Grants and Contracts

Research Grants

Ongoing

- **EFRI-RESIN** - Optimization of conjunctive water supply and reuse systems with distributed treatment for high-growth water-scarce regions
  - National Science Foundation,
  - $2M
  - 2008-2012
  - Principal Investigator with Robert Arnold, Guzin Bayraksan, Christopher Choi, Christopher Scott, and Stephen Davis (Malcolm Pirnie)

- **Coupled Natural and Human Systems - Strengthening Resilience of Arid Region Riparian Corridors: Ecohydrology and Decision-Making in the Sonora and San Pedro Watersheds**
  - NSF
  - $1.4M
  - 2010-2014
  - Investigator

- **Approaches to Maintain Consistently High Quality Recycled Water in Storage and Distribution Systems**
  - WateReuse Foundation (through collaborator HDR Consultants)
  - 2009-11
  - Principal Investigator
  - $114,000

International

- **Drinking water supply systems security using online contamination monitoring**
  - NATO
  - 2006-2008
  - NATO lead with A. Ostfeld, I. Schechter, and Y. Kashi (Technion) and D. Walt (UMass)
  - 271000 Euro

Federal

- **Center for Sustainability of Semi-Arid Hydrology of Riparian Areas (SAHRA)**
  - National Science Foundation,
  - Center funding approx. $14M
  - 2000-2010
  - Investigator (supports one graduate student and faculty summer salary)

- **Monitoring and prediction of water distribution/availability in semi-arid regions**
  - National Aeronautic and Space Agency
  - June 2001 – June 2004
  - Co-PI with S. Sorooshian (HWR) and others
  - $2.175 million

- **Measurement of hormonal activity and volume contribution of treated wastewater in water from wells along the Santa Cruz R.**
  - United States Geological Survey (Section 104),
• Jan. 2001- Dec. 2001
  Co-PI with Martin Karpiscak (Arid Lands), Robert Arnold (CHEE), and Charles Gerba (SWS)
  $14630

♦ Center for Sustainability of Semi-Arid Hydrology of Riparian Areas (SAHRA)
  National Science Foundation,
  Center funding approx. $14M
  2000-2010
  Investigator (supports one graduate student and faculty summer salary)

♦ Investigation of Soil Aquifer Treatment for Sustainable Water Reuse
  US Environmental Protection Agency through the National Center for Sustainable Water Supply
  (Arizona State University)
  1998-2003
  PI with Robert Arnold (CHEE), Randy Bassett (HWR), Wendell Ela (CHEE), Charles Gerba
  (SWES)
  Total support to NCSWS $2.9M, University of Arizona $780000 (Additional approx. $250K is
  under negotiation - spring 2002)

♦ Soil Aquifer Treatment for Sustainable Water Reuse
  US Environmental Protection Agency through the National Center for Sustainable Water Supply
  (Arizona State University) to the UA NSF Water Quality Center
  2001-2
  PI with Robert Arnold (CHEE), Wendell Ela (CHEE), Charles Gerba (SWES)
  $90000

♦ Decision support system for river system management under hydroclimatic variability
  United States Geologic Survey
  1998-2001
  PI with Juan Valdes (CEEM), Roy Koch (Portland State University) and Hugo Loacigia (UC-
  Santa Barbara)
  $147495

♦ Southwest Regional Earth Science Application Center (RESAC)
  National Aeronautic and Space Agency
  1999-2002
  Co-PI with Roger Bales (HWR) and others
  $1,500,000

♦ Use of remotely sensed data for urban hydrologic modeling
  National Aeronautic and Space Agency
  June 1997-June 1998
  PI with Soroosh Sorooshian (HWR) and George Ball (RNR) (worked in cooperation with the City
  of Scottsdale, AZ)
  $150000

♦ Decision support system for arid land wetland and riparian zones
  International Arid Lands Consortium
• May 1996-April 1998  
  PI with Thomas Maddock III (HWR)  
  $75000

Optimal Control of Pumping Facilities  
• United States Geological Survey, Section 105 program  
  September 1990-February 1993  
  PI  
  $69000

Operating and Locating Water Recharge-Reuse Facilities  
• US Geological Survey, Section 104 program  
  June 1991-May 1992  
  PI with Larry Mays, Arizona State University  
  $30000

Evaluation of a Real-Time Flood Forecasting Model  
• Intergovernment Personnel Agreement with the U.S. Corps of Engineers, Tulsa District,  
  June 1989-December 1989  
  PI  
  $14000

Water Distribution System Reliability-Optimization  
• U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi,  
  March 1988-April 1989  
  PI  
  $15000

State/Local  
• Phase II – USPP Decision Support System  
  City of Sierra Vista, AZ – Upper San Pedro Partnership  
  9/2003-9-04  
  $49500

Simulated Basin Model for Water Resource Planning and Education  
• State of Arizona, Technology and Research Initiative Fund  
  7/2003-6/2005  
  PI with Co-PIs - Paul Blowers (CHEE), Paul Brooks (HWR), Wendell Ela (CHEE), Steven Stewart (SAHRA/HWR), Paul Wilson (AREC), Farhang Shadman (ERC), Gary Woodard (SAHRA)

Estrogenic Activity in Reclaimed Water and Stormwater  
• State of Arizona, Technology and Research Initiative Fund  
  Co-PI with PI- Robert Arnold (CHEE) and David Quanrud (ALS)

• Monitoring collection systems to detect sanitary sewer overflows
- Pima County Wastewater Management and GLHN consulting engineers
- January 2001-June 2002
- PI
- $59500

- Investigation of Soil-Aquifer Treatment for Sustainable Water Reuse
  - American Water Works Association Research Foundation, Phoenix Area Organization of Local Governments and Los Angeles County Sanitation District
  - October 1996 – June 2000
  - PI with Robert Arnold (CHEE), Randy Bassett (HWR), and Charles Gerba (SWES)
  - $328000

- Water quality monitoring Sweetwater wetlands/infiltration
  - City of Tucson
  - June 1996-June 2000
  - Co-PI with Robert Arnold (CHEE) and Randy Bassett (HWR)
  - $199000

- Operating Recharge Systems to Avoid Mounding
  - Arizona Department of Water Resources
  - December 1995 - December 1997
  - PI
  - $65300

- Unified Approach to Modeling Water Distribution Systems
  - Vice President for Research, University of Arizona
  - June 1996-May 1997
  - PI
  - $5000

- Fuzzy Calibration of Water Distribution Systems
  - Vice President for Research, University of Arizona
  - June 1991-May 1992
  - PI
  - $5000

- Optimal Pump Station Operation of Water Distribution Systems
  - University Center for Water Research, State of Oklahoma
  - July 1989-June 1990
  - PI
  - $20000

- Monitoring and Operation of Water Resources Systems
  - University Center for Water Research, State of Oklahoma
  - August 1988-June 1989
  - PI
  - $20250
Teaching grants

- Engineering Connections Environments: Developing Learner Centered Interfaces to Technical Content Modules
  - ABOR
  - $49000

- Improvements in Undergraduate engineering education through curriculum and course development feedback processes
  - General Electric Foundation
  - Co-PI with Jeffrey Goldberg (SIE) and John Ramberg (SIE)
  - $450000

- Development of an Undergraduate Computer Aided Design Classroom/laboratory
  - Instructional Computing Grant Program, Provost Office, University of Arizona
  - January 1996
  - Award made to the Dept. of CEEM
  - $35000

- A new outlook on Freshman Engineering education: ENGR 102
  - University of Arizona Vice President for Research, Award for outstanding education course/approach
  - Prepared proposal for Team 102 (oversight committee for course)
  - $75000 (for further course improvements award made to the College of Engineering and Mines)