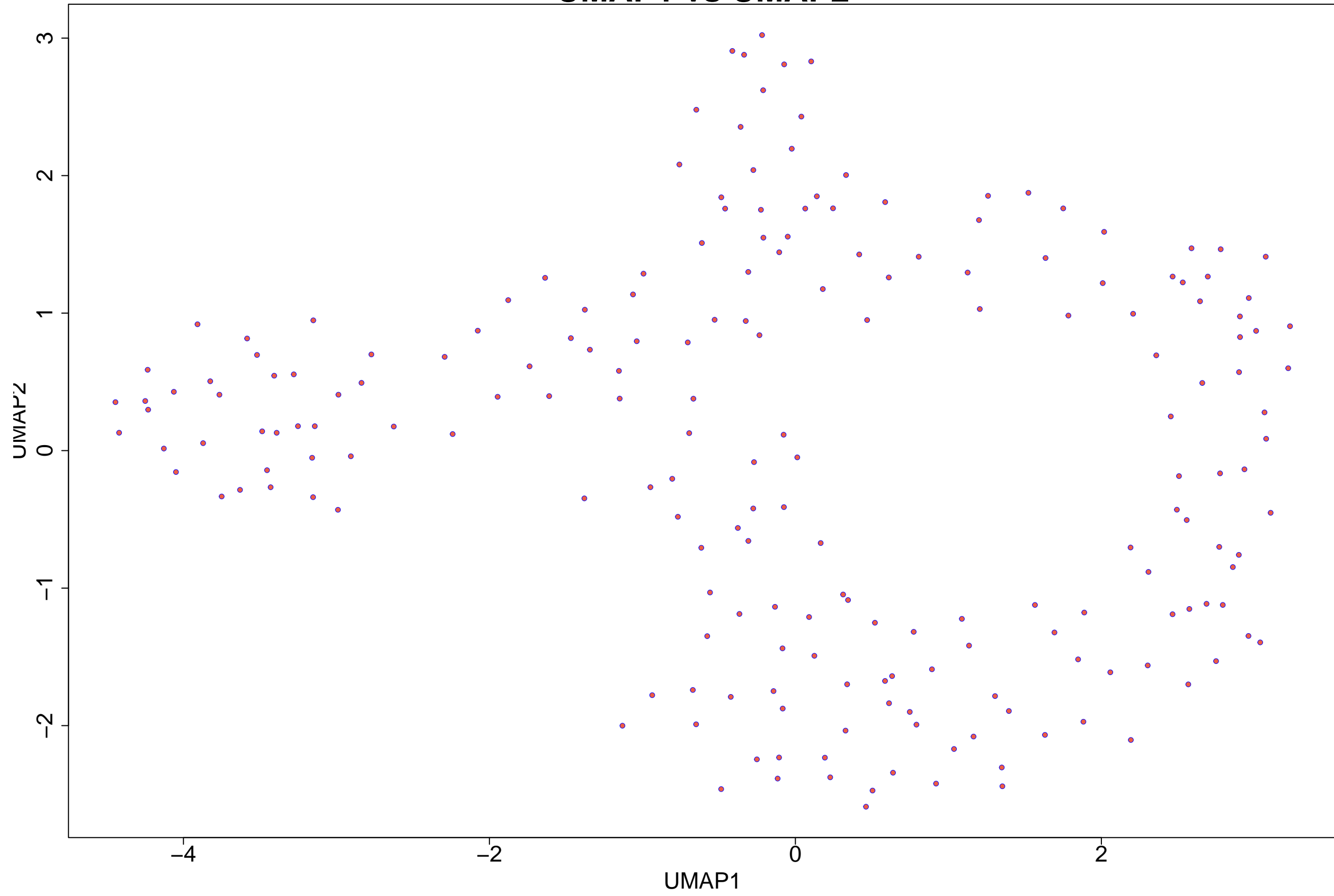UMAP Trajectory plot
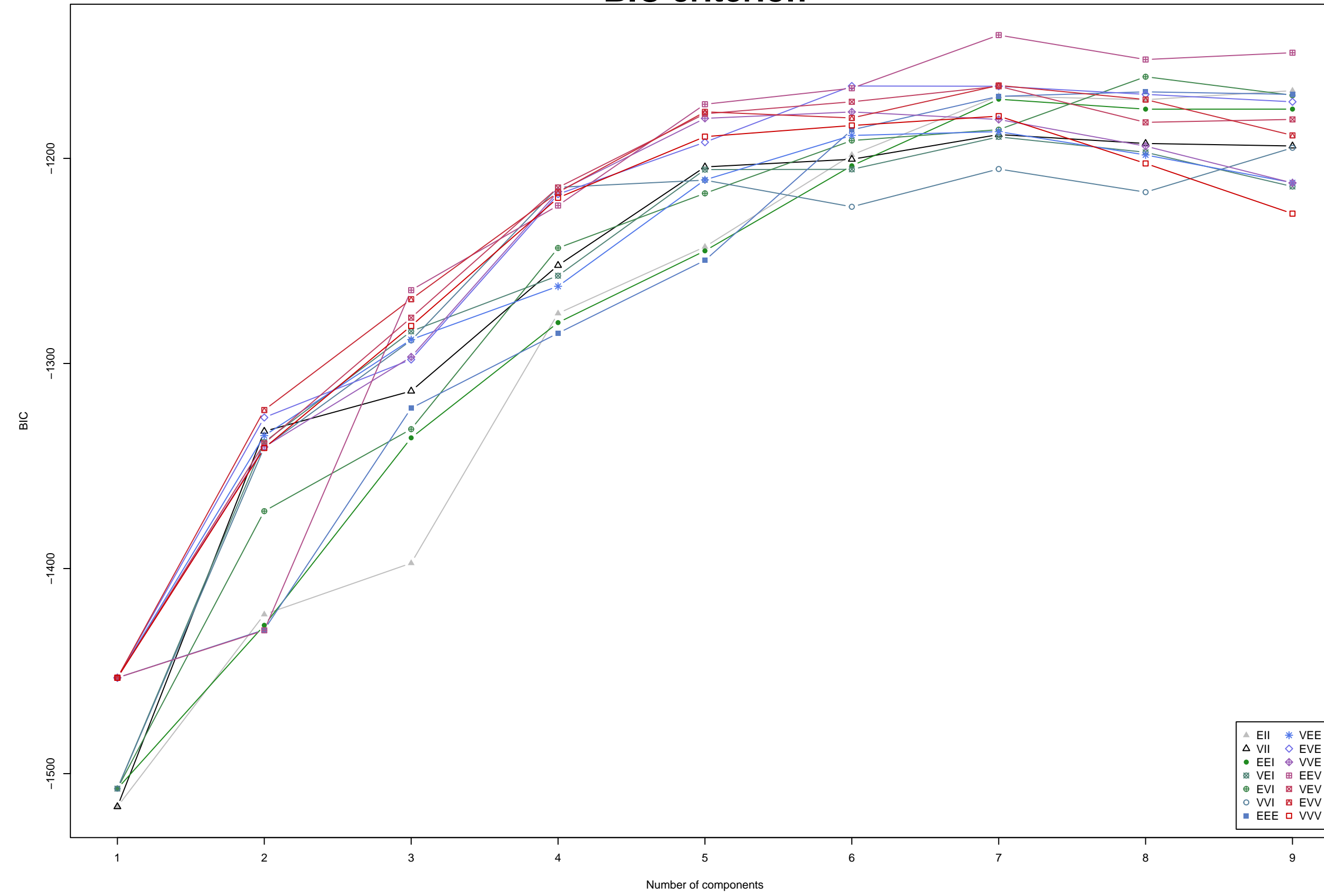
Clustering: UMAP
n = 35 | dist = 0.05
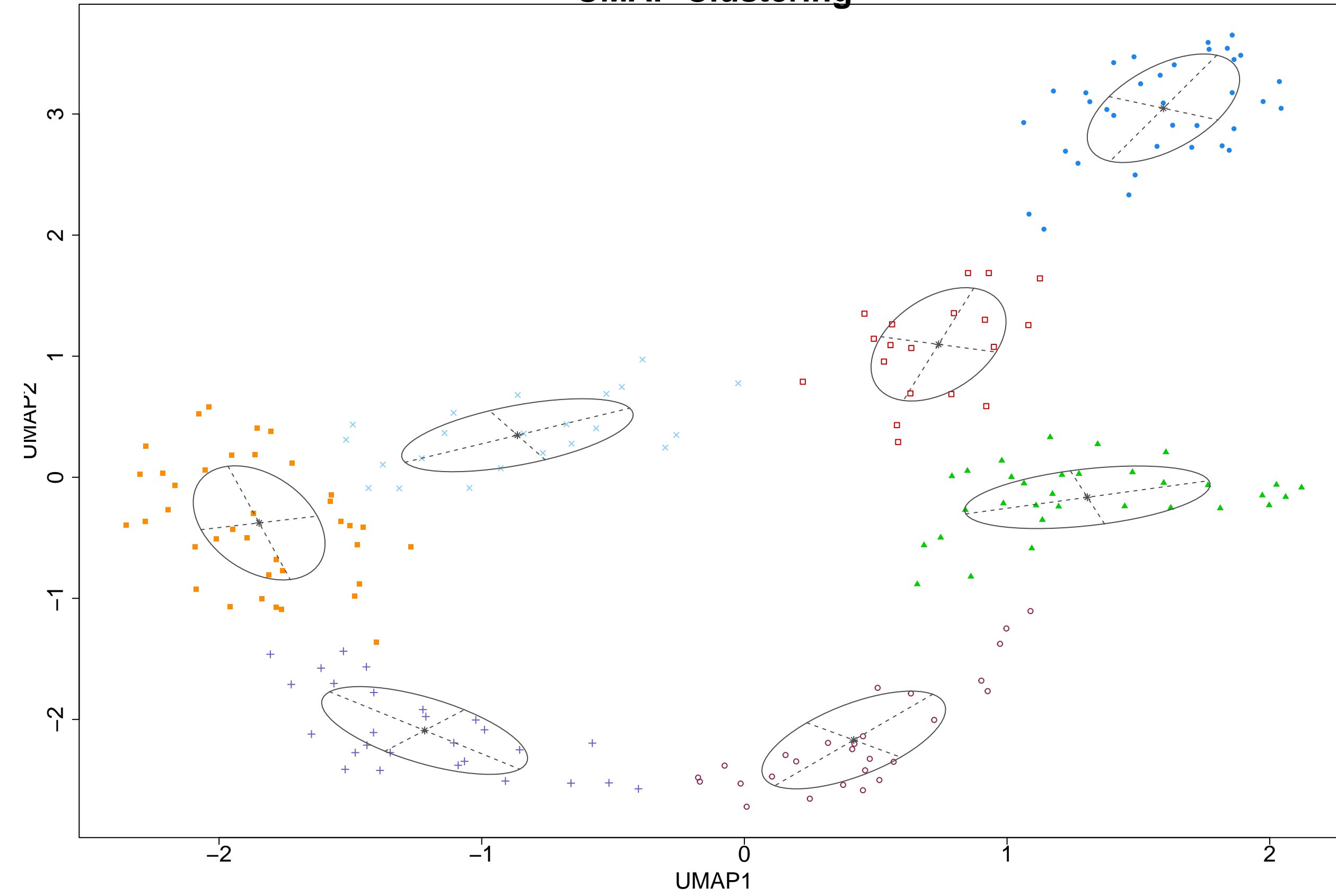
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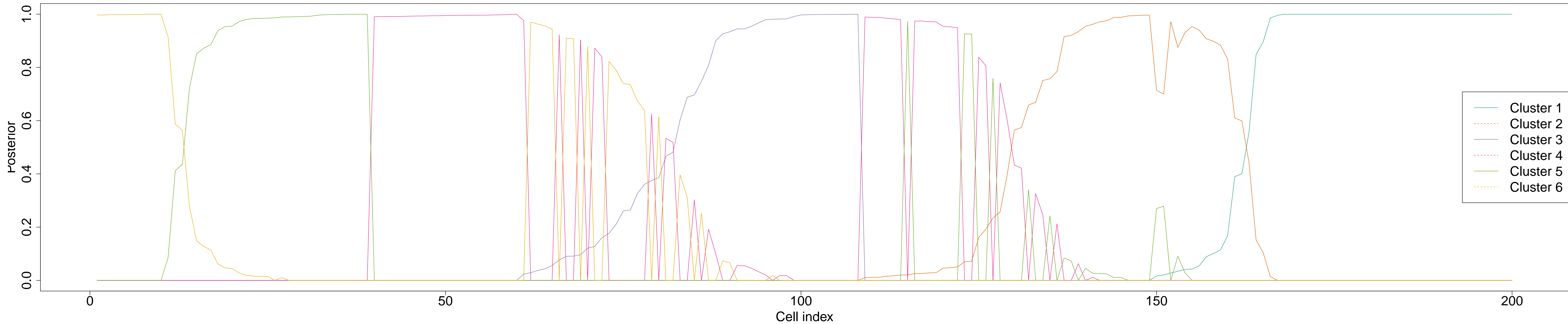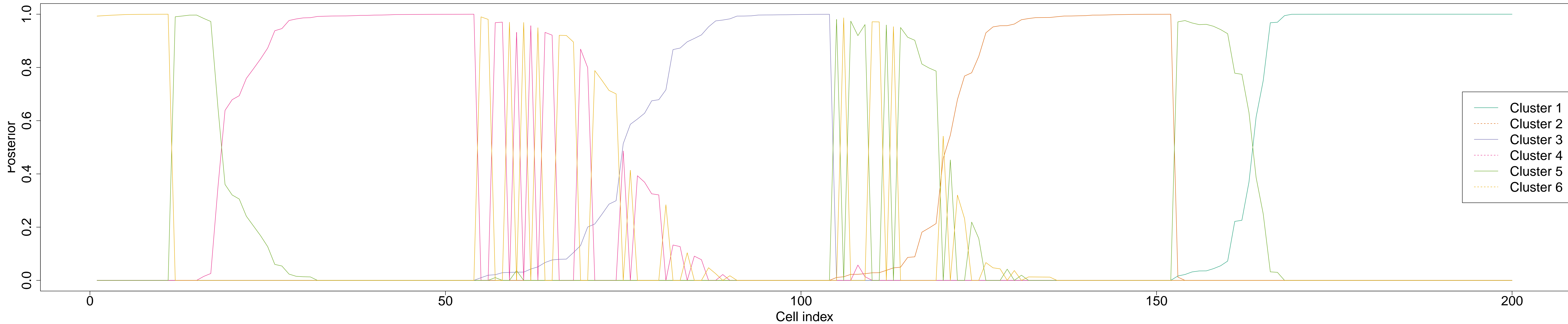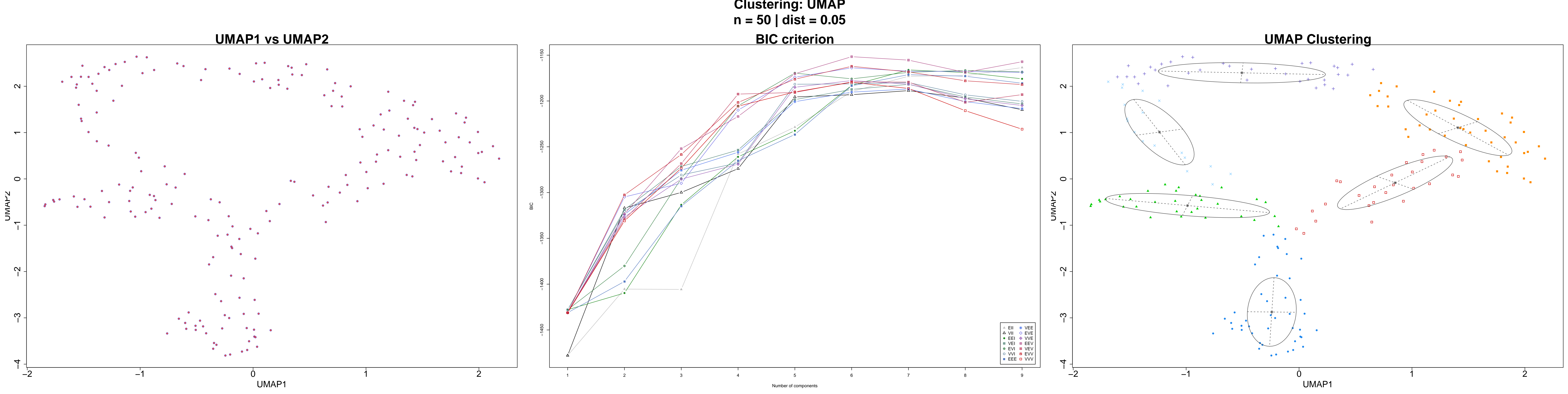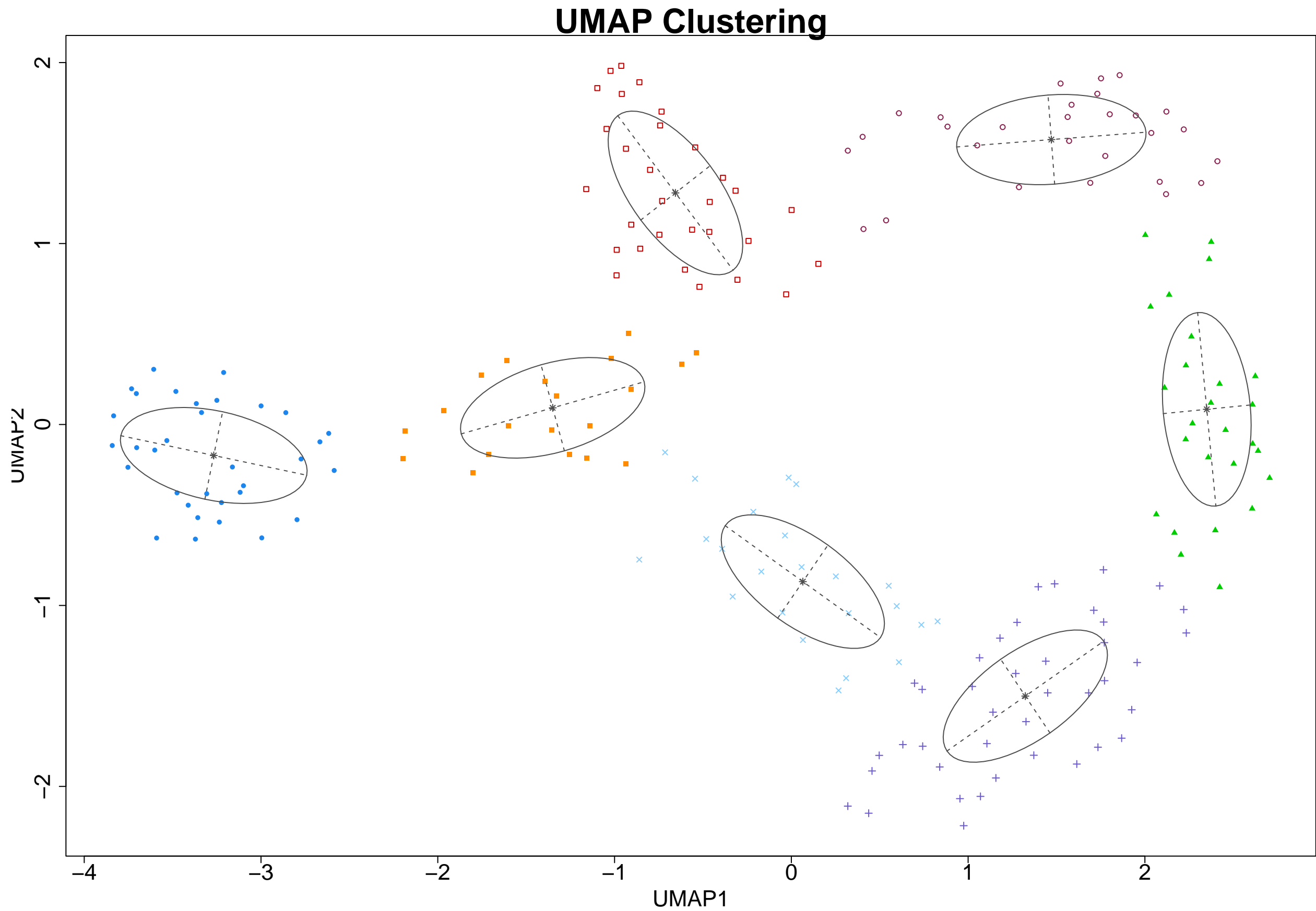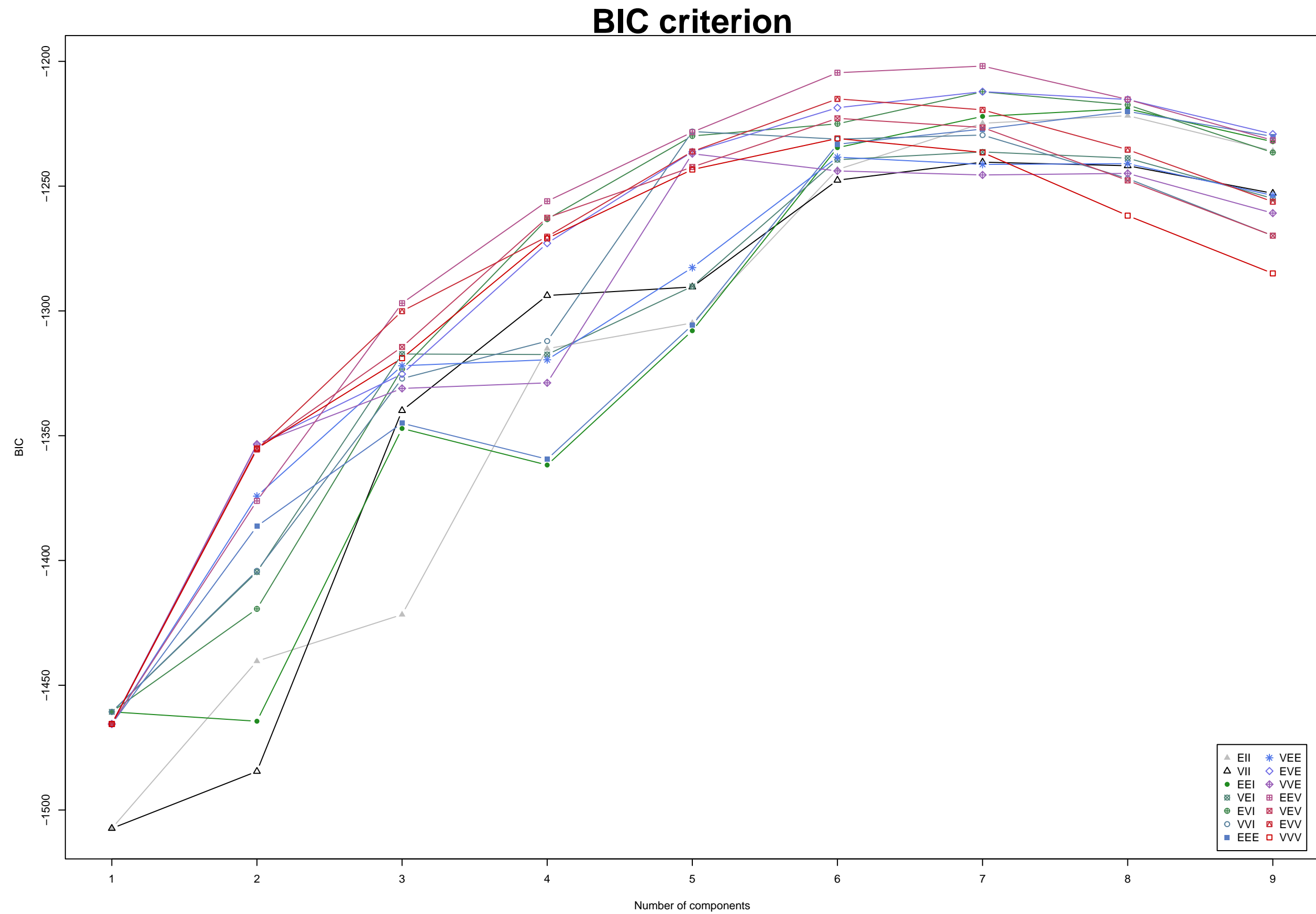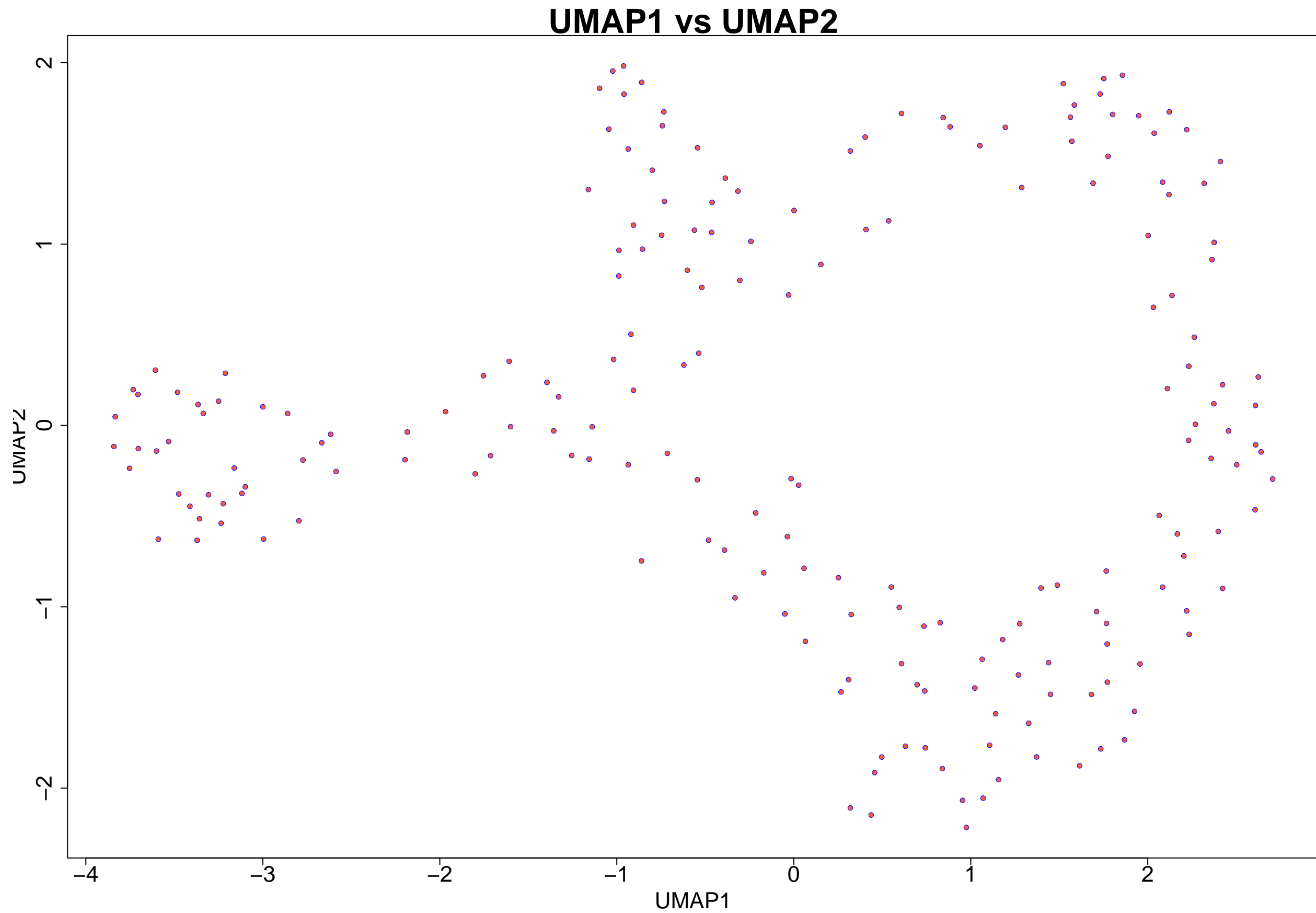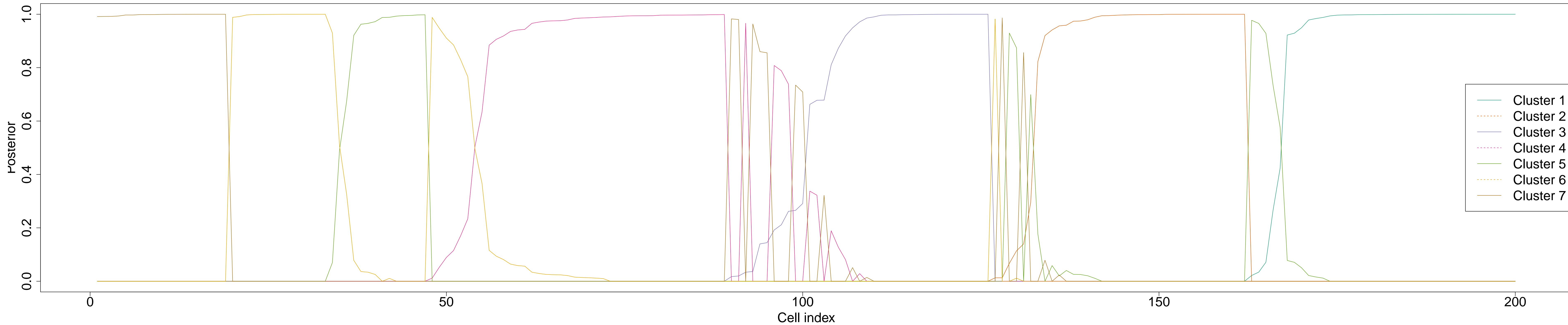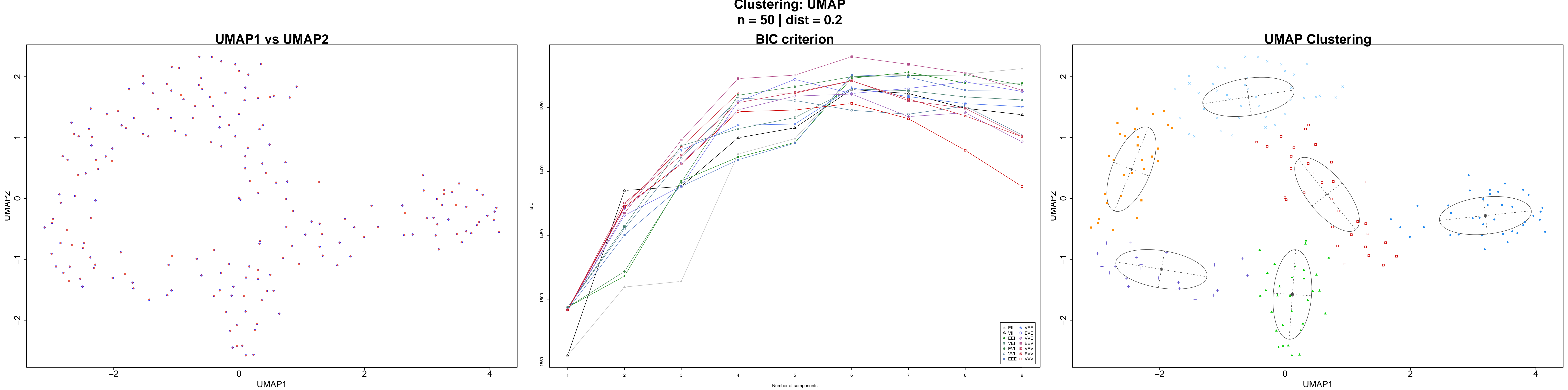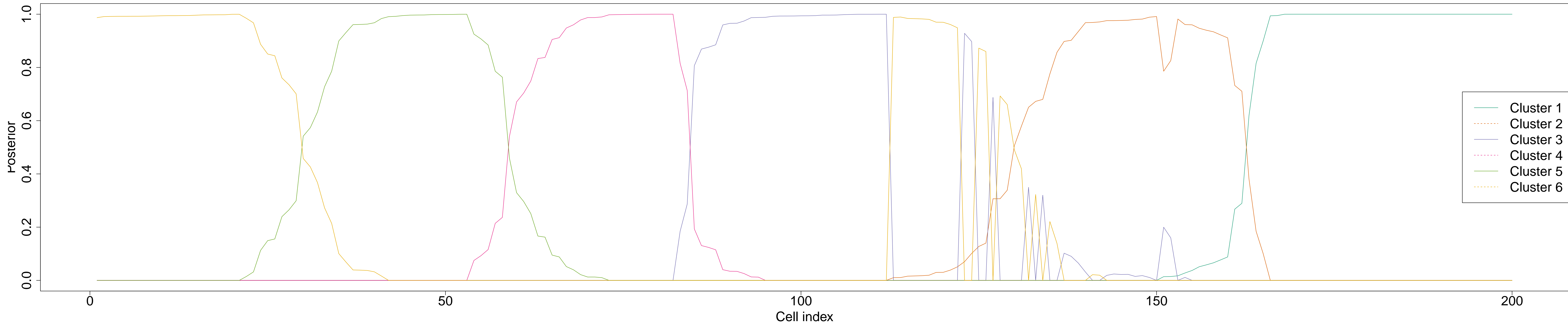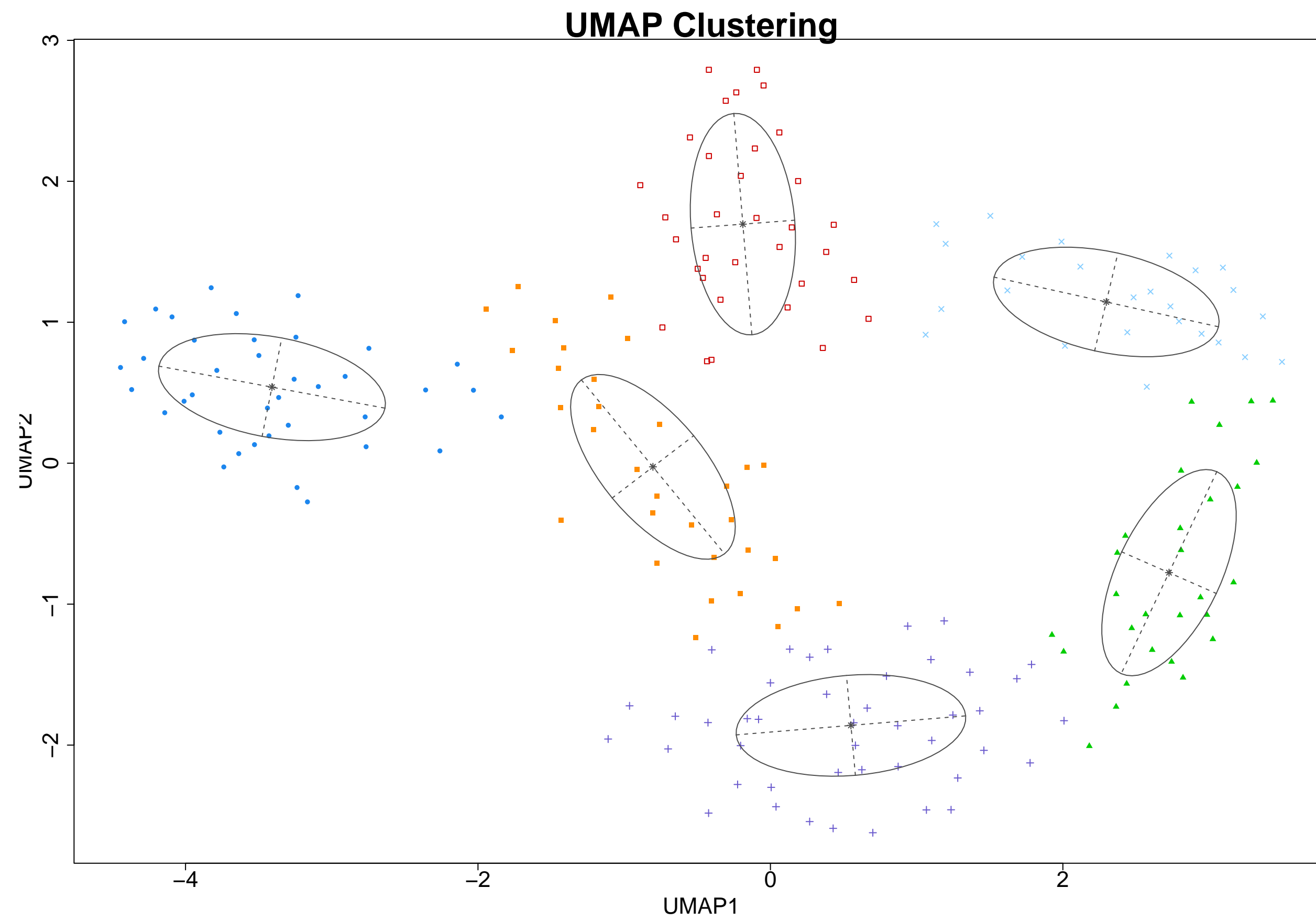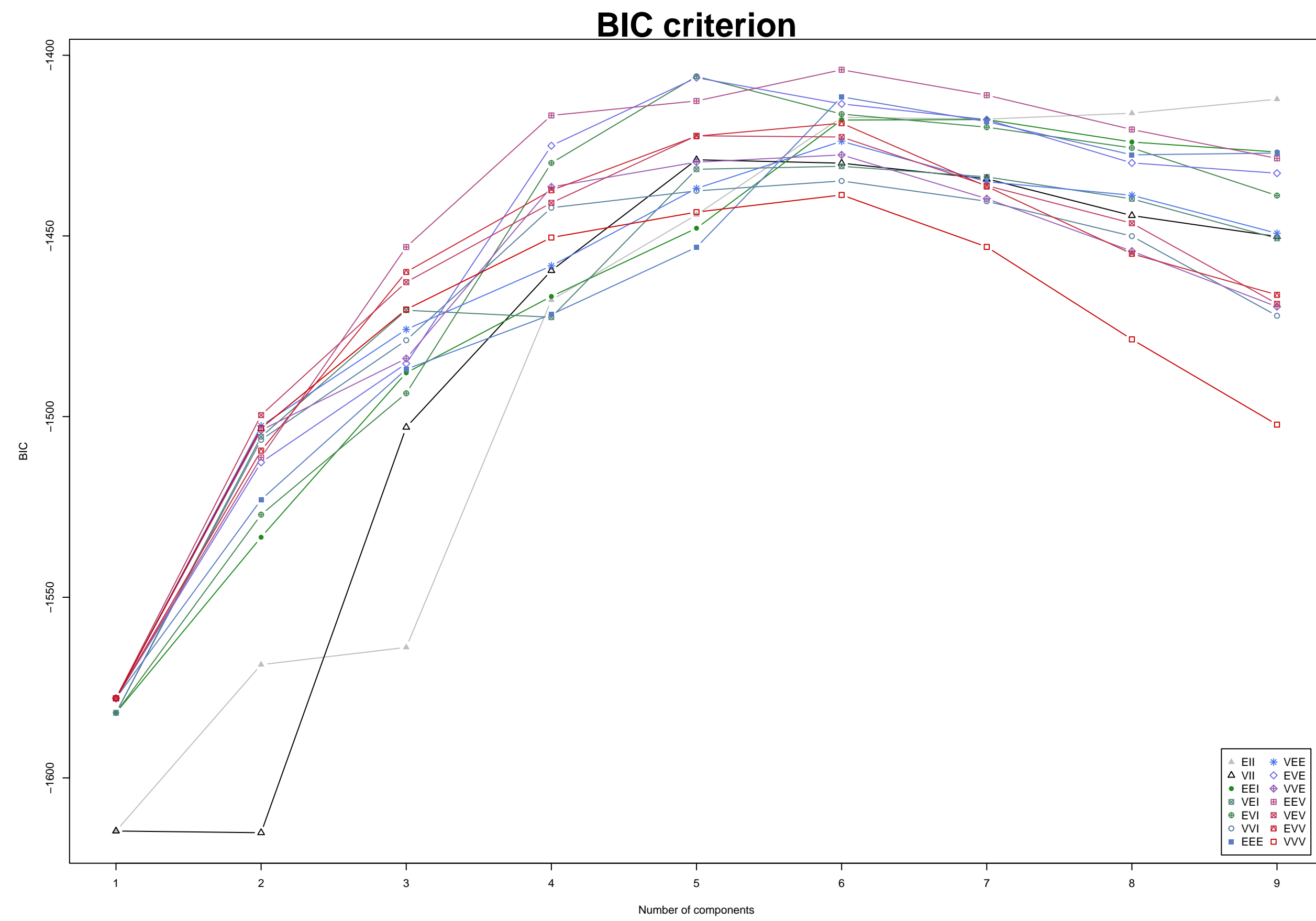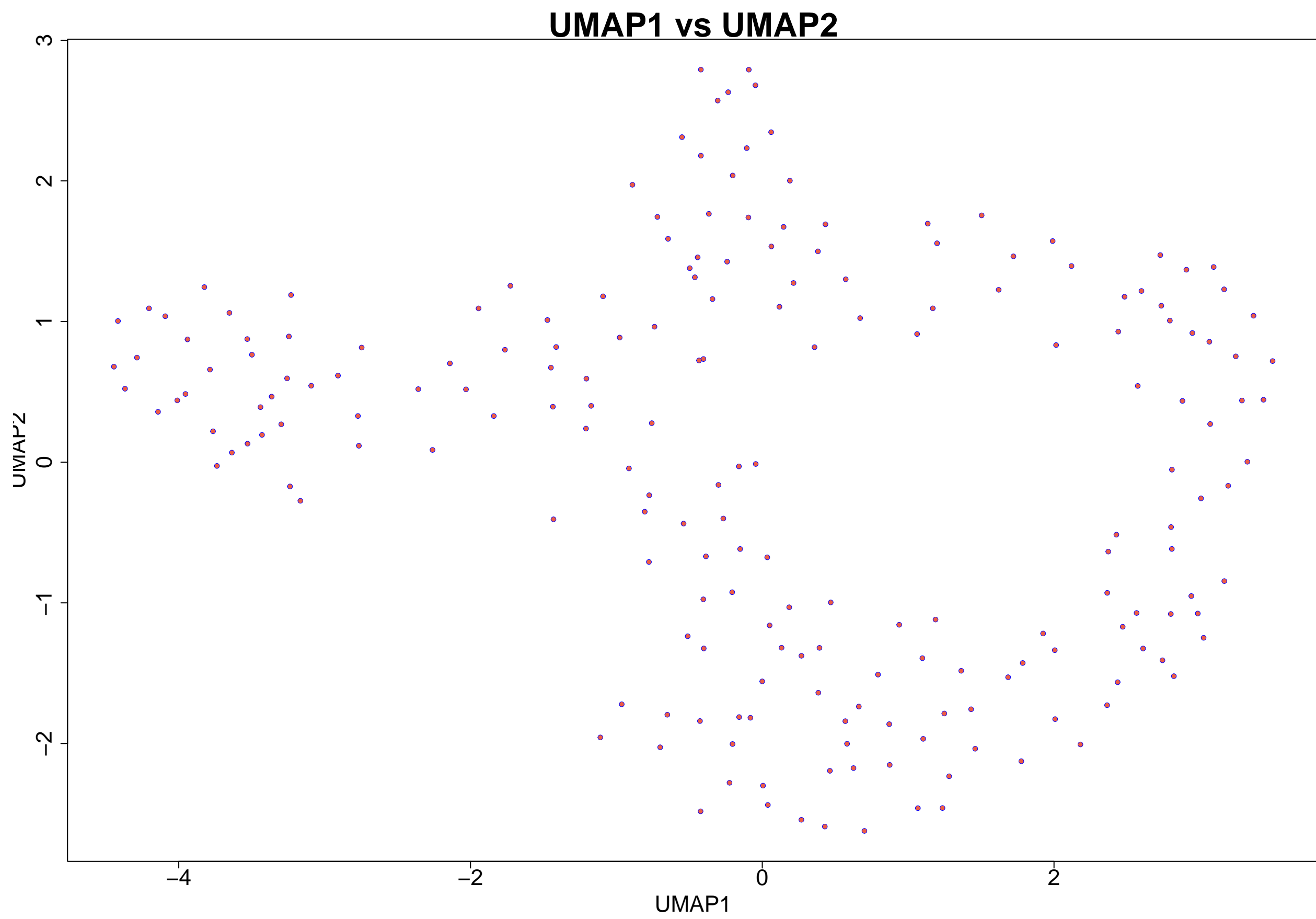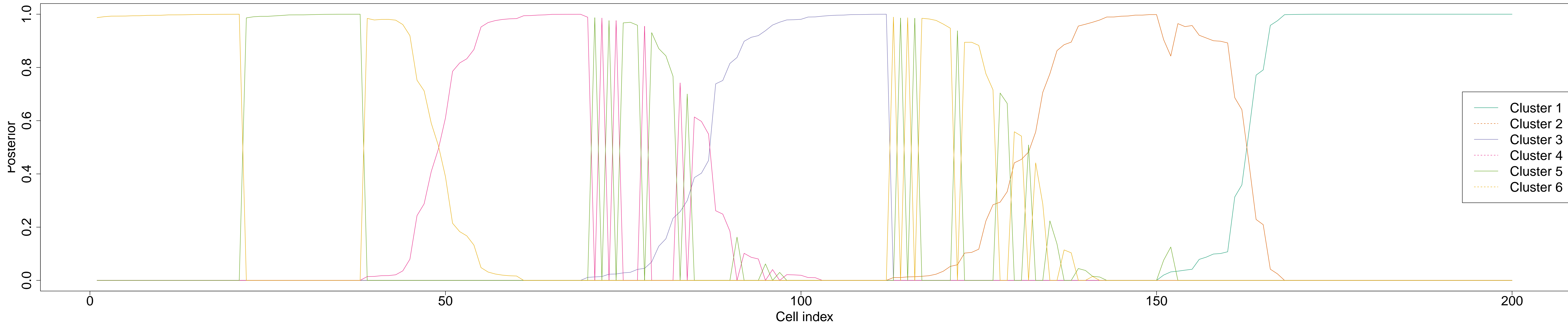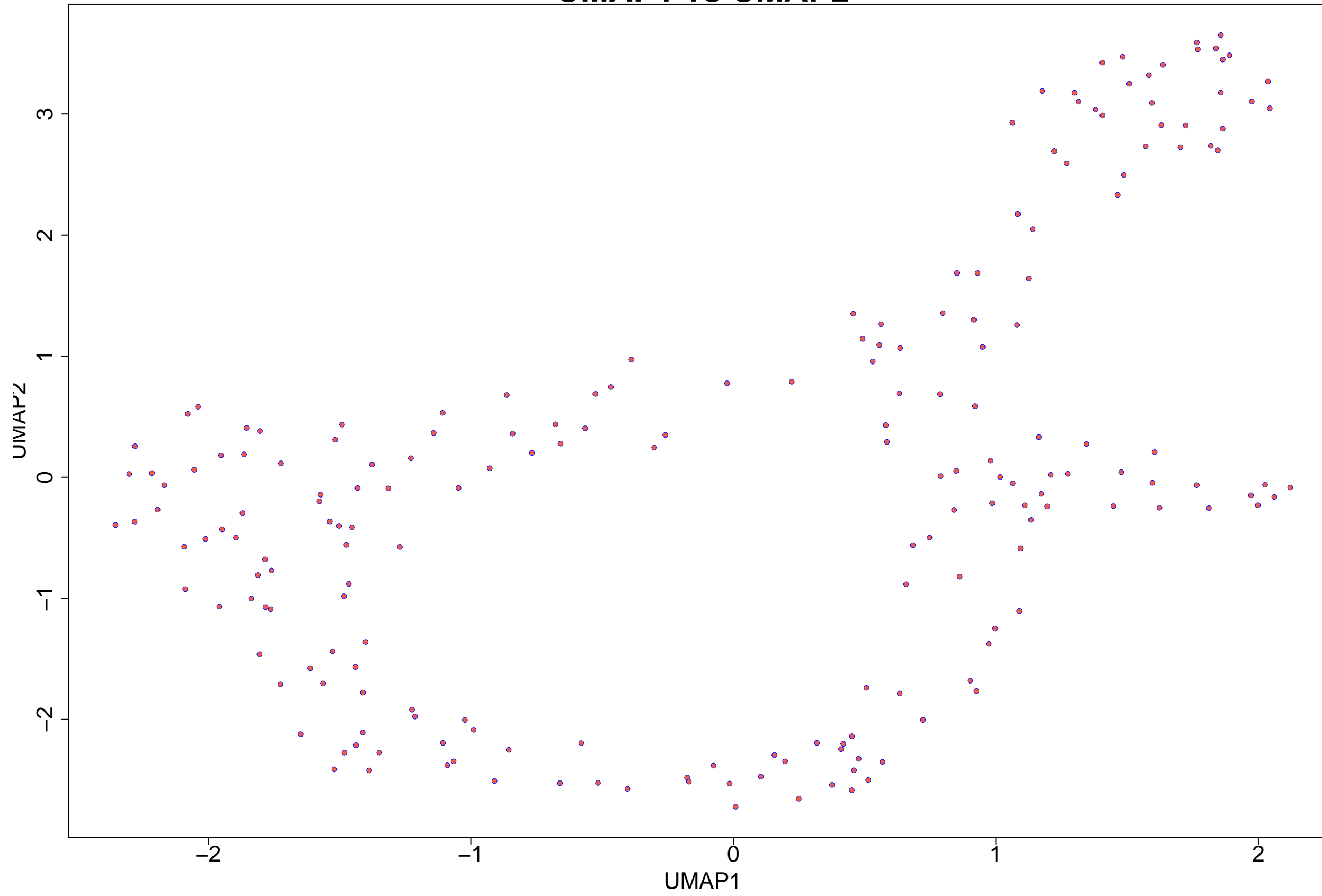
clustering: tSNE
perp = 5 | iter = 5000

tSNE Trajectory plot

clustering: tSNE
perp = 14 | iter = 5000

tSNE Trajectory plot

clustering: tSNE
perp = 23 | iter = 5000

tSNE Trajectory plot

clustering: tSNE
perp = 32 | iter = 5000

tSNE Trajectory plot

Posterior

Cell index
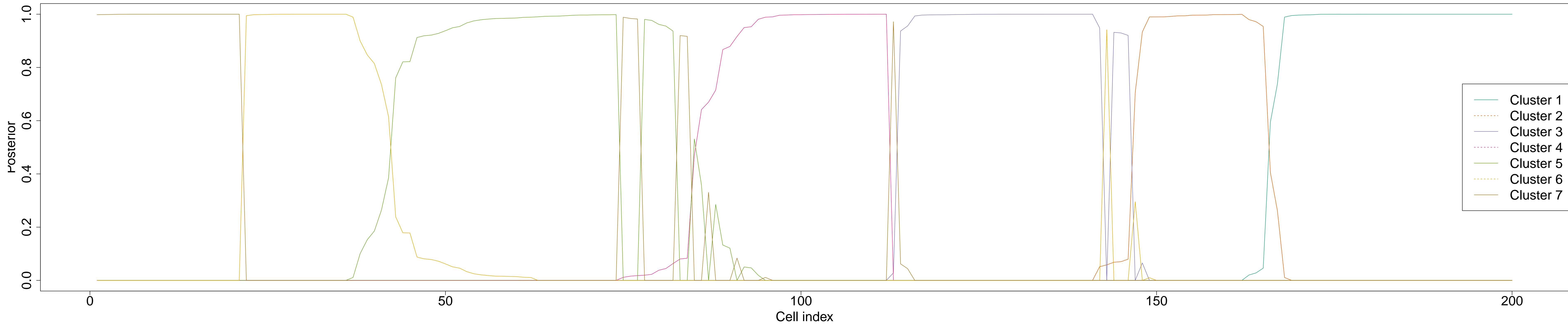
| Cluster 1 |
| Cluster 2 |
| Cluster 3 |
| Cluster 4 |
| Cluster 5 |
| Cluster 6 |
| Cluster 7 |
| Cluster 8 |

clustering: tSNE
perp = 41 | iter = 5000

tSNE Trajectory plot

Posterior

Cell index

Cluster 1
Cluster 2
Cluster 3
Cluster 4
Cluster 5
Cluster 6

clustering: tSNE
perp = 50 | iter = 5000
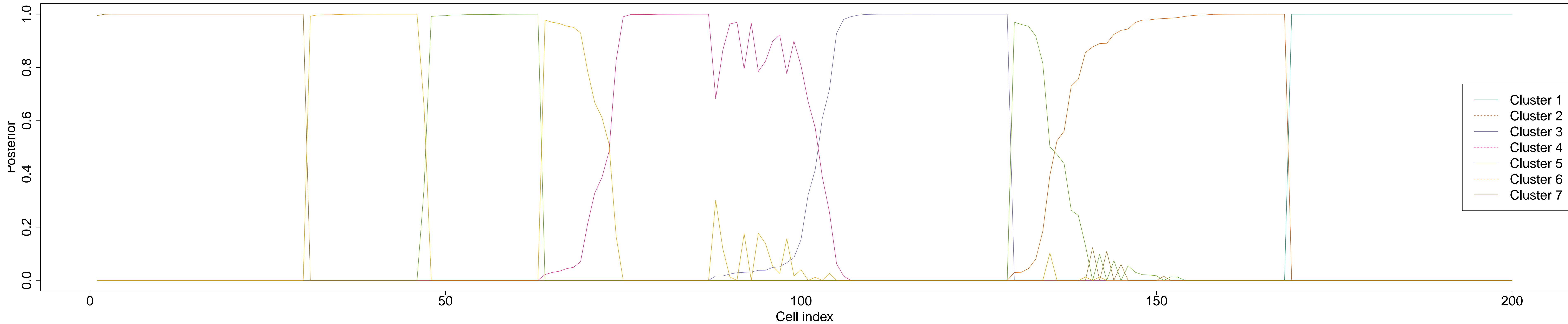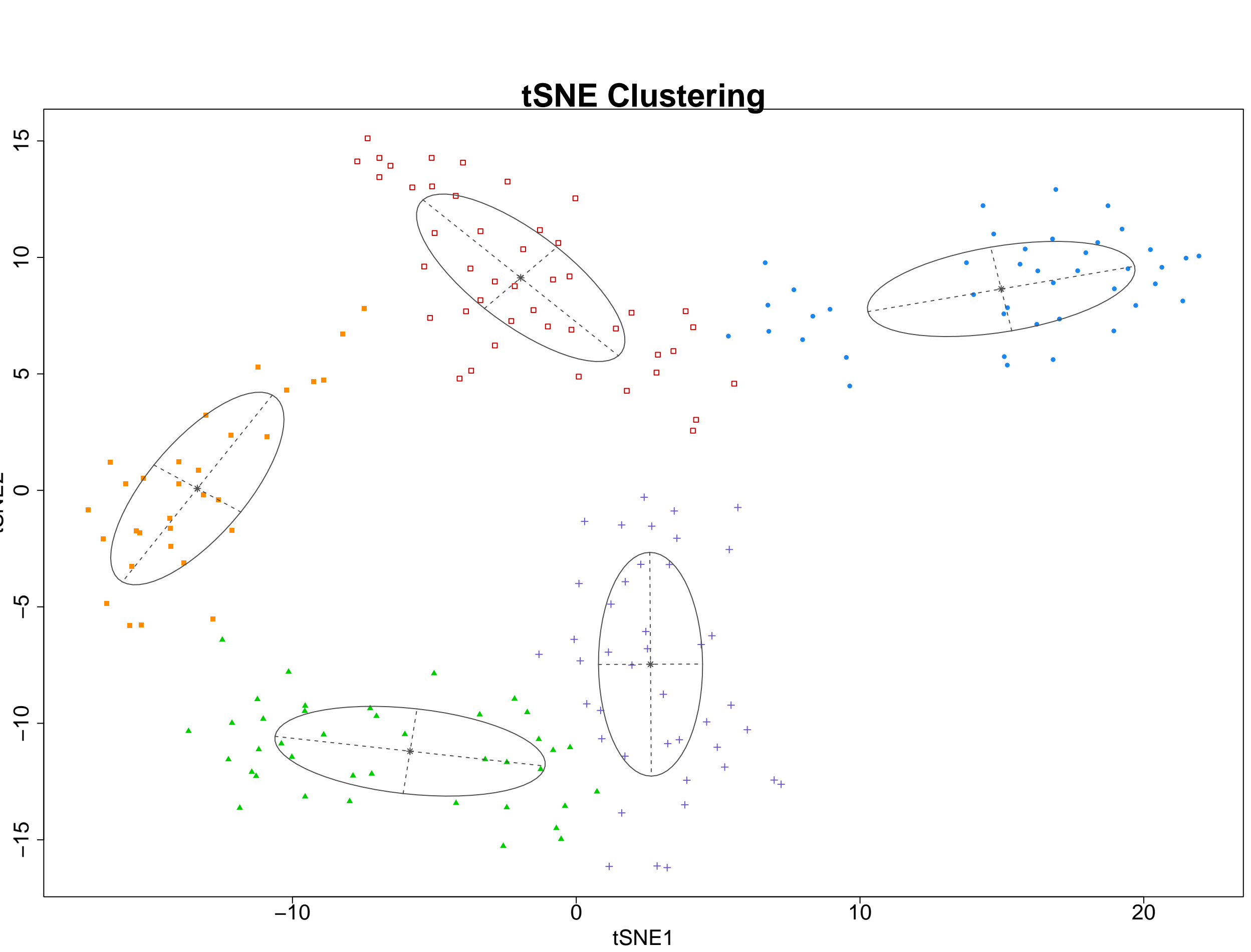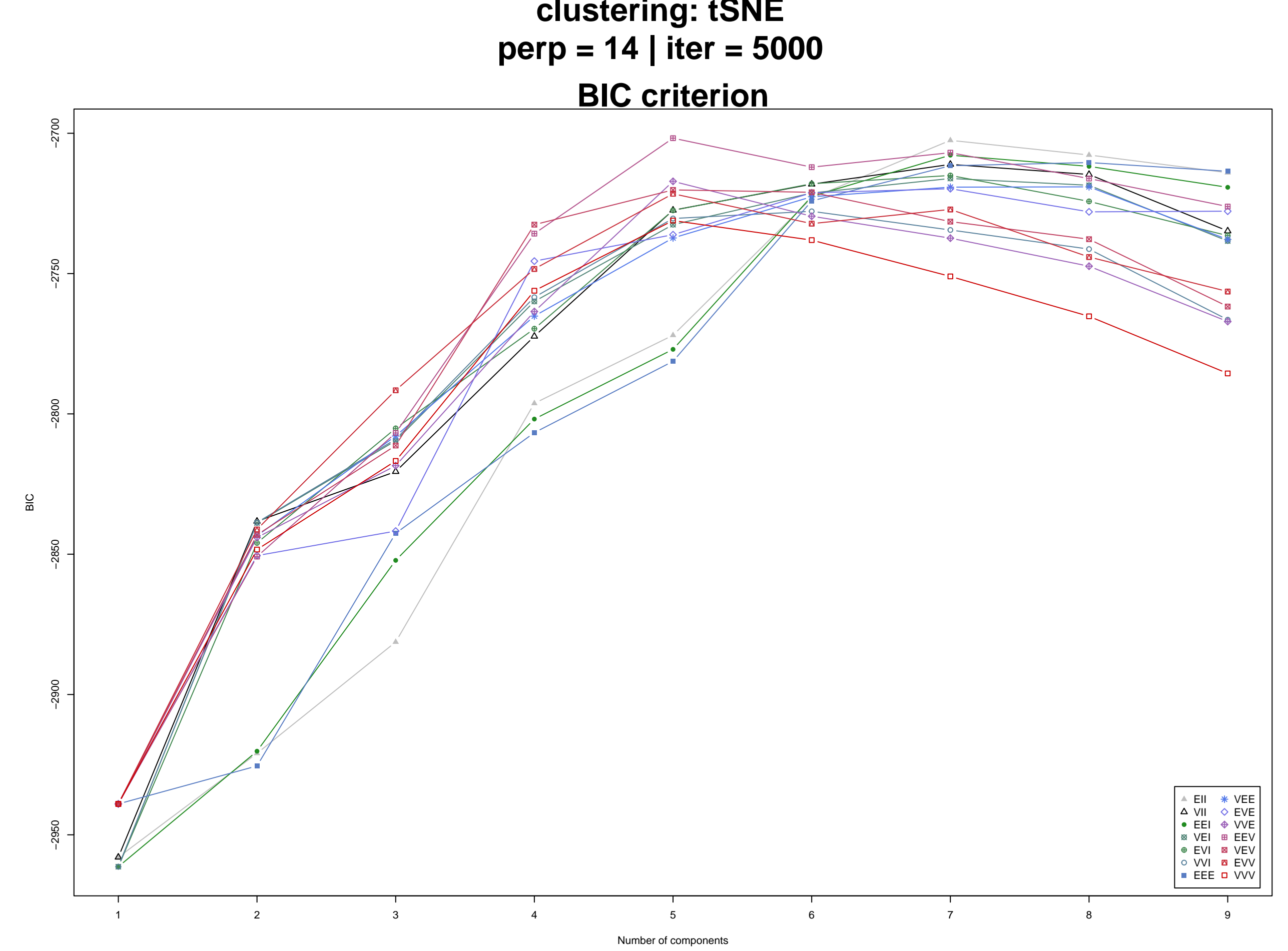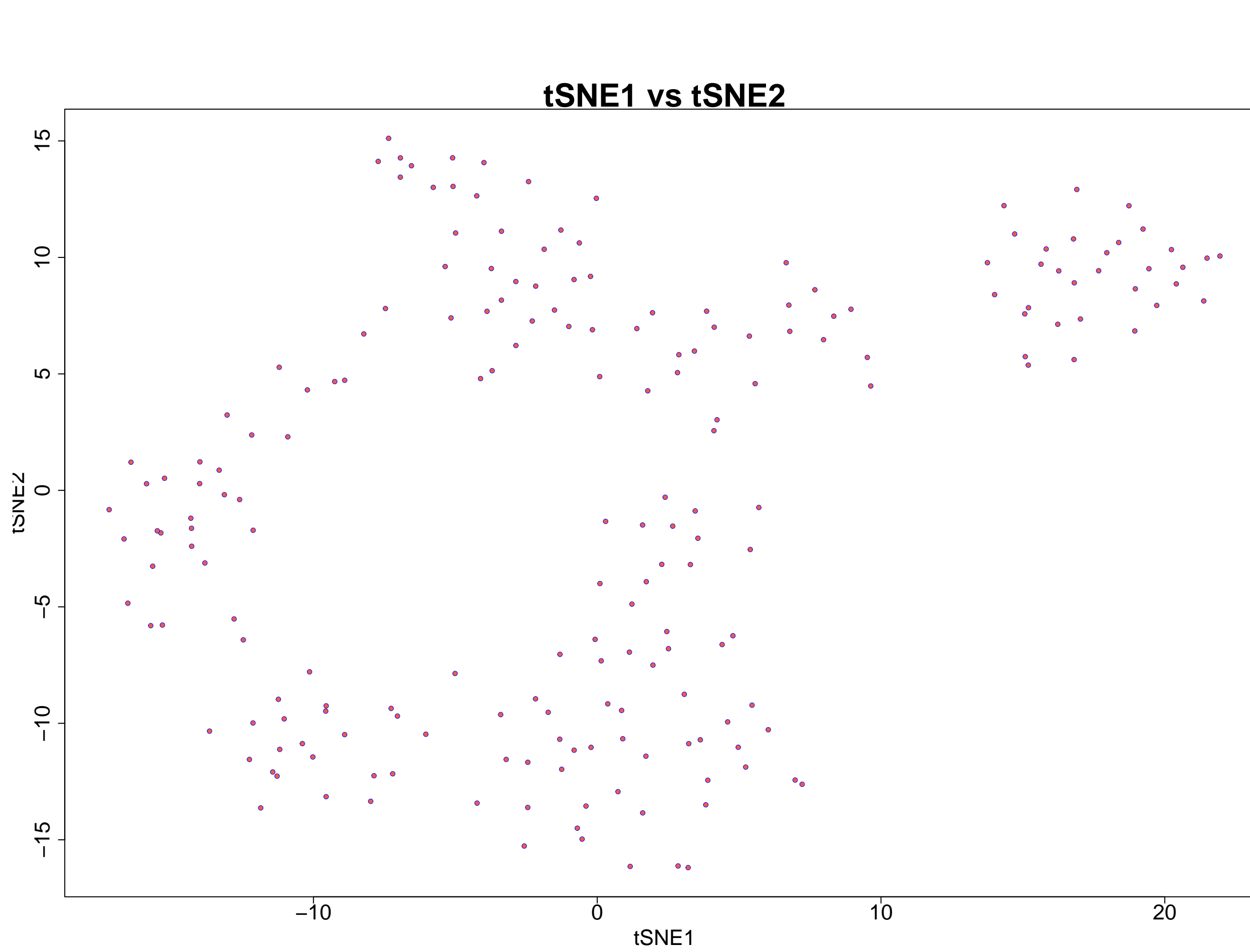
tSNE1 vs tSNE2

BIC criterion

tSNE Clustering

tSNE Trajectory plot
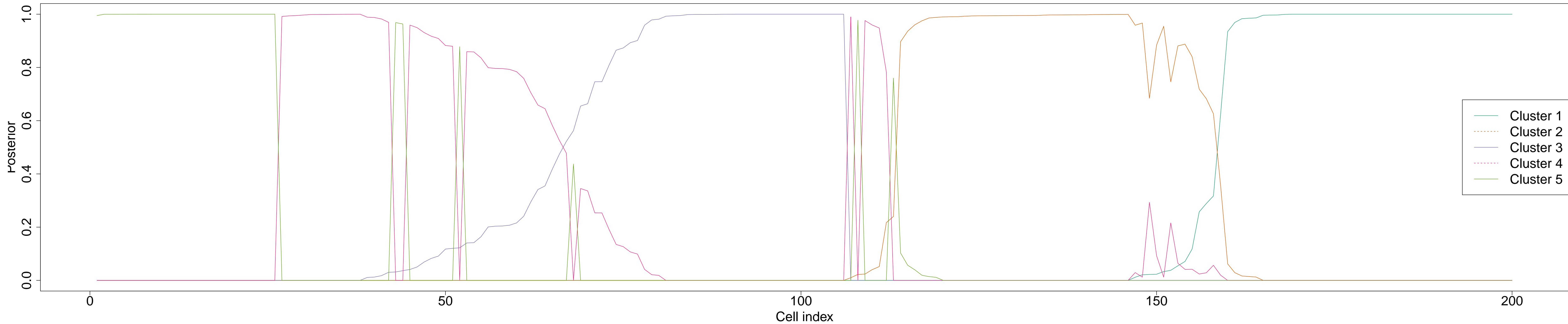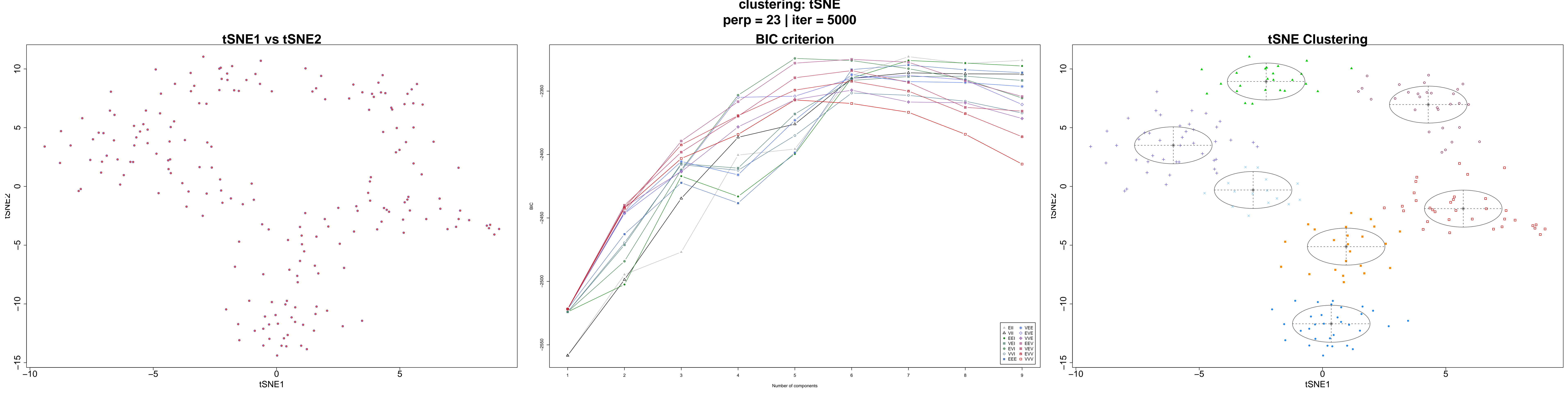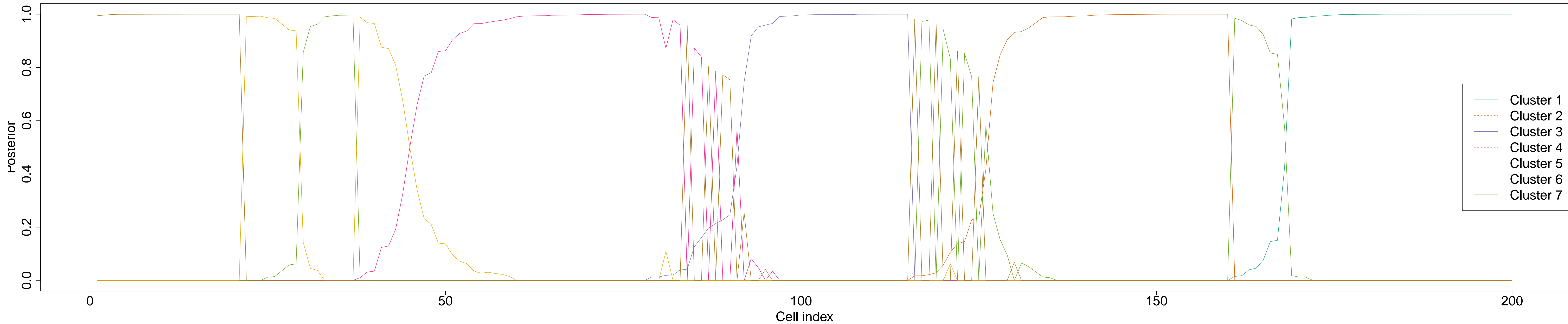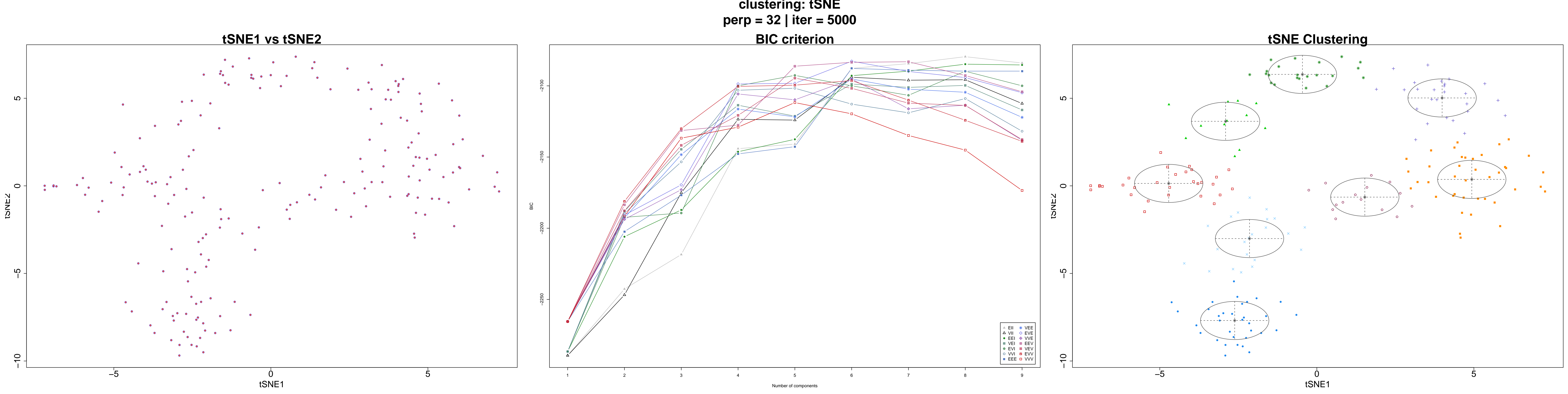
clustering: tSNE
perp = 50 | iter = 5000

tSNE1 vs tSNE2

BIC criterion

tSNE Clustering

tSNE Trajectory plot