



Challenging Nutrients Coalition

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- White House OSTP convened a group of agencies and organizations to seek innovative ways to address pollution caused by excess nitrogen and phosphorus in water



The Path: Visioneering

- OSTP hosted a meeting in Nov. 2013 with national leaders (academic, industry, non-profit, government)
- Goal: identify gaps where innovative strategies could have the most impact on reducing nutrient pollution
 - Affordable sensors
 - Smart fertilizers / nutrient-efficient crops
 - Watershed / community Challenges

The Path: Ideation Challenge

- 300 solvers engaged, 61 solutions submitted, 3 winners = \$5k each
 - Novel ideas, identifying trends, opinions, R&D directions
- **Tool for rapid watershed planning** (Aaron Ruesch and Theresa Nelson, Wisc. DNR) – now holding trainings across the state for their tool, EVAAL
- **Real-time management system for tile-drained water** (David White) – now working to implement a pilot with Charles City, Iowa
- **“Model at the farm, measure at the watershed”** real-time financial incentives to farmers (Jon Winsten)

The Path: Affordable Sensors Challenge

- Nutrient Sensor Challenge – launched Dec. 17 at AGU in keynote speech by NOAA Administrator Kathy Sullivan
 - Benefits to participants: no-cost sensor beta testing, team summit
 - Market stimulation – demonstrate the power, reach of the market

Measurement Criterion	Nitrate (\pm nitrite)	Orthophosphate	Weights
Accuracy	$\pm 5\%$ or 0.01 mg/L - N (at upper range) from reference value	$\pm 5\%$ or 0.005 mg/L - P (at upper range) from reference value	20%
Precision	$\pm 5\%$ or 0.01 mg/L - N (at upper range) from reference value	$\pm 5\%$ or 0.005 mg/L - P (at upper range) from reference value	15%
Range	0.005 - 60 mg/L - N	0.005 - 2 mg/L - P	15%
Deployment Length	3 months (at 15 minute sampling interval)		25%
Cost	Less than \$5,000 purchase cost Bill of materials for sensor and package		25%

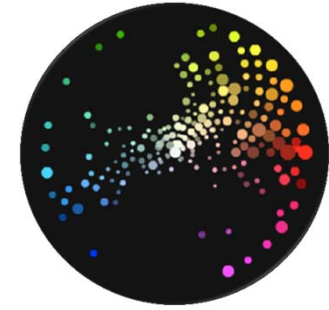
Coalition Activity Clusters



Water N & P Sensors



Nutrient Trading



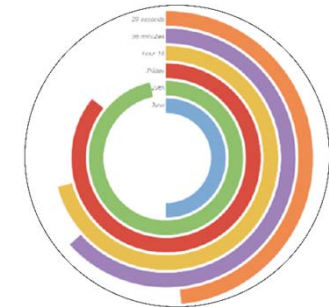
P Removal and Reuse



Soil N & P Sensors



Citizen Science & STEM



Data Viz & Comms