

Research

Summary of Funded Research Grants where John McCray is PI or co-PI

Total Research Dollars Awarded: **>\$15 M Total, ~\$ 10 M as PI**

| Project Descriptive Title | Sponsoring Agency | Total Budget | Start Date | End Date | PI or Co-PI |
|--|---------------------------------------|--------------|------------|----------|----------------------|
| Reinventing America's Urban Water Infrastructure: Managing Urban Stream Hyporheic Zones for Water Reclamation application | NSF, ERC (via Stanford) | \$ 5 MM | 8/1/11 | 7/31/16 | CSM PI |
| Water Quality Impacts of the Mountain Pine Beetle Infestation in the Rocky Mountain West: Heavy Metals and Disinfection Byproducts," \$140,162 | USGS-NIWR | \$140,162 | 9/1/11 | 10/31/14 | PI |
| Risk-Based Decision Making for Assessing Potential Impacts of Geologic CO2 Sequestration on Drinking-Water Sources | U.S. EPA | \$900,000 | 12/1/09 | 11/30/12 | PI |
| Training Graduate and Undergraduate Students in Simulation and Risk Assessment for Carbon Sequestration | U.S.DoE NETL | \$300,000 | 12/4/09 | 12/3/12 | PI |
| Geochemical Processes associated with porosity and permeability changes during CO2 Sequestration ⁷ | U.S. DoE | \$200,100 | 10/15/09 | 10/1/11 | PI |
| Impacts of mountain pine beetle on hydrology and water quality of Rocky Mountain watersheds. | U.S. EPA STAR Graduate Fellowship | \$150,000 | 8/1/11 | 7/31/14 | Grad Student Advisor |
| Role of Retention Time in the Environmental Buffer of Indirect Potable Reuse Projects | Water Reuse Foundation | \$300,000 | 10/1/11 | 9/31/13 | Co-PI |
| Modeling cyclodextrin-enhanced in situ chemical ozone oxidation | AFCEE via EnChem Eng. | \$36,000 | 8/1/11 | 7/31/12 | Co-PI |
| Evaluation of test kits for remote analysis of petroleum hydrocarbons. | Chevron | \$32,000 | 4/1/09 | 6/30/10 | PI |
| Nitrogen Reduction Strategies In Florida - Development of Modeling Tools for Prediction and Decision Making ⁶ | Florida Dept. of Health | \$800,000 | 02/01/09 | 10/31/12 | Co-PI |
| Expected performance for wastewater treatment in soil treatment units: nutrients, microbes, and emerging organics ¹ | Water Environment Research Foundation | \$1.0 M | 1/15/08 | 3/31/10 | PI |
| Dissolution in Bedrock Fractures and Fracture Networks during Ground-water Transport and Biochemical Remediation ² | U.S. DoD SERDP | \$440,000 | 6/1/06 | 12/31/10 | PI |

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| Site Demonstration of Polymer-amended In Situ Chemical Oxidation (PA-ISCO) for Enhanced Delivery & In Situ Destruction of Trichloroethylene Contaminant | U.S. DoD ESTCP via Clarkson University | \$359,000 | 3/1/09 | 8/31/11 | Co-PI |
| Graduate Program in Environmentally Sustainable Nuclear Power | U.S. DoEd | \$450,000 | 8/31/07 | 5/31/11 | Co-PI |
| Water quality and quantity assessment of the Upper Colorado River for potential oil-shale development. | U.S. DoE | \$1.1M | 10/1/08 | 9/30/11 | Co-PI |
| Evaluation of Evapotranspiration Covers for DoE Landfills | U.S. EPA via Cadmus Inc. | \$38,000 | 3/1/10 | 12/1/11 | PI |
| Watershed Modeling to Assess Hydrologic and Ecologic Impacts of Climate Change in the Upper Colorado River Basin | Los Alamos National Lab. | \$25,000 | 11/15/06 | 12/31/07 | co-PI |
| Watershed-scale models of wastewater pollutant transport in Oregon and Colorado ⁴ | Water Environment Research Foundation | \$280,000 | 2/1/06 | 1/31/08 | PI |
| Multi-Scale Experiments to Evaluate Mobility Control Methods for Enhancing the Sweep Efficiency of Injected Subsurface Remediation Amendments | U.S. DOD SERDP | \$575,405 | 5/1/06 | 12/31/08 | PI |
| Advice in Subsurface Remediation Design, Site Characterization, and Modeling | U.S. EPA, National Risk Mgmt Res Lab (NRMRL) | \$78,000 | 1/1/07 | 12/31/08 | PI |
| Animation of Interaction of Ground Water and Surface Water and Conjunctive Use of Ground Water ^F | NGWA | \$27,250 | 11/1/06 | 8/1/07 | co-PI |
| Remediation and Characterization services for EPA (STREAMS) | U.S. EPA | TBD | 1/1/06 | 1/1/11 | PI |
| Transport and treatment of emerging organic pollutants during riverbank filtration | City of Aurora CO | \$70,000 | 2/1/06 | 1/31/07 | Co-PI |
| Assessing the sustainability of the Clear Creek Watershed, CO | U.S. EPA | \$75,000 | 8/1/06 | 7/31/07 | Co-PI |
| Onsite Wastewater Source Characterization & Relevance to System Design & Performance | Water Environment Research Foundation | \$597,163 | 1/1/05 | 12/31/07 | Co-PI |
| Onsite Wastewater Source Characterization & Relevance to System Design & Performance | Water Environment Research Foundation | \$597,163 | 1/1/05 | 12/31/07 | Co-PI |
| Small Flows Research Program | Infiltrator Systems Inc. | \$ 1.0 M | 6/1/02 | 5/31/08 | Co-PI |

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| Evaluation of Potential Impact of ISDS in a Proposed Development in Todd Creek, Adams County CSM 4-48302 | Adams County | \$43,300 | 12/01/05 | 5/31/05 | PI |
| A Framework for Interdisciplinary Watershed Research: Scaling Issues | NSF-CUAHSI | \$6000 | 3/1/04 | 3/1/05 | Co-PI |
| Chemical-Enhanced DNAPL Remediation, Virginia Beach, VA ⁵ | DOD-ETSCP | \$201,000 | 4/1/2001 | 7/31/2004 | PI |
| Chemical-Enhanced DNAPL Remediation, Virginia Beach, VA ⁵ | DOD-ETSCP | \$710,000 | 4/1/2001 | 7/31/2004 | Co-PI |
| Evaluating Wastewater Pollutant Transport from Site to Watershed Scales, Blue River CO. | U.S. EPA-NDWRCDP WU-HT-02-27 | \$307,500 | 7/1/2000 | 3/31/2004 | Co-PI |
| Assessing Metal Pollution in Mining-Impacted Streams, Alaska | Comico via CSM Found. | \$10,000 | 9/1/2001 | 9/1/2004 | PI |
| Modeling Mounding Below Wastewater Infiltration Systems | U.S. EPA-NCWRCDP | \$75,000 | 2/15/2003 | 2/14/2004 | Co-PI |
| Modeling Fuel and Solvent Contamination | ExxonMobil via CSM Found. | \$45,000 | 10/1/2002 | 9/20/2006 | Co-PI |
| Modeling contaminant vapor transport at INEEL | INEEL Bechtel | \$5000 | 7/1/03 | 10/1/04 | PI |
| Computational Contaminant Transport – PhD Fellowships | U.S. DoEd, GAANN | \$333,100 | 8/15/2000 | 8/14/2003 | PI |
| Pesticide Vulnerability Model for Colorado | CDPHE | \$95,000 | 10/1/1999 | 6/30/2001 | PI |
| Location of Monitoring Wells for Colorado Pesticide Program | USDA via CSU | \$10,000 | 5/15/2001 | 6/30/2001 | PI |
| Modeling Unsaturated Flow in Soil-Based Wastewater Treatment Systems | Infiltrator Systems Inc. | \$54,000 | 5/1/1999 | 11/1/2001 | PI |
| Natural Attenuation of CAH Contaminants in US DOD Landfills | Parsons Eng. Sci. | \$12,000 | 8/10/2000 | 5/30/2001 | PI |
| Develop a civil engineering module for SYGN 201 | NSF - CSM Minigrant | \$5,000 | 6/1/1999 | 2/28/2000 | PI |
| Assessment of Emerging Contaminants in the Blue River | USGS-NIWR | \$106,800 | 9/1/2002 | 8/31/2004 | Co-PI |
| Fate of Non-point Source Pollution from Septic Tanks | CWWRI | \$19,000 | 3/1/2002 | 2/28/2003 | Co-PI |
| Use of Low Cost Data to Characterize Fractured Aquifers | USGS-NIWR | \$120,000 | 9/1/2001 | 8/31/2003 | Co-PI |
| Transport of Metal and Organic Contaminants in Landfills | Palm Beach SWA | \$30,000 | 9/1/2001 | 8/31/2004 | Co-PI |
| Multidimensional Hydrologic Experiments | NSF | \$150,000 | 9/1/1999 | 8/31/2002 | Co-PI |

Amounts shown are contracted to CSM with McCray as PI

Footnotes

1. Joint research project between CSM, University of Rhode Island, and University of Georgia.
2. Joint project between CSM, Shaw Environmental and Infrastructure, and University of Auburn
3. Joint project between CSM, East Tennessee State University, and CH2MHill
4. Joint project between CSM, University of Texas at San Antonio, USGS Oregon Water Science Center, Deschutes County Oregon.
5. Joint project between CSM, University of Rhode Island, University of Arizona, and Louisiana State University.
6. Total project is \$2M, but budget is uncertain due to State of Florida budget constraints.
7. Joint project between CSM (ESE, Geophysics, CE, Chemistry) and CU-Boulder. McCray portion of grant is ~ \$200K