**Regional Water Quality**
**Emerging Contaminants Scenario – Opportunistic Pathogens and Indicator Bacteria**
Morteza Abbaszadegan, Andrew Buell and Peter Fox

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<th>PROJECT: ASU-02-2014</th>
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### Objectives
- To provide insight into the occurrence of conventional water quality parameters, algal-related contaminants and emergent contaminants such as *Mycobacterium, Legionella*, coliforms and Quagga mussel in source water in central Arizona.
- In addition, the levels of microbial metabolites such as MIB and Geosmin are also monitored.

### Approach
- Microbial pathogens and indicator analyses, and measuring # of survivors, change in shell length
- Analyses includes taste and odor compounds, DOC, UV254, TDN, conductivity, nitrate/nitrite

### Key Deliverables
- Monthly newsletters are distributed to over 70 recipients. The data is used by water suppliers to determine trends that impact both disinfection by-products and taste and odor compounds.

### Key Findings
- This project has contributed to:
  - Spatial and temporal variation in the occurrence of *Mycobacterium, Legionella* and mussels
  - Impact of temperature and dissolved oxygen on microbial quality of in Arizona lakes
    - In May the DOC concentrations in the Canals and WTPs were lower than the concentrations observed in April and groundwater pumping in the South Canal continued to lower DOC concentration
  - In the last few months microbial concentrations for coliforms continued to increase moderately
    - Moderate increase in total coliforms concentrations with several samples above 1,000 cfu/100ml.
    - *Mycobacterium* samples for April were lower than the previous months with no levels exceeding 10 cfu/100ml.
    - Geosmin concentrations in Saguaro Lake Epilimnion ranged from 378-445 ng/l while the hypolimnion of Saguaro Lake had 21 ng/l.

### Budget Requested
- $40,000

### Project Duration
- January 2009 – December 2018