

## ENST PhyloChip Technology Development

### Advanced DNA profiling

- ORD, UC-Berkely, OECA, USGS, Multi Regional, State / Tribal Collaboration
- Year 2 of 5-year project timeline
- Simultaneous analysis of 1.1M DNA sequences for 58k different bacteria IDs
- At present: Qualitative Presence / Absence determination
- Ultimate Goal: R7 will be the only other lab with this capability beside UC-Berkely nationwide

### Bacteria Source Tracking

- PhyloChip can differentiate between
  - Human sources
  - Dog / Cat
  - Bird
  - Horse
  - Pig
  - Ruminant (Cow, deer, elk, etc.)

### Harmful Algal Blooms

- HABs are actually bacterial blooms
- Toxins affect drinking & recreational waters
- Genetic information collected to help understand conditions favorable to HAB formation, toxin release, and control strategy development
- 800 Cyanobacteria IDs

### Next Steps:

- Continue method validation against reference methods
- Continue development of R7 capacity / capability
- Continue working with UC-Berkely to develop chip specific to environmental analysis
- Refine method to improve quantitative ability
- Move from contract to in-house capability for all EPA (Currently Regions 1,4,6,7,10)

