LUIS A. GARCIA, Ph.D.

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Professor of Civil and Environmental Engineering with over 30 years of experience in water resources, remote sensing, and decision-support systems. Research focuses on integrating data-driven modeling and satellite-based approaches to address challenges in water management and climate resilience.

Author of 60 refereed journal publications; PI/Co-PI on 95+ funded projects totaling $12M+; advisor to 34 graduate students; recipient of multiple ASCE Best Paper Awards.

EDUCATION

University of Colorado, Boulder, Colorado

Ph.D. Civil Engineering, Spring 1990

Texas A&M University, College Station, Texas

M.S. Civil Engineering, Fall 1985
B.S. Civil Engineering, Fall 1983

PROFESSIONAL EXPERIENCE

2018 - Present	Professor, Department of Civil and Environmental Engineering, University of Vermont
2013 – 2018	Dean, College of Engineering and Mathematical Sciences, University of Vermont
2013 – 2018	Barrett Foundation Professor, Department of Civil and Environmental Engineering, University of Vermont
2014 – 2016	Interim Director of the School of Engineering, College of Engineering and Mathematical Sciences, University of Vermont
2005 – 2013	Acting, Interim & Head, Department of Civil and Environmental Engineering, Colorado State University
2005 – 2013	Professor, Department of Civil and Environmental Engineering, Colorado State University
1992 – 2013	Director, Integrated Decision Support Group (IDS), The Water Center, Colorado State University
1998 – 2005	Associate Professor, Department of Civil Engineering, Colorado State University
2000 – 2004	Associate Director, Colorado Agricultural Experiment Station, Colorado State University
2000 – 2002	Program Leader, Bioresource and Agricultural Engineering Degree, Colorado State University
1991 – 1998	Assistant Professor, Department of Chemical and Bioresource Engineering and Civil Engineering, Colorado State University
1990 – 1991	Associate Director, Center for Advanced Decision Support for Water and Environmental Systems (CADSWES), University of Colorado, Boulder
1988 – 1990	Assistant Director, Center for Advanced Decision Support for Water and Environmental Systems (CADSWES), University of Colorado, Boulder

LEADERSHIP APPROACH

My leadership approach focuses on aligning people, resources, and strategy to achieve measurable outcomes in research, education, and institutional growth. I emphasize accountability, data-informed decision-making, and the creation of collaborative environments that enable faculty and students to succeed at a high level. Across roles, I have prioritized scalable program development, research growth, and inclusive excellence.

CURRENT RESEARCH AND SCHOLARLY ACTIVITY

My current research focuses on remote sensing, data-driven modeling, and applied water resource management, with active collaborations in the United States and internationally.

Refereed Publications

Recent Publications:

1. **Garcia, L. A.** (2026) "*Sprinkler-Irrigated Corn Fields Show Higher Realization of a Reference-Field Evapotranspiration Benchmark: A Six-Season Satellite Analysis of Colorado's South Platte Corridor."* Sustainability 18(20), 10703.
2. **Garcia, L. A.** (2026) "*Evaluating Regional Corn Crop Coefficients with Satellite Evapotranspiration."* Water 18(18), 2318.
3. Mahmoud, M. R., **Garcia, L. A.**, A. Abd Elhamid, and M. Aboelkhear. (2026) "*Environmental Coherence Framework for Multi-Sensor Remote Sensing: Water Hyacinth Assessment in Lake Tana."* Scientific Reports 16(1), 46912.

Under Review:

1. A. Dadkhah, D. M. Rizzo, P. R. Adler, A. Ahmadi, P. J. Clemins, M. W. Myers, G. F. Pinder, S. Swami, A. Zia, and **Garcia, L. A.** "A Data-driven Framework for Spatiotemporal Improvement of Actual Evapotranspiration Estimates Using Remote Sensing and In-Situ Flux Tower Data." Computers and Electronics in Agriculture. Under review (Manuscript COMPAG-D-26-02215).

2. Mahmoud, M. R., **Garcia, L. A.**, A. Wagdy, and M. A. M. Elkordy. "A Convergent Satellite and Machine Learning Framework for Discharge Estimation in Ungauged Wetland Basins." Applied Water Science. Under review (Manuscript AWSC-D-26-00384).

3. **Garcia, L. A.**, Elhaddad, A., Altenhofen, J. "A Reference Corn Field Framework for Developing Regional Crop Coefficients from Satellite-Derived Evapotranspiration." Irrigation Science. Under Review.

4. Mahmoud, M. R. and Garcia, L. A. "Tracking climate adaptation below the national scale: evidence from Egypt's water, coastal, and urban sectors, 2010–2025." Climatic Change, Under Review.

Current Research Activities

Principal Investigator

- *Research and Education in Sustainable, Equitable, and Climate-Resilient Civil Infrastructure Systems* (2021–2026)
  U.S. Department of Education, GAANN Program — **$762,312**
  Currently supporting four Ph.D. students at the University of Vermont

Collaborative Research – Colorado (South Platte River Basin)

In collaboration with Colorado State University faculty: Drs. Timothy Gates, Jose Chavez, Allan Andales, and Ryan Bailey

- *South Platte River Basin Salinity Characterization Study*
  Funded by Colorado Water Conservation Board
- *Assessing, Forecasting, and Mitigating Salt Pollution in Semi-Arid Irrigated Regions*
  Funded by USDA AFRI

International Collaboration – Egypt (Nile Basin)

Collaboration with the Water Management Research Institute, National Water Research Center:

Research focus:

- Climate adaptation in water and coastal systems
- Remote sensing of evapotranspiration (ET)
- Crop coefficient (Kc) development
- Water use efficiency assessment using remote sensing and meteorological data

ACADEMIC CONTRIBUTIONS

- Advisor or Co-Advisor to 15 Ph.D. and 19 M.S. graduates
- Member of 48 graduate student committees
- 60 refereed journal publications, including multiple ASCE Best Paper Awards
- 5 book chapters and 49 conference papers (proceedings)
- 100+ professional presentations, including invited and international lectures
- Technical reports and outreach publications supporting applied research and extension
- Active participation in professional societies

TEACHING AND ADVISING

Courses taught at the University of Vermont and Colorado State University include:

- Introduction to Engineering (multiple disciplinary versions: civil, environmental, agricultural, bioresource, and chemical)
- Geomatics
- Systems Engineering and Optimization
- GIS and GPS Applications
- Senior Design

AWARDS

National/International Academic Awards:

- 2026 Paper selected as one of the winners of **the Arab Water Council Award for Creativity and Innovation, 4th Edition** (2026), under the theme *"Pioneering Resilient and Climate-Adaptive Water Management Systems, with a Special Focus on Arab Countries*"
- 2016 **Best Research Paper Award** for the Journal of Irrigation and Drainage, ASCE
- 2015 **Best Research Paper Award** for the Journal of Irrigation and Drainage, ASCE
- 2015 **Best Honorable Mention Paper Award** for the Journal of Irrigation and Drainage, ASCE
- 2014 **Best Research Paper Award** for the Journal of Irrigation and Drainage, ASCE
- 2008 **Best Honorable Mention Paper Award** for the Journal of Irrigation and Drainage, ASCE
- 1999 **Best Research Paper Award** for the Journal of Irrigation and Drainage, ASCE
- 1996 **Best Research Paper Award** for the Journal of Irrigation and Drainage, ASCE

University Academic Awards:

- 2013 Gold Key Award, Civil Engineering Professor of the Year, Colorado State University Chapter of Chi Epsilon
- 2002 Faculty Award for Excellence in Service—Department of Civil Engineering, Colorado State University
- 2000-01 Outstanding Faculty Member presented by the Student Chapter of the American Society of Agricultural Engineers (ASAE), Colorado State University
- 1999 Award for Outstanding Contributions to Interdisciplinary Water Education, Research and Outreach, presented by The Water Center, Colorado State University
- 1998-99 ASAE Academic Advisor of the Year—Colorado State University
- 1997-98 ASAE Outstanding Faculty Member—Colorado State University
- 1996 Favorite Faculty Member, Allison Hall, Colorado State University
- 1995 Dean's Council Award for Bioresource Engineering at Colorado State University
- 1992 and 1993 Diversity Career Enhancement Award at Colorado State University
- 1990 Christopher Fellowship at the University of Colorado at Boulder

PROFESSIONAL SERVICE AND MEMBERSHIPS

- Member, American Society of Civil Engineers (ASCE); elected to the Department Heads Council Executive Committee (2008–2011)
- Member, U.S. Committee on Irrigation and Drainage (USCID); elected to Board of Directors (2011–2014) and served as Secretary (Vice President equivalent)
- Reviewer for multiple journals and contributor to ASCE technical committees
- Planning committee member for three national meetings; Co-Chair, 2013 USCID National Meeting (Denver)
- External reviewer for federal programs
- Service on university, college, and departmental committees, including multiple search committees
- Chair, Women and Minorities in Engineering Advocacy Board, Colorado State University (4 years); member (2 additional years)

LEADERSHIP AND ADMINISTRATIVE ACCOMPLISHMENTS

Dean, College of Engineering and Mathematical Sciences — University of Vermont (2013–2018)

Enrollment Growth and Student Success:

- Increased undergraduate enrollment from 1,006 to 1,417 (**+41%**) while improving student quality (SAT: 1227 → 1302)
- Increased graduate enrollment from 149 to 236 (**+58%**)
- Improved selectivity (acceptance rate reduced from 79% to 70%)

Diversity and Inclusion:

- Doubled number of female undergraduate students (188 → 378, **+101%**)
- Increased percentage of female first-year students from 17.5% to 31.3% (**+79%**)
- Increased underrepresented minority enrollment (103 → 166, **+61%**)
- More than doubled international student population (71 → 174, **+145%**)
- Implemented multiple initiatives focused on inclusive excellence and community building

Academic Program Development:

- Created **2 undergraduate programs** (Biomedical Engineering, Data Science)
- Created **4 graduate programs** (including Complex Systems and Engineering Management)
- Expanded Accelerated Master's Programs (AMPs) from 4 to 14 (54 in development pipeline)
- Implemented a college-wide strategic plan

- Introduced a faculty variable workload model

Research Growth and Faculty Development:

- Increased research awards from **$7.98M to $10.15M** (**+27%**)
- Expanded faculty from 85 to 107 (**+26%**)
- Increased number of assistant professors (12 → 26, **+117%**)
- Increased female faculty representation (25 → 35, **+40%**)
- Created new leadership and support roles (Associate Dean, student services, pre-award support)

Fundraising and Infrastructure:

- Increased annual fundraising from **$922K to $3.03M** (**+229%**)
- Secured additional **$5M major gift**
- Led development of a **$104M STEM complex initiative**
- Directed over **$13M in laboratory and teaching infrastructure upgrades**
- Expanded maker spaces, labs, and student club facilities

Student Experience and External Engagement:

- Expanded student support services (career readiness, graduate coordination, international support)
- Enhanced student organizations and competition teams (e.g., AERO, ASCE)
- Improved marketing, communications, and branding efforts
- Established cross-college seed funding initiatives (Medicine, Education)
- Led development of cybersecurity initiative and Center for Computer Security and Privacy

Department Head, Civil and Environmental Engineering — Colorado State University (2007–2013)

Enrollment and Diversity Growth:

- Increased undergraduate enrollment from 323 to 485 (**+50%**)
- Increased graduate enrollment from 186 to 234 (**+26%**)
- Increased female student enrollment from 126 to 221 (**+75%**)
- More than doubled minority student enrollment (30 → 65, **+117%**)
- Increased Hispanic student enrollment (14 → 33, **+136%**)
- Increased international student enrollment (79 → 115, **+46%**)
- Expanded online MS enrollment from 5 to 59 (**10× growth**)

Academic and Program Development:

- Renamed department to Civil and Environmental Engineering
- Developed new academic concentrations and expanded curriculum
- Strengthened undergraduate and graduate programs

Faculty and Institutional Development:

- Hired **16 new faculty members**
- Negotiated multiple faculty retention and transition packages
- Led successful ABET accreditation efforts

Fundraising and Student Support:

- Secured over **$4M in gifts and donations**
- Created **15 new scholarships**

Associate Director, Colorado Agricultural Experiment Station (2000–2004)

- Oversaw a research portfolio of **120+ projects across 20 departments and 6 colleges**
- Reviewed and evaluated project outcomes and impact

- Prepared annual reports to USDA
- Led and coordinated campus-wide research initiatives

Director, Integrated Decision Support Group — Colorado State University (1992–2013)

- Founded and led an interdisciplinary research group focused on decision-support systems
- Served as PI or Co-PI on **95+ funded projects totaling over $12M**
- Developed applied tools used by agencies and practitioners. Developed decision-support tools (South Platte Mapping and Analysis Program, SPMAP www.ids.colostate.edu/projects.php/) adopted under the South Platte three-state agreement (CO, WY, NE). Between 2005 and 2010, these tools supported the management of over 75% of wells in the basin (3,500+ wells) and remain in use today.
- Established a national support center for the **PAVER system**, supporting **100+ users**
- Delivered training programs across the United States

PUBLICATIONS

Refereed Papers Published:

1. **Garcia, L.A.** Sprinkler-irrigated corn fields show higher realization of a reference-field evapotranspiration benchmark: a six-season satellite analysis of Colorado's South Platte corridor. *Sustainability* **18**(20), 10703 (2026). https://doi.org/10.3390/su182010703
2. **Garcia, L.A.** Evaluating regional corn crop coefficients with satellite evapotranspiration. *Water* **18**(18), 2318 (2026). https://doi.org/10.3390/w18182318
3. Mahmoud, M.R., **Garcia, L.A.**, Abd Elhamid, A. Aboelkhear, M. Environmental coherence framework for multi-sensor remote sensing: water hyacinth assessment in Lake Tana. *Sci Rep* **16**, 13885 (2026). https://doi.org/10.1038/s41598-026-46912-0
4. Mahmoud, M.R., Fahmy, H, and **Garcia, L.A.** (2022) "Potential Impact of Failure of the Grand Ethiopian Renaissance Dam on Downstream Countries", Journal of Flood Risk Management JFRM-0131-20. https://doi.org/10.1111/jfr3.12793
5. Huber, D.P., Butters, G.L., and **Garcia, L.A.** (2021) "Unreconciled effects of salinity on draining and wetting functions in unsaturated soils", Vadose Zone Journal is VZJ-2021-02-0013-ORA. https://doi.org/10.1002/vzj2.20169
6. **Garcia, L.A.** and Eldeiry A. (2020), "Evaluating Linear and Nonlinear Regression Models in Mapping Soil Salinity", International Journal of Research in Agriculture and Forestry 7(3), 2020, 21-34 ISSN 2394-5907 (Print) and ISSN 2394-5915 http://ijraf.org/papers/v7-i3/4.pdf
7. Kipka, H., Green, T.R., David, O., **Garcia, L.A.**, Ascough II, J.C., and Arabi, M. (2016) "Development of the Land-use and Agricultural Management Practice web-Service (LAMPS) for generating crop rotations in space and time", Soil & Tillage Research 155 (2016) 233–249.
8. Chalghaf, I., Elhaddad, A., **Garcia, L.A**., Lecina, S. (2015) "Remote Sensing and Specialized Database Programs for Irrigation Monitoring and Evaluation at a Regional Scale", ASCE Journal Irrigation Drainage Engineering, 141(11)10.1061/(ASCE)IR.1943-4774.0000896, 04015016.
9. Elhaddad, A., and **Garcia, L.A.** (2014), "Using a Surface Energy Balance Model (ReSET-Raster) to Estimate Seasonal Crop Water Use for Large Agricultural Areas: Case Study of the Palo Verde Irrigation District", ASCE Journal of Irrigation and Drainage. 140(10) 05014006. **(Best Case Study Award — ASCE Irrigation and Drainage Division 2016).**
10. **Garcia, L.A.**, Elhaddad, A., Altenhofen, J., and Hattendorf, M. (2013), "Developing Corn Regional Crop Coefficients Using A Satellite-Based Energy Balance Model (ReSET) in the South Platte River Basin of Colorado", ASCE Journal of Irrigation and Drainage. 139(10) 821-832. **(Honorable Mention Paper—ASCE Irrigation and Drainage Division 2015).**

11. Alzraiee, A., **Garcia, L.A.**, and Gates, T.K. (2013), "Modeling Subsurface Heterogeneity of Irrigation and Drainage Systems: I. Model Development and Verification", ASCE Journal of Irrigation and Drainage. 139(10) 797-808. **(Best Research Paper Award—ASCE Irrigation and Drainage Division 2015).**
12. Alzraiee, A., Gates, T.K., and **Garcia, L.A.** (2013), "Modeling Subsurface Heterogeneity of Irrigation and Drainage Systems: II. Multivariate Stochastic Analysis of Root Zone Hydrosalinity and Crop Yield", ASCE Journal of Irrigation and Drainage. 139(10) 809-820.
13. Alzraiee, A., and **Garcia, L.A.** (2013), "Global Sensitivity Analysis of Variably Saturated Flow and Transport Parameters and Its Implication for Crop Yield and Root Zone Hydrosalinity", ASCE Journal of Irrigation and Drainage. 139(11) 889-897.
14. Alzraiee, A., Bau, D., and **Garcia, L.A.**, (2013) "Multi-Objective Design of Aquifer Monitoring Networks for Optimal Spatial Prediction and Geostatistical Parameter Estimation", Water Resources Research. 49(6) 3670-3684.
15. Islam, A., Ahuja, L.R., **Garcia, L.A.**, Ma, L. and Anapalli, S. (2013) "Modeling the Effect of Elevated CO_2 and Climate Change on Reference Evapotranspiration in the Semi-Arid Great Plains", Transactions of ASABE. 55(6):2135-2146.
16. Eldeiry, A., **Garcia, L.A.** (2012), "Evaluating the performance of ordinary kriging in mapping soil salinity", ASCE Journal of Irrigation and Drainage. 138(12) 1046-1059.
17. DeJonge, K.C., Ascough II, J.C., Andales, A.A., Hansen, N.C., **Garcia, L.A.**, Arabi, N. (2012) "Improving evapotranspiration simulations in the CERES-Maize model under limited irrigation" Agricultural Water Management – 115(92-103).
18. Alzraiee, A. and **Garcia, L.A.** (2012) "Using Cluster Analysis of Hydraulic Conductivity Realizations to Reduce Computational Time for Monte Carlo Simulations". ASCE Journal of Irrigation and Drainage - 138(5) 424-436.
19. Islam, A., Ahuja, L.R., **Garcia, L.A.**, Ma, L., Anapalli, S. and Trout, T. (2012), "Modeling the Impacts of Climate Change on Irrigated Corn Production in the Central Great Plains", Agricultural Water Management 110(94-108).
20. Yuanwen, L. and **Garcia, L.A.** (2012) "Assessing Impact of Irrigation Return Flow on River Salinity for Colorado's Arkansas Valley". ASCE Journal of Irrigation and Drainage – 138(5) 406-415.
21. Chavez, J.L., Gowda P.H., Howell, T.A., **Garcia, L.A.**, Copeland, K.S., and Neale, C.M.U. (2012), "ET Mapping with High Resolution Airborne Remote Sensing Data in an Advective Semi-Arid Environment". ASCE Journal of Irrigation and Drainage – 138(5) 416-423.
22. Eldeiry, A. and **Garcia, L.A.** (2012), "Using Disjunctive Kriging as a Quantitative Approach to Manage Soil Salinity and Crop Yield". ASCE Journal of Irrigation and Drainage – 138(3) 211-224. **(Best Research Paper Award—ASCE Irrigation and Drainage Division 2014).**
23. Elhaddad, A., and **Garcia, L.A.** (2011), "ReSET-Raster a surface energy balance model for calculating evapotranspiration using a raster approach". ASCE Journal of Irrigation and Drainage – 137(4) 203-210.
24. Eldeiry, A., and **Garcia, L.A.** (2011), "Using indicator kriging technique for soil salinity and yield management". ASCE Journal of Irrigation and Drainage – 137(2) 82-93.
25. Elhaddad, A., **Garcia, L.A.** and Chavez J.L. (2011), "Using a Surface Energy Balance Model to Calculate Spatially Distributed Actual Evapotranspiration". ASCE Journal of Irrigation and Drainage – 137(1) 17-26.
26. Eldeiry, A., and **Garcia, L.A.** (2010), "Comparison of ordinary kriging, regression kriging, and cokriging techniques to estimate soil salinity using LANDSAT images". ASCE Journal of Irrigation and Drainage – 136(6) 355-364.
27. Matter, M., **Garcia, L.**, Fontane, Bledsoe, B., (2010) "Characterizing Hydroclimatic Variability in Tributaries of the Upper Colorado River Basin -WY1911-2001." Journal of Hydrology (380): 260-276.

28. Adiku, S.G.K., Dunn, G.H., Ahuja, L.R., Gunter, S., Bradford, J., **Garcia, L.**, and Andales, A.A. (2010) Simulation of Sandsage-Bluestem Forage Growth Under Varying Stocking Rates. Rangeland Ecology & Management: September 2010, 63(5): 546-552.
29. Khan J.M, Razzaq A., Khattak M.K. and **Garcia L.** (2009) "Effect of different pre-sowing water application depths on wheat yield under spate irrigation in the Southern part of the North West Frontier Province of Pakistan". *Agricultural Water Management* – (96): 1467-1474.
30. Oad, R., **Garcia, L.**, Kinzli, K.D., Patterson, D., and Shafike, N. (2009) "Decision Support Systems for Efficient Irrigation in the Middle Rio Grande Valley", ASCE Journal of Irrigation and Drainage. 135(2): 177-185.
31. Eldeiry, A., **Garcia, L.A.**, Reich, R. (2008) "Soil Salinity Sampling Strategy in Alfalfa Fields Using Spatial Modeling Techniques, Remote Sensing, and Field Data". *ASCE Journal of Irrigation and Drainage* – 134(6) 768-777.
32. Lin, Y., and **Garcia, L.A.** (2008) "Development of a Hydro-Salinity Simulation Model for Colorado's Arkansas Valley", *ASCE Journal of Irrigation and Drainage* – 134(6) 757-767.
33. Elhaddad, A., **Garcia, L.A.** (2008) "Surface Energy Balance-Based Model for Estimating Evapotranspiration Taking Into Account Spatial Variability in Weather", *ASCE Journal of Irrigation and Drainage* – 134(6) 681-689.
34. Eldeiry, A. and **Garcia, L.A.** (2008) "Detecting Soil Salinity in Alfalfa Fields using Spatial Modeling and Remote Sensing", *Soil Science Society of America Journal* - 72(1):201-211.
35. Shrier, C.J., Fontane, D.G., and **Garcia, L.A.** (2008) "A Spatial Knowledge-Based Decision Analysis System for Pond Site Assessment", ASCE *Journal of Water Resources Planning and Management* – 134(1) 14-23.
36. Elgaali, E., **Garcia, L.A** and Ojima, D. (2007) "High Resolution Modeling of the Regional Impacts of Climate Change on Irrigation Water Demand", *Climatic Change,* 84(3-4) 441-461.
37. Elgaali, E. and **Garcia, L.A.** (2007) "Neural Network Modeling the Impacts of Climate Change on Water Supplies", ASCE Journal of Water Resources Planning and Management, 133(3) 230-243.
38. **Garcia, L.A.**, Foged, N., and Cardon, G. (2006) "A GIS-Based Model to Estimate Relative Reduction in Crop Yield Due to Salinity and Waterlogging: Philosophy and Development." ASCE Journal of Irrigation and Drainage Engineering, 132(6) 553-563.
39. Elgaali, E., **Garcia, L.A** and Ojima, D. (2006) "Sensitivity of Irrigation Water Balance to Climate Change in the Great Plains of Colorado", Transactions of ASAE, 49(5) – 1315-1350.
40. **Garcia, L.A.**, Shigidi, A. (2006) "Using Neural Networks for Parameter Estimation in Ground Water." Journal of Hydrology, 318 (1-4): 215-231.
41. Eldeiry, A., **Garcia, L.A.**, El-Zaher, A.S. and Kiwan, M.E. (2005) "Furrow Irrigation System Design for Clay Soils in Arid Regions." ASAE Applied Engineering in Agriculture, 21(3): 411-420.
42. Shigidi A. and **Garcia, L.A.** (2003) "Parameter Estimation in Groundwater Hydrology Using ANN." Journal of Computing in Civil Engineering, 17(4): 281-289.
43. Eldaw, A., Salas, J.D. and **Garcia, L.A.** (2003) "Long Range Forecasting of the Nile River Flows Using Climatic Forcing." Journal of Applied Meteorology, 42: 890-904.
44. Ribbens, R. and **Garcia, L.A.** (2002) "Drain Spacing Design Taking into Account Mass Balance." Transactions of the ASAE, 45(4): 965–971.
45. Faidi, H., **Garcia, L.A.**, and Albertson, M. (2002) "Development of a Model for Simulation of Solute Transport in a Stream-Aquifer System." Environmental Modeling and Assessment, 7(3) 191-206.
46. Mahmoud, M. R. and **Garcia, L.A.** (2000) "Comparison of Different Multicriteria Evaluation Methods for the Red Bluff Diversion Dam." Environmental Modeling & Software, 15(2000) 47: 1-478.

47. Ojima, D., **Garcia, L.**, Elgaali, E., Miller, K., Kittel, T., and Lackett, J. (2000) "Potential Climate Change Impacts on Water Resources in the Great Plains." Journal of the American Water Resources Association, 35(6)1443-1454.
48. Lahkim, M. and **Garcia, L.A.** (1999) "Stochastic Modeling of Exposure and Risk in a Contaminated Heterogeneous Aquifer. 1: Monte Carlo Uncertainty Analysis." Journal of Environmental Engineering Science:16(5): 315-328.
49. Lahkim, M, **Garcia, L.A.**, and Nuckols, J.R. (1999) "Stochastic Modeling of Exposure and Risk in a Contaminated Heterogeneous Aquifer. 2: Application of Latin Hypercube Sampling." Journal of Environmental Engineering Science: 16(5).
50. Lahkim, M., **Garcia, L.A**. and Nuckols, J.R. (1999) "Spatial and Temporal Properties of Environmental Exposure Assessments Related to Ground Water Contamination." Journal of Environmental Modeling and Assessment 4(2-3) 165-178.
51. Hasmi, M. and **Garcia, L.A.** (1998) "Spatial and Temporal Errors in Estimating Regional Evapotranspiration." ASCE Journal of Irrigation and Drainage 124(2):108-114. **(Best Research Paper Award—ASCE Irrigation and Drainage Division 1999).**
52. **Garcia L.A**., and Armbruster, M. (1997) "A Spatially Based Decision Support System for Evaluation of Wildlife Habitat." Journal of Ecological Modeling 102(2) 287-300.
53. Manguerra, H.B. and **Garcia, L.A.** (1997) "Modeling Flow and Transport in Drainage Areas with Shallow Water Table." ASCE Journal of Irrigation and Drainage, 123(3):185-193.
54. Manguerra, H.B. and **Garcia, L.A.** (1997) "Field Strategy for Agricultural Drainage and Water Quality Management." ASCE Journal of Irrigation and Drainage, 123(1):37-44.
55. Manguerra, H.B. and **Garcia, L.A.** (1996) "Drainage and No-Drainage Cycles for Salinity Management in Irrigated Areas." Transactions of the ASAE, 39(6):2039-2049.
56. Mejia-Navarro, M. and **Garcia, L.A.** (1996) "Natural Hazard and Risk Assessment Using Decision Support Systems, Application, Glenwood Springs, Colorado." Journal of Environmental and Engineering Geosciences, Vol II(3):299-324.
57. Nevo, A., **Garcia L.A.** (1996) "Spatial Optimization of Wildlife Habitat." Journal of Ecological Modeling, 91(1/3) 271-281.
58. Nevo, A., **Garcia L.A.** (1996) "Spatial Optimization of Wildlife Habitat -- Model Formulation." Transactions of the ASAE, 39(3):1189-1196.
59. Hashmi, M., **Garcia, L.A.,** and Fontane, D. (1995) "Spatial Estimation of Regional Crop Evapotranspiration." Transactions of the ASAE, 38(5):1345-1351.
60. Vadas, R. G., **Garcia, L. A**, and Labadie, J.W. (1995) "A Methodology for Water Quantity and Quality Assessment for Wetland Development." Water Science and Technology, 31(8):293-300.
61. **Garcia, L.A**., Manguerra, H.B., and Gates, T.K. (1995) "Irrigation and Drainage Design and Management Model: I. Development." ASCE Journal of Irrigation and Drainage, 121(1):71-82. **(Best Research Paper Award—ASCE Irrigation and Drainage Division 1996)**
62. Manguerra, H.B., and **Garcia, L.A.** (1995) "Irrigation and Drainage Design and Management Model: II. Validation and Application." ASCE Journal of Irrigation and Drainage, 121(1):83-94.
63. **Garcia, L.A**., Strzepek, K.M, Podmore, T.H. (1994) "Design of Agricultural Drainage with Adaptive Irrigation Management." ASCE Journal of Irrigation and Drainage, 120(1):176-194.

Books / Book Chapters:

1. Adiku, S.K.G., Ahuja, L.R., Dunn, G.H., Derner, J.D., Andales, A.A., **Garcia, L.**, and Bartling, P.N.S. (2011) "Parameterization of the GPFARM-Range Model for Simulating Rangeland Productivity" p. 209-228 advances in agricultural systems modeling 2. Methods of Introducing System Models into Agricultural Research Laj R. Ahuja and Liwang Ma (ed.)

2. Elhaddad, A. and **Garcia, L**. (2009) Remote Sensing Application in Agriculture. VDM Verlag Dr. Muller Aktiengesellschaft & Co. Germany.
3. Eldeiry, A. and **Garcia, L**. (2008) Spatial Modeling of Soil Salinity Using Remote Sensing, GIS and Field Data. VDM Verlag Dr. Muller Aktiengesellschaft & Co. Germany.
4. National Research Council Report (2007) "Committee on the Scientific Bases of Colorado River Basin Water Management."
5. Labadie, J. and **Garcia, L.** (2003) "Has Modeling of Water Resources on the Basis of Climate and Hydrology Reached Its Full Potential?", Chapter 8, Water and Climate in the Western United States, William M. Lewis (editor), University Press of Colorado, Boulder, CO.

Conference Presentations with Proceedings:

1. Eldeiry, A. and **Garcia, L.** (2014) "Using Geospatial Techniques and Remote Sensing to Reduce the Number of Soil Salinity Samples". Presented and published in the 34th Annual Hydrology Days, Fort Collins, CO, March 24-26.
2. Chalghaf, I., Elhaddad, A., Casterad, M.A., Martínez-Cob, A., **Garcia, L.A.**, Lecina, S., (2013) "Análisis del Uso del Agua en el Sistema de Riegos del Alto Aragón Combinando el Sistema Ador y Teledetección". Presented and published in the 31st Spanish National Congress on Irrigation, Albacete, Spain, June 2013.
3. Formetta, G., Amico, M.D., Rigon, R., David, O., **Garcia, L.A.**, Capparelli, G., Versace, P., (2013) "GEOtop/OMS3 - Model Integration and Case Study". Presented and published in the 33th Annual Hydrology Days, Fort Collins, CO, March 25-27, 2013.
4. Kipka, H., David, O., Lyon, J., **Garcia, L.A.**, Green, T.R., Ascough, J.C., Rojas, K., (2013) "A Web-Service Tool to Generate Crop Rotation Management Input Files for Spatially Distributed Agroecosystem Models". Presented and published in the 33th Annual Hydrology Days, Fort Collins, CO, March 25-27, 2013.
5. **Garcia, L.A.** and Elhaddad, A., (2012) "Estimating Seasonal Crop Water Use for Alfalfa Using a Surface Energy Balance Model (ReSET-Raster)". Presented and published in the proceedings of the USCID Conference on "Managing Irrigation Systems in Today's Environment", November 13–16, Reno, NV.
6. Eldeiry, A., and **Garcia, L.** (2012) "Management of Soil Salinity and Crop Yield Using Conditional Probability Maps". Presented and published in the 32th Annual Hydrology Days, Fort Collins, CO, March 21-23, 2012.
7. Eldeiry, A., and **Garcia, L.** (2011) "Using Deterministic and Geostatistical Techniques to Estimate Soil Salinity at The Sub-Basin and Field Scale". Presented and published in the 31th Annual Hydrology Days, Fort Collins, CO, March 21-23, 2011.
8. Alzraiee, A., and **Garcia, L.** (2011) "Clustering of Hydraulic Conductivity Realizations to Reduce Computational Time Analysis for Monte Carlo Simulations". Presented and published in the 31th Annual Hydrology Days, Fort Collins, CO, March 21-23, 2011.
9. Chávez, J., Straw, D., **Garcia, L.**, Ley, T., Andales, A., Simmons, L. and Bartolo, M., (2010) "Mapping ET In Southeastern Colorado Using A Surface Aerodynamic Temperature Model". Presented and published in the proceedings of the USCID Conference on "Meeting Irrigation Demands in a Water-Challenged Environment - SCADA and Technology: Tools to Improve Production", September 28 – October 1, Fort Collins, CO.
10. Elhaddad, A., **Garcia, L.**, Altenhofen, J., Hattendorf, M., (2010) "Developing Corn Regional Crop Coefficients Using A Satellite–Based Energy Balance Model (ReSET) In The South Platte River Area of Colorado". Presented and published in the proceedings of the USCID Conference on "Meeting Irrigation Demands in a Water-Challenged Environment — SCADA and Technology: Tools to Improve Production", September 28 – October 1, Fort Collins, CO.

11. Eldeiry, A. and **Garcia, L.**, (2010), "Using a Geo-statistical Approach for Soil Salinity and Yield Management". Presented and published in the 30th Annual Hydrology Days, Fort Collins, CO, March 22-24, 2010.
12. **Garcia, L.**, and Patterson, D., (2009) "Model for Calculating Consumptive Use (CSUID)". Presented and published in the proceedings of the USCID Conference on Irrigation and Drainage for Food, Energy and the Environment, November 3-6, Salt Lake City, Utah.
13. Elhaddad, A., **Garcia, L.** and Chavez, J., (2009) "Using a Surface Energy Balance Model to Calculate Spatially Distributed Actual ET". Presented and published in the proceedings of the USCID Conference on Irrigation and Drainage for Food, Energy and the Environment, November 3-6, Salt Lake City, Utah.
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15. Kinzli, K.D., Oad, R., **Garcia, L.**, Kinzli, K.D., Patterson, D., Shafike, N. and Gensler, D. (2009) "Improving Irrigation System Performance in the Middle Rio Grande through Scheduled Water Delivery". Presented and published in the proceedings of the USCID Conference on Irrigation and Drainage for Food, Energy and the Environment, November 3-6, Salt Lake City, Utah.
16. Eldeiry A., and **Garcia L.** (2009) "Comparison of Regression Kriging and Co-Kriging Techniques to Estimate Soil Salinity Using Landsat Images". Presented at the 29th Annual Hydrology Days, Fort Collins, CO, March 25-27, 2009.
17. Eldeiry, A. and **Garcia, L.A.** (2008) "Soil Salinity Samples and Variograms: Case Study in the Lower Arkansas Basin". Presented and published in the proceedings of the 28th Annual Hydrology Days, Fort Collins, CO, March 26-28.
18. Eldeiry, A. and **Garcia, L.A.** (2007) "Assessing Soil Salinity Using a Geostatistical Approach". Presented and published in the proceedings of the 27th Annual Hydrology Days, Fort Collins, CO, March 19-21.
19. Noh, J. and **Garcia, L.A.** (2007) "Hydrologic System for Simulating Reference Flows in the Geum River Basin' s TMDL Practices". Presented and published in the proceedings of the 27th Annual Hydrology Days, Fort Collins, CO, March 19-21.
20. Elhaddad, A. and **Garcia, L.A.** (2006) "Detecting Soil Salinity Levels in Agricultural Lands Using Satellite Imagery". Presented and published in the proceedings of the American Society for Photogrammetry and Remote Sensing annual conference, Reno, NV, May 1-5.
21. Elgaali, E., Elhaddad, A. and **Garcia, L.A.** (2006) "Estimating Lawn Irrigation Requirements Using Aerial Photography and GIS". Presented and published in the proceedings of the American Water Resources Association specialty conference on Geographic Information Systems and Water Resources IV, Houston, TX, May 8-10.
22. Elhaddad, A. and **Garcia, L.A.** (2006) "Using Remote Sensing and GIS to Detect Soil Salinity". Presented and published in the proceedings of the American Water Resources Association specialty conference on Geographic Information Systems and Water Resources IV, Houston, TX, May 8-10.
23. Eldeiry, A. and **Garcia, L.A.** (2006) "Potential Contributions of Residuals for Better Prediction of Soil Salinity from Remote Sensing Data". Presented and published in the proceedings of the 26th Annual Hydrology Days, Fort Collins, CO, March 20-22.
24. Elgaali, E. and **Garcia, L.A.** (2006) "Effects of Climate Change on the Distribution of the Arkansas River Flow". Published in the proceedings of the 26th Annual Hydrology Days, Fort Collins, CO, March 20-22.

25. Eldeiry, A., and **Garcia, L.A.** (2005) "Comparison of Three Regression Models to Assess Soil Salinity from Remote Sensing Data". Presented and published in the proceedings of the International Salinity Forum: Managing Saline Soils and Water: Science, Technology, and Social Issues, Riverside, CA, April 25-28.
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29. Elgaali, E. and **Garcia, L.A.** (2005) "Sensitivity of Irrigation Water Supply to Climate Change in the Great Plains Region of Colorado". Presented and published in the proceedings of the 24th Annual Hydrology Days, Fort Collins, CO, March 7-9.
30. Matter, M, **Garcia, L.A.** and Fontane, D. (2005) "Influence of Hydroclimate on Characteristics of Hydrograph Evolution in Snowmelt-Dominated River System". Presented and published in the proceedings of the 25th Annual Hydrology Days, Fort Collins, CO, March 7-9.
31. Eldeiry, A., **Garcia, L.A.**, and Reich, R. (2005) "Estimating Soil Salinity from Remote Sensing Data in Corn Fields". Presented and published in the proceedings of the 25th Annual Hydrology Days, Fort Collins, CO, March 7-9.
32. **Garcia, L.A.** and Elhaddad A. (2005) "Use of Energy Balance Approach to Compute ET in the Arkansas Valley in Colorado". Presented at the Reclamation ET Workshop: State of the Art Review of ET Remote Sensing Science and Technology", Fort Collins, CO, February 8-10. Pages 210-215.
33. **Garcia, L.A.** (2004) "User Centered Approach to Develop Decision Support Systems - Estimating Pumping and Augmentation Flow Needs in the South Platte Basin in Colorado". Presented and published in the proceedings of the USCID Conference on Water Rights and Related Water Supply Issues October 13-16, Salt Lake City, Utah.
34. David, O., Viger, R. J., Schneider, I.A. and **Garcia, L.A.** (2004) "Geospatial Interoperability in Modeling Frameworks – The 'GEOLEM' Approach", International Environmental Modeling and Software Society (IEMSS) 2004 Conference – Complexity and Integrated Resource Management, Osnabruck, Germany, June 14-17, Vol. 1, p. 420-427.
35. Elgaali, E. and **Garcia, L.A.** (2004) "Neural Network Modeling of Climate Change Impacts on Irrigation Water Supplies in Arkansas River Basin". Presented and published in the proceedings of the 24th Annual Hydrology Days, Fort Collins, CO, March 10-12.
36. Eldeiry, A. and **Garcia, L.A.** (2004) "Spatial Modeling using Remote Sensing, GIS, and Field Data to Assess Crop Yield and Soil Salinity". Presented and published in the proceedings of the 24th Annual Hydrology Days, Fort Collins, CO, March 10-12.
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39. **Garcia, L.A.** and Foged, N. (2002) "Field Scale Monitoring and Modeling of Salinity and Waterlogging in the Lower Arkansas River Basin of Colorado". Published in the proceedings of the Central Plains Irrigation Short Course and Exposition, February 5-6, Lamar, CO.
40. **Garcia, L.A.**, Patterson, D., Bender, M. and Kinerson, R. (1998) "Development of Water Quality Modeling Framework". Presented and published in the proceedings of the First Federal Interagency Hydrologic Modeling Conference, April 19-13, Las Vegas, Nevada.
41. Engelmann, C., and **Garcia, L.A.** (1998) "Comparison of ET estimates calculated from the Penman-Monteith and the FAO-24 Blaney-Criddle equations using GIS". Presented and published in the proceedings of the American Geophysical Union. 18th Annual "Hydrology Days", March 30-April 3, 1998, Fort Collins, CO.
42. Mahmoud, M., and **Garcia, L.A.** (1995) "Multi-criteria Decision Support System Implementation and Application". Presented and published in the proceedings of the First International Conference on Multiple Objective Decision Support Systems for Land, Water and Environmental Management: Concepts, Approaches, and Applications, July 23-28, 1995, University of Hawaii, Honolulu, Hawaii.
43. Vadas, R. G., **Garcia, L. A**., and Labadie, J.W. (1994) "A Methodology for Water Quantity and Quality Assessment for Wetland Development". Presented and published in the proceedings of the Living with Water—International Conference on Integrated Water Resources Management, Amsterdam, the Netherlands, September 1994.
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45. **Garcia, L.A.**, Armbruster, M., Buehler, K., and Williams, G. (1993) "A Spatially Based Decision Support System for Evaluation of Wildlife Habitat". Presented at the Application of Advanced Information Technologies for Management of Natural Resources, sponsored by ASAE, Spokane, Washington, June 1993.
46. **Garcia L.A.**, Gates T.K., Jensen M.E., Podmore T.H. and Durnford D.H. (1993) "Management Support System for Conjunctive Irrigation and Drainage". Presented and published in the proceedings of the 15th Congress on Irrigation and Drainage, sponsored by ICID-CIID, The Hague, The Netherlands, September 4-5, 1993.
47. Strzepek, K.M. and **Garcia, L.A.** (1987) "Optimal Design of Tile Drains Under Uncertainty in Soil Properties". Presented and published in the proceedings of the Fifth National Drainage Symposium, Chicago, Illinois, Dec. 1987.
48. Strzepek, K.M., **Garcia, L.A.** and Christopher J. (1985) "A CAD Approach to Training Engineers on Analysis of Uncertainty and Risk in Drainage Design." Reviewed Paper, USCID Tenth Technical Conference on Irrigation Drainage and Flood Control, Reno, Nov. 1985.
49. Strzepek, K.M., **Garcia, L.A.** and Sullivan G. (1985) "A Stochastic Dynamic Programming Model for Reservoir Operation Using Lotus 1-2-3." ASCE Computer Applications in Water Resources, Buffalo, New York, June 1985.

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1. Chalghaf I., Elhaddad A., **Garcia L.A.**, Lecina S. (2014) "Generar información regional detallada para entender mejor el regadío", Agricultura 970, 142-146.
2. **Garcia, L.A.**, and Patterson, D. (2011) "A User-Centered Approach to Development of Decision Support Systems for Estimating Pumping and Augmentation Needs in Colorado's South Platte Basin." 28(1): 11-14 January/February 2011, Colorado Water Institute, Ft. Collins, CO.

3. Oad, R., and **Garcia, L.A.** (2011) "Decision Support Systems for Efficient Irrigation Water Management in the Middle Rio Grande." 28(1): 8-10 January/February 2011, Colorado Water Institute, Ft. Collins, CO.
4. **Garcia, L.A.,** Gates T.K., Hemphill, R. (2009) "Irrigation Monitoring in the Lower Arkansas River Valley of Colorado." 26 (3): 8-9 May/June 2009, Colorado Water Institute, Ft. Collins, CO.
5. Gates T.K., Labadie J.W., and **Garcia, L.A.** (2009) "Discovering Favorable Prospects for the Lower Arkansas River Basin Using Data-Supported Decision Tools." 26 (3): 2-4 May/June 2009, Colorado Water Institute, Ft. Collins, CO.
6. **Garcia, L.A.** (2007) "South Consensus Development for Augmentation Accounting" Published in Colorado Water, 24 (5): 20-22 October/November 2007, Colorado Water Resources Research Institute, Ft. Collins, CO.
7. **Garcia, L.A.** and Patterson, D. (2005) "South Platte Mapping and Analysis Program" Published in Colorado Water, April 2005, Colorado Water Resources Research Institute, Ft. Collins, CO.
8. **Garcia, L.A.** (2004) "Employing 'Sound Science' to Conjunctively Manage Surface and Ground Water." Published in Colorado Water, April 2004, Colorado Water Resources Research Institute, Ft. Collins, CO.
9. Patterson, L., and **Garcia, L.A.** (2003) "User Centered Decision Support Tools for Computing Augmentation Requirements in the South Platte River." Published in Colorado Water, October 2003, Colorado Water Resources Research Institute, Ft. Collins, CO.
10. **Garcia, L.A.,** Elhaddad, A., Foged, N., Eldeiry, A., and Lange R. (2001) "Monitoring and Modeling Salinity and its Impacts on Irrigated Fields in Colorado's Lower Arkansas River Basin." Published in Colorado Water, February 2001, Colorado Water Resources Research Institute, Ft. Collins, CO.
11. Khosla, R., and **Garcia, L.** (2001) "Using GIS Technologies to Monitor the Ogallala Aquifer." Published in Colorado Water, February 2001, Colorado Water Resources Research Institute, Ft. Collins, CO.
12. **Garcia, L.A.,** and Lange B. (2000) "SPMAP Provides Comprehensive Tool for Mapping and Analysis of South Platte." Published in Colorado Water, December 2000, Colorado Water Resources Research Institute, Ft. Collins, CO.

Presentations at Conferences, Symposia, or Workshops:

1. Dadkhah, A., D. M. Rizzo, P. R. Adler, R. van der Heijden, M. W. Myers, J. Rathore, **L. A. Garcia**, G. F. Pinder, K. Underwood, J. Hanley, and A. Zia. (2025). *Spatiotemporal Interrogation of Crop Yield Patterns to Identify Key Variables and Feature Interactions using a Tandem Evolutionary Algorithm.* **American Geophysical Union Fall Meeting (AGU25)**, Abstract B31K-1867.
2. Dadkhah, A., D. M. Rizzo, P. R. Adler, A. Ahmadi, N. Beckage, P. J. Clemins, **L. A. Garcia**, M. W. Myers, G. F. Pinder, S. Swami, and A. Zia. (2025). *A machine learning approach to improve the spatiotemporal resolution of actual evapotranspiration estimates by upscaling eddy covariance tower measurements to the field scale.* **American Geophysical Union Fall Meeting (AGU25)**, Oral Presentation, Abstract B34D-06.
3. Dadkhah, A., S. Musayev, D.M. Rizzo, P.R. Adler, A. Zia, G.F. Pinder, P.D. Oikonomou, **L. Garcia**, B. Ryan, "Predicting high-resolution yields using Daily, Cloud-Free Sentinel Imagery," Chapman Conference on Remote Sensing of the Water Cycle, Honolulu, HI, Feb. 13-16, 2024.
4. Ali Dadkhah, Donna M. Rizzo, **Luis A. Garcia**, Paul R. Adler, George F. Pinder, Patrick Clemens, "High-Resolution Daily Actual Evapotranspiration Estimation in Agricultural Fields

Using Cloud-Free Sentinel Imagery", iEMS 2024 Modeling Conference, East Lansing, MI., June 23-27, 2024.

5. Ali Dadkhah, Donna M. Rizzo, Luis A. Garcia, Paul R. Adler, George F. Pinder, Patrick J. Clemins, Jitender Rathore, Asim Zia, "A Framework for Spatiotemporal Improvement of Actual Evapotranspiration Estimates Using Neural Networks and Remote Sensing Data," AGU 24, Washington D.C., Dec. 9-13, 2024.
6. Dadkhah, A., S. Musayev, D.M. Rizzo, P.R. Adler, A. Zia, G.F. Pinder, P.D. Oikonomou, **L. Garcia**, B. Ryan, "Predicting high-resolution yields using Daily, Cloud-Free Sentinel Imagery", *Chapman Conference on Remote Sensing of the Water Cycle*, Honolulu, HI, Feb. 13-16, 2024.
7. Dadkhah, A., S. Musayev, P.R. Adler, D.M. Rizzo, A. Zia, G.F. Pinder, P.D. Oikonomou, **L. Garcia**, and B. Ryan, "High Resolution Corn Yield Prediction using Daily, Cloud-Free Sentinel Imagery", *Wide Open Science*, *Fall AGU (American Geophysical Union) Meeting*, San Francisco, CA, Dec. 11-15, 2023.
8. Jobin-Davis, E., Underwood, K., Dewoolkar, M., Hamshaw, S., **Garcia, L.** and Rizzo, D. (2018) "Educational Applications of an Enhanced Augmented Reality Sandbox". Presented at the American Geophysical Union Fall Meeting, December 10-14, Washington, D.C.
9. Member of the "Spurring Research and Development of New Technologies in Vermont" panel at the Vermont Council on Rural Development's summit on Creating Prosperity and Opportunity Confronting Climate Change, February 19, 2015, Randolph, VT.
10. **Garcia, L.A.**, Elhaddad, A., Altenhofen, J. and Hattendorf, M. (2013) **"**Developing Corn Regional Crop Coefficients Using a Satellite-Based Energy Balance Model (ReSET) in the South Platte Area of Colorado". Presented at the USCID Conference on "The Agriculture/Urban Water Interface — Conflicts and Opportunities", October 22 – October 25, Denver, CO.
11. Alzraiee, A. and **Garcia, L.**, (2012) "Modeling the Spatial and Temporal Impacts of Salinity and Waterlogging with the CSUID Model". Presented and published in the proceedings of the USCID Conference on "Managing Irrigation Systems in Today's Environment", October 13-16, Reno, NV.
12. **Garcia, L.**, Manana, N., Oad, R., and Dietrich-Kinzli, K., (2012) "Development of SCADA and Decision Support Systems for the Middle Rio Grande Conservancy District". Presented at the USCID Conference on "Irrigated Agriculture Responds to Water Use Challenges - Strategies for Success", April 3-6, Austin, TX.
13. Huber, D., Butters, G. and **Garcia, L.** (2011) " Solution Chemistry Effects On Soil Hydraulic Properties: Changes with Changing Soil Water Content". Poster presentation at the ASA, CSSA and SSSA Annual Meetings, San Antonio, TX, Oct. 16-19, 2011.
14. Elhaddad, A., **Garcia, L.,** J. Altenhofen and M. Hattendorf (2011) "Developing Early and Late Planted Corn Regional Crop Coefficients Using A Satellite–Based Energy Balance Model (Reset) in the South Platte River Area of Colorado". Presented at the 31th Annual Hydrology Days, Fort Collins, CO, March 21-23, 2011.
15. Elhaddad, A**., Garcia, L.**, J. Altenhofen (2011) "Evaluating the Accuracy of Using a Surface Energy Balance Model (ReSET) to Estimate Water Use in Agricultural Fields". UCOWR/NIWR Annual Conference, Boulder, CO, July 12-14.
16. Eldeiry, A**., Garcia, L.** (2011) "Using linear and nonlinear kriging and cokriging techniques with remote sensing data to estimate soil salinity". UCOWR/NIWR Annual Conference, Boulder, CO, July 12-14.
17. **Garcia, L.** and Elhaddad, A. (2010) "Applications of A Surface Energy Based Remote Sensing Model (ReSET) To Irrigation Water Management". Presented at the USBR-Alliance University Applied Remote Sensing of Evapotranspiration Conference, Desert Research Institute (DRI), Las Vegas, NV August 16-18.

18. Elhaddad, A. and **Garcia, L.** (2010) "Using A Surface Energy Model (ReSET) To Determine The Spatial Variability Of ET Within And Between Agricultural Fields". Presented at the 10th International Conference on Precision Agriculture, July18-21, Denver, CO.
19. **Garcia, L.** (2010) "IDSCU – Software for Consumptive Use Calculations". Presented at the Evapotranspiration Workshop: Using the best science to estimate consumptive use. Fort Collins, CO, March 12, 2010.
20. **Garcia, L.** (2010) "Remote sensing to improve ET estimates". Presented at the Evapotranspiration Workshop: Using the best science to estimate consumptive use. Fort Collins, CO, March 12, 2010.
21. Member of the "Water for Food, Energy and the Environment: Where Does Policy Meet Applications?" panel at the USCID Conference on Irrigation and Drainage for Food, Energy and the Environment, November 3-6, 2009, Salt Lake City, Utah.
22. Elhaddad, A. and **Garcia, L.A.** (2009) "ReSET-Raster a Surface Energy Balance Model for Calculating Evapotranspiration using a Raster". Presented at the 2009 GIS of the Rockies, Longmont, CO, September 16.
23. Elhaddad A., and **Garcia L.** (2009) "Calculating ET and Crop Coefficients for the South Platte Using a Surface Energy Balance Model (ReSET)". Presented at the 29th Annual Hydrology Days, Fort Collins, CO, March 25-27, 2009.
24. Kinzli K., Oad R., **Garcia L.**, Patterson D., and Gensler D. (2009) "Improving Irrigation System Performance through Scheduled Water Delivery in the Middle Rio Grande Conservancy District". Presented at the 29th Annual Hydrology Days, Fort Collins, CO, March 25-27, 2009.
25. Alzraiee A., and **Garcia L.** (2009) "Modeling Spatial and Temporal Variability in Irrigation and Drainage Systems: Improvements to the Colorado State Irrigation and Drainage Model (CSUID)". Presented at the 29th Annual Hydrology Days, Fort Collins, CO, March 25-27, 2009.
26. Kinzli K., Oad R., **Garcia L.**, Patterson, D., Shafike N. and Gensler D. (2008) "Efficient Irrigation Water Management in the Middle Rio Grande using Decision-support Models and Infrastructure Modernization". Presented at the 28th Annual Hydrology Days, Fort Collins, CO, March 26-28, 2008.
27. Panel member of the "Sharing Water in Times of Stress and Scarcity" panel at the 28th Annual Hydrology Days, Fort Collins, CO, March 26-28, 2008.
28. Matter, M., **Garcia, L.A.** and Fontane, D. (2008) "Effects of Anthropogenic Activities on Climate Cycle Patterns in Temperature and Precipitation over the 20th Century in the Gunnison River Basin". Presented at the 28th Annual Hydrology Days, Fort Collins, CO, March 26-28, 2008.
29. Matter, M., **Garcia, L.A.** and Fontane, D. (2008) "Complementary Temperature/Precipitation Patterns Accompanying Climate Cycles in the Gunnison River Basin & Effects of Climate Change and Land Use". Presented at the 28th Annual Hydrology Days, Fort Collins, CO, March 26-28, 2008.
30. **Garcia, L.A.** (2008) "Colorado River Basin Management: Evaluating and Adjusting to Hydroclimatic Variability". Presented as part of the Interdisciplinary Water Resources Seminar at Colorado State University, Fort Collins, CO, January 31, 2008.
31. **Garcia, L.A.** (2008) "Refining Water Accounting Procedures Using the South Platte Mapping and Analysis Program". Presented at the Colorado Water Congress, Denver, CO, January 25, 2008.
32. Oad R., **Garcia L.**, Kinzli K., Shafike N. and Gensler D. (2007) "Modernization of Irrigation Operations and Management in the Middle Rio Grande Irrigation System". Presented at the American Water Resources Association Annual Meeting, Albuquerque, NM. November 12-15, 2007.
33. **Garcia, L.A.** (2007) "Modeling Well Augmentation: From Computers to Satellites". Presented at the 18th Annual South Platte Forum, Longmont, CO, October 24-25, 2007.
34. Oad R., **Garcia L.**, Kinzli K., Shafike N. and Gensler D. (2007) "Decision-Support Systems for Efficient Irrigation in the Middle Rio Grande". Presented at the 2007 USCID Fourth International Conference on Irrigation and Drainage, Sacramento, CA. October 3-6, 2007.

35. Oad R., **Garcia L.**, Kinzli K. and Shafike N. (2007) "Decision-Support Systems for Efficient Irrigation Operations in the Middle Rio Grande Conservancy District". Presented at the 2007 New Mexico Water Research Symposium, Macey Center, New Mexico Tech, Socorro, NM. August 14, 2007.
36. Elhaddad, A., **Garcia, L.A.** and Gates, T.K. (2007) "A Remote Sensing - GIS Approach to Evaluate the Effects of Soil Salinity on Evapotranspiration". Presented at the 27th Annual Hydrology Days, Fort Collins, CO, March 19-21.
37. Matter, M., **Garcia, L.A.** and Fontane, D. (2006) "Linking Fall and Spring Streamflow, Temperature and Precipitation Conditions: A Case Study of the Gunnison River Basin". Presented at the MTNCLIM 2006 Conference, September 19-22, Timberline Lodge, Mt. Hood, Oregon.
38. R. Oad, **L. A. Garcia**, K-D. Kinzli and D. Patterson (2006) "Decision support systems for efficient irrigated agriculture". Presented at the First International Conference on Sustainable Irrigation 2006, Bologna, Italy, September 5-7.
39. **Garcia, L.A.** and Elhaddad, A. (2006), "Impact of Salinity on ET – Use of the Model Remove Sensing of ET (RESET) to Estimate Impact in the Arkansas River Basin in Colorado". Presented at the American Water Resources Association specialty conference on Geographic Information Systems and Water Resources IV, Houston, TX May 8-10.
40. **Garcia, L.A.** and Elhaddad, A. (2006), "Model for Calculating ET Using Remote Sensing (ReSET): Applications in Colorado". Presented at the American Society for Photogrammetry and Remote Sensing annual conference, Reno, NV, May 1-5.
41. Matter, M., **Garcia, L.A.** and Fontane, D. (2006) "Variations in Precipitation and Temperature Signals and Characteristic Responses in Autumn and Spring Seasonal Hydrographs: Implications to Water Resource Management in the Gunnison River Basin". Presented at the 26th Annual Hydrology Days, Fort Collins, CO, March 20-22.
42. Elhaddad, A., and **Garcia, L.A.** (2006) "Using LANDSAT imagery for detecting soil salinity in corn fields: calibration and validation". Presented at the 26th Annual Hydrology Days, Fort Collins, CO, March 20-22.
43. Jaramillo, A., **Garcia, L.A.** and Gates, T. (2006) "Preliminary Results of Detailed Field Measurements of On-Farm Water Management in the Lower Arkansas River Basin in Colorado". Presented at the 26th Annual Hydrology Days, Fort Collins, CO, March 20-22.
44. T. Gates and **L.A. Garcia** (2006) "Assessing Benefits of Improved Irrigation Practices for Crop Productivity & Environmental Health Along the Arkansas River". Presented at the 2006 Drip Irrigation & Water Quality Workshop, Sponsored by the Lower Arkansas Valley Water Conservancy District, Rocky Ford, CO, March 14.
45. **Garcia, L.A.** and Gates, T. (2006) "Toward Successful Pilot Implementation of Strategies for Remediation of A Salinity-Threatened Irrigated Watershed" poster accepted for presentation at the USDA-CSREES, National Water Conference, Research, Extension and Education for Water Quality and Quantity, San Antonio, TX, February 5-9.
46. M. A. Matter, **L. A. Garcia**, D. G. Fontane, (2005) "Coupled Teleconnections and River Dynamics for Enhanced Hydrologic Forecasting in the Upper Colorado River Basin USA". Presented at the American Geophysical Union, Fall 2005 Meeting, San Francisco, CA, December 5-9.
47. **Garcia, L.A.** (2005) "Salinity in Colorado – Lessons from the Arkansas River Basin", Lower South Platte Watershed Meeting, Sterling, CO, October 19, 2005.
48. M. A. Matter, **L. A. Garcia**, D. G. Fontane, (2005) "Influence of Hydroclimate on Seasonal and Diel Hydrograph Evolution in Snowmelt-Dominated River Systems". Open Science Conference on Global Change in Mountain Regions in Perth, Scotland, Oct 2-6, 2005.
49. Elhaddad, A. and **Garcia, L.A.** (2005) "Detecting Soil Salinity Levels in Agricultural Lands Using Satellite Imagery". Presented at the 2005 GIS of the Rockies, Denver, CO, September 22.

50. **Garcia, L. A.** and Elhaddad, A. (2005) "Detecting ET Using Landsat Imagery: Applications in Colorado". Presented at the 2005 GIS of the Rockies, Denver, CO, September 22.
51. **Garcia, L.A**., Elhaddad, A., Elgaali, E. and Eldeiry, A. (2005) "Generating Land Cover Maps for Urban Areas Using Aerial Photography". Presented at the 2005 GIS of the Rockies, Denver, CO, September 22.
52. Elhaddad, A., and **Garcia, L.A.** (2005) "Detecting Soil Salinity Levels in Agricultural Lands Using Satellite Imagery". Accepted for presentation at the Twenty-Fifth Annual ESRI International User Conference, San Diego, CA, July 25-29.
53. Gates, T. and **Garcia, L.A.** (2005) "Salinity and Selenium". Presented at the 2005 Arkansas River Basin Water Forum, Trinidad, CO, April 7-8th.
54. **Garcia, L.A.** and Elhaddad, A. (2005) **"**Calculating ET Using Satellite Imagery in the Arkansas Valley of Colorado". Presented at the 25th Annual Hydrology Days, Fort Collins, CO, March 7-9.
55. **Garcia, L.A.,** Elhaddad, A., Elgaali, E. and Eldeiry, A. (2005) "Generating Land Cover Maps for Urban Areas Using Satellite Imagery and Aerial Photography". Presented at the 25th Annual Hydrology Days, Fort Collins, CO, March 7-9.
56. Eldeiry, A., and **Garcia, L.A.** (2005) "Evaluation of Application Efficiency of Furrow Irrigation Systems in Clay Soils". Presented at the 25th Annual Hydrology Days, Fort Collins, CO, March 7-9.
57. Matter, M, and **Garcia, L.A.** (2005) "Hydrograph Evolution In Snowmelt-Dominated River Systems". Poster presented at the MTNCLIM 2005, Chico Hot Springs, MO, March 1-4.
58. **Garcia, L.A.** (2005) "Colorado State University South Platte Mapping and Analysis Program (SPMAP) Experiences with Technology Transfer". Presented at the Reclamation ET Workshop: State of the Art Review of ET Remote Sensing Science and Technology", Fort Collins, CO, February 8-10.
59. **Garcia, L.A.** and Saunde, P. (2005) "ET Work in the Great Plains Region of the USBR". Presented at the Reclamation ET Workshop: State of the Art Review of ET Remote Sensing Science and Technology", Fort Collins, CO, Feb. 8-10.
60. **Garcia, L.A**. (2005) "Overview of Modeling and Monitoring Salinity and Waterlogging in the Arkansas River Basin". Presented at the Arkansas Valley Farm/Ranch Symposium & Trade Show, Rocky Ford, CO, January 6.
61. **Garcia, L.A**. (2004) "Finding Ways to Reduce Salinity on the Farmland in the Arkansas River Basin" ½ day workshop, Lamar, CO, November 10.
62. Elgaali, E. and **Garcia, L.A.** (2004) "Quantification of Climate Change Impacts on Irrigation Water Demand in the Arkansas River Basin- Spatial Approach". Presented at the 24th Annual Hydrology Days, Fort Collins, CO, March 10-12.
63. **Garcia, L.A**. (2004) "New Capabilities of the South Platte Mapping and Analysis Program—Estimating Consumptive Use of Groundwater and Depletions to the South Platte in Colorado". Presented at the 24th Annual Hydrology Days, Fort Collins, CO, March 10-12.
64. David, O., Viger, R. and **Garcia, L.A.** (2004) "Geospatial Interoperability in Modeling Frameworks—The 'GEOLEM' Approach". Presented at the 24th Annual Hydrology Days, Fort Collins, CO, March 10-12.
65. Matter, M.A., **Garcia, L.A.,** and Fontane, D. (2004) "Requirements of Endangered Fishes and Water Supply Forecasting: Use of Physical Characteristics of Streamflows in Snowmelt-Dominated Rivers". Presented at the 24th Annual Hydrology Days, Fort Collins, CO, March 10-12.
66. **Garcia, L.A.** (2004) "Update on South Platte Map and its Use in Implementing Senate Bill 73". Presented at the Colorado Water Congress, Denver, CO, January 29.

67. **Garcia, L.A.** (2003) “User Centered Decision Support Tools for Computing Augmentation Requirements in the South Platte River”. Presented at the Groundwater Workshop sponsored by the Colorado Water Congress, Denver, CO, November 14th.
68. **Garcia, L.A.** (2003) "Pumping and Augmentation in the South Platte: Impacts and Opportunities”. Assessing the Impacts of Prolonged Severe Drought on Aquatic Ecosystems and Water Quality of the South Platte River Basin, Colorado, Fort Collins, April 3-4.
69. Elhaddad, A., and **Garcia, L.A.** (2003) "Soil Salinity Mapping Using Satellite Images”. Poster presented at the 23rd Annual Hydrology Days, Fort Collins, CO, March 31-April 2.
70. **Garcia, L.A**., and Patterson, D. (2003) “South Platte Mapping and Analysis Program (SPMAP) Water Management Tools for the Lower South Platte Basin”. Poster presented at the In Service Training, Colorado Cooperative Extension, Fort Collins, CO, Feb. 26th.
71. Hanna, B. **Garcia, L.A.,** and Loftis, J. (2003) **“**Modeling Selinium Loading Throughout the Uncomphagre Basin”. Poster presented at the In Service Training, Colorado Cooperative Extension, Fort Collins, CO, Feb. 26th.
72. **Garcia, L.A.** (2003) “Improving Estimates of Augmentation Flow Needs through Information Technology”. Presented at the Colorado Water Congress, Denver, CO, January 23.
73. **Garcia, L.A.,** Hanna, B. and Loftis, J. (2003) “Managing Selinium in the Upper Colorado River Basin”. Poster presented at the USDA-CSREES National Water Quality Coordinators Conference Tucson, Arizona, January 12-15.
74. Hanna, B., **Garcia, L.A.** and Loftis, J. (2002) "Modeling Selenium Loading Throughout the Uncompahgre Basin”. Poster presented at the Mancos Landscapes: Science and Management Workshop, Grand Junction, CO, June 10-13.
75. **Garcia, L.A.** (2001) “Arkansas River Drainage Basin: Providing a Better Understanding of Field Scale Processes in the Presence of Saline, Shallow Watertables”. Presented at Searching for Solutions “A Colorado Salinity/Selenium Symposium and Workshop”, Colorado Springs, CO, October 4-5.
76. **Garcia, L.A.** (2001) “South Platte Mapping and Analysis Program”. Presented at the 2001 GIS of the Rockies Conference, Denver, CO, September 20.
77. **Garcia, L.A.** (2001) "Salinity Study in the Lower Arkansas River Basin”. Presented at the 2001 Arkansas River Basin Water Forum, Lamar, CO, March 23.
78. **Garcia, L.A.** (2001) "South Platte Mapping and Analysis Program”. Presented at the 21st Annual Hydrology Days, April 2-5, 2001, Ft. Collins, CO.
79. **Garcia, L.A.** (2000) "Field Scale Monitoring of Salinity in the Arkansas River Basin”. Presented at the Annual Meeting of the Rocky Mountain Section of the Society for Engineering in Agriculture, Food, and Biological Systems (ASAE), Lamar, CO, November 3.
80. **Garcia, L.A.,** and Lange, B. (2000) "South Platte Mapping and Analysis Program”. Poster presented at the 2000 South Platte Forum, Longmont, CO, October 24.
81. **Garcia, L.A.,** Elhaddad, A., and Patterson, D. (2000) "Modeling Irrigation and Drainage System for Drainage Water Quality Management”. Presented at the International Challenges Facing Irrigation and Drainage in the New Millennium, June 20-24, 2000, Ft. Collins, CO.
82. Elhaddad, A., and **Garcia, L.A.** (2000) "Field Scale Monitoring of Salinity in the Arkansas River Basin”. Presented at the 20th Annual Hydrology Days, April 3-6, 2000, Ft. Collins, CO.
83. Shigidi, A., and **Garcia, L.A**. (2000) "Solving the Inverse Problem in Groundwater Flow by Iterative Inversion of a Neural Network”. Presented at the 20th Annual Hydrology Days, April 3-6, 2000, Ft. Collins, CO.
84. **Garcia, L.A.** (1999) "Agricultural Drainage Planning Program (ADPP)”. Presented as part of the US Bureau of Reclamation Biennial Groundwater-Drainage Workshop, Denver, CO, April 20, 1999.

85. **Garcia, L.A.** (1998) "Geographic Information Systems for Groundwater Agencies". Presented at the Groundwater Management Districts Association Summer Meeting, Colorado Springs, CO, June 1, 1998.
86. **Garcia, L.A.** (1998) "South Platte Mapping and Analysis Program." Presented at the 1998 South Platte Forum, Longmont, CO, October 18.
87. **Garcia, L.A.** (1998) "Consumptive Use Model". Presented at the Colorado Water Officials Association, Steamboat Springs, CO, October 1.
88. **Garcia, L.A.,** and Wind, B. (1997) "South Platte Mapping and Analysis Program". Computer demonstration at ESRI/GIS Users Group Meeting, June 19, Fort Collins, CO.
89. Mejía-Navarro, M., and **Garcia, L.A**. (1996) "Integrated Planning Decision Support System (IPDS) Application: Glenwood Springs, Colorado". Poster presented at the ASCE Natural Disaster Reduction international conference and exposition, December 3-5, Washington, DC.
90. Mejía-Navarro, M,. and **Garcia, L.A.** (1996) "Integrated Planning Decision Support System (IPDS)". Paper presented at the ASCE Natural Disaster Reduction international conference and exposition, December 3-5, Washington, DC.
91. Manguerra, H.B., and **Garcia, L.A.** (1996) "A Management System for Sustainable Crop Production Under Reduced Drainage Conditions". Paper presented in the 1996 ASAE Annual International Meeting in July 14-18, 1996, Phoenix, AZ.
92. Meyer, S., Stiles, E., and **Garcia, L.A.** (1996) "Demonstration of Wetscape: A Terrain-Based Decision Support Modeling for Planning Wetland Restoration and Management". Computer demonstration at consev"96, sponsored by ASCE, AWRA, and AWWWA, 4-8 January, 1996, Orlando, Florida.
93. **Garcia, L.A.**, and Manguerra, H. (1995) "Colorado River Decision Support System - Consumptive Use Model". Presented at Evaporation and Irrigation Efficiency Seminar, sponsored by the American Consulting Engineers Council of Colorado and the Colorado Division of Water Resources, October 10-11, 1995, Arvada, CO.
94. Meyer, S., Stiles, E., and **Garcia, L.A.** (1996) "Demonstration of Wetscape: A Terrain-Based Decision Support Modeling for Planning Wetland Restoration and Management". Presented at Conserve 1996, sponsored by ASCE, AWRA, and AWWWA, 4-8 January, 1996, Orlando, Florida.
95. Mahmoud, M., and **Garcia, L.A.** (1995) "Multi-criteria Decision Support System Implementation and Application". Presented at the First International Conference on Multiple Objective Decision Support Systems for Land, Water and Environmental Management: Concepts, Approaches, and Applications, July 23-28, 1995, University of Hawaii, Honolulu, Hawaii.
96. Manguerra, H., and **Garcia, L.A.** (1995) "Salinity Management Modeling and Implementation Issues in Irrigation and Drainage Systems". Presented at the ASCE First International Conference on Water Resources Engineering, summer 1995, San Antonio, TX.
97. **Garcia, L.A**., Manguerra, H., and Bennett, R. (1995) "Crop Consumptive Use Model using GIS and Databases". Presented at the ASCE First International Conference on Water Resources Engineering, summer 1995, San Antonio, TX.
98. Mahmoud, M., and **Garcia, L.A**. (1995) "Multi-criteria Decision Support System Implementation and Application". Presented at the American Geophysical Union. 15thAnnual Hydrology Days, April 3-7, 1995, Colorado State University, Fort Collins, CO.
99. Meyer, S., **Garcia, L.A.,** and Stiles, E. (1995) "Decision Support Modeling for Wetlands". Presented at the Western Wetlands and Water Quality Workshop, sponsored the US Bureau of Reclamation, US Army Corps of Engineers, and Eastern Municipal Water District, 11-14 September, 1995, Ontario, California.
100. Manguerra, H.B., **Garcia, L.A.**, and Quinn, N. (1994) "A Model for Evaluating Irrigation Induced Water Quality Problems in Irrigation and Drainage Systems". Presented at the 1994 International Summer Meeting, June 19-22, 1994, Kansas City, Missouri.

101. Mejía-Navarro, M., and **Garcia, L.A**. (1994) "Model for Integrated Planning Decision Support (IPDS) in Land-use Incorporating Geological Hazards, Vulnerability, and Risk Assessment". Conferencia Interamericana sobre Reduccion de los Desastres Naturales, Cartagena, Colombia. March 21- 24, 1994, section A-07, 22 p.

102. **Garcia, L.A.**, Vadas, R., Meyer, S., Ternlund, J., and Cunningham, J. (1994) "The Use of Decision Support Systems in Wetland Development at a Landscape Level". Presented at the 21th Annual Conference of the Water Resources Planning and Management Division, May 23-26, 1994, Denver, CO.

103. Meyer, S., Vadas, R., Ternlund, J., and **Garcia, L.A.** (1993)"A Decision Support System for Wetland Development at a Landscape Level". Presented at the American Geophysical Union Thirteenth Annual "Hydrology Days", March 30-April 2, 1993, Fort Collins, CO.

104. **Garcia, L.A.** (1993) "Decision Support System—A Planning Tool". Presented to Easter Municipal Water District, San Jacinto, CA, January 1993.

105. **Garcia L.A.**, Valdes J.B., and Strzepek K.M. (1990) "Impact of Changes in Weather Patterns on Irrigation and Drainage Systems". American Geophysical Union Tenth Annual "Hydrology Days", Colorado State University, Fort Collins, April 1990.

106. **Garcia, L.A**., Nevo, A., and Armbruster, M. (1993) "A Spatially Based Decision Support System for Evaluation and Planning of Wildlife Habitat". Presented at the 1993 U.S. Committee on Irrigation and Drainage/U.S. Bureau of Reclamation 1993 Seminar titled: Environmental Enhancements of Water Projects, Sacramento, CA, Oct. 14-15.

107. Nevo, A., and **Garcia, L.A.** (1993) "Spatial Optimization of Wildlife Habitat". Presented at the 1993 International Summer Meeting sponsored by the American Society of Agricultural Engineers and the Canadian Society of Agricultural Engineers, Spokane, Washington, June 20-23, 1993.

108. **Garcia L.A.**, Gates T.K., Jensen M.E., and Podmore T.H. (1992) "Management Support System for Conjunctive Irrigation and Drainage". Presented at the Sixth International Drainage Symposium, Nashville, Tennessee, Dec. 1992.

109. **Garcia L.A.**, Strzepek K.M. and Podmore T.H. (1990) "Design of Conjunctive Irrigation and Drainage System". Presented at the Visions of the Future, Third National Irrigation Symposium, Phoenix, Oct. 1990.

110. Strzepek, K.M. and **Garcia, L.A.** (1989) "An Intelligent Planning Tool for Emergency Operation of Multipurpose Reservoir Systems". Computerized Decision Support Systems for Water Managers ASCE 3rd Water Resources Operations and Management Workshop: Colorado State University, Fort Collins, June 1989.

111. **Garcia, L.A.**, Strzepek, K.M., and Podmore, T.H. (1989) "Design of Conjunctive Irrigation and Drainage Systems". ASAE International Winter Meeting, New Orleans, December 1989.

112. **Garcia, L.A.**, Strzepek, K.M., and Podmore, T.H. (1989) "Robustness: A Criterion for Drainage Design". ASAE International Winter Meeting, New Orleans, December 1989.

113. **Garcia, L.A.,** and Strzepek, K.M. (1988) "CURVENUMBER: An Expert System for Parameter Identification in Rainfall-Runoff Models". Special Session on Expert Systems in Water Resources, American Geophysical Union Fall Meeting, San Francisco, 9 December 1988.

114. **Garcia, L.A.,** and Strzepek, K.M. (1987) "SPILL: An Advanced Decision Support System for Evaluation of Spillways". Presented at the Computational Hydrology, First International Conference, Anaheim, July 1987.

115. Strzepek, K.M., and **Garcia, L.A.** (1987) "A Decision Support System for Tile Drainage Design". Third International Workshop on Land Drainage, Columbus, Ohio, Dec. 1987.

116. Strzepek, K.M., **Garcia, L.A.,** and Christopher J. (1987) "A Decision Support Package for Title Drainage Design". Fifth National Drainage Symposium, Chicago, Illinois, Dec. 1987.

Reports:

1. Gates, T.K, **Garcia, L.A.**, Hemphill, R.A., Morway, E.D. and Elhaddad, A. (2012) "Irrigation Practices, Water Consumption, & Return Flows in Colorado's Lower Arkansas River Valley". Completion Report No. 221.
2. Gates, T.K, **Garcia, L.A.**, and Labadie, J.W. (2006) "Toward Optimal Water Management in Colorado's Lower Arkansas River Valley: Monitoring and Modeling to Enhance Agriculture & Environment". Colorado Agricultural Experiment Station, Technical Report TR-6-10.
3. **Garcia, L.A**. Patterson, D., Patterson, L., Altenhofen, J., Hall, J.R., (2005) "South Platte Mapping and Analysis Program (SPMAP) Decision Support Tools for the Lower South Platte". Colorado Water Resources Research Institute, Completion Report No. 1203, May 2005.
4. Bohren, L., Breeze, P., Byerly, R., Galvin, K., **Garcia, L.,** Hahn, L., Hobbs, T. N., Kleinshmit, M., Lackett, J., Miller, K., Morgan, J., Ojima, D., Webb, R.S. (2002) "Preparing for a Changing Climate: The Potential Consequences of Climate Variability and Change". Colorado State University, Natural Ecology Lab., Fort Collins, CO.
5. **Garcia, L.A**. Patterson, D., Lange, R.W., Altenhofen, J., Hall, J.R., Leaf, F., and Odor, J. (2001) "South Platte Mapping and Analysis Program (SPMAP) Decision Support Tools for the Lower South Platte". Colorado Water Resources Research Institute, Completion Report No. 193, January 2001.
6. Raymond, J.H., **Garcia, L.A.**, and Lange, R. (1996) "Evaluation of SAMSON for Use in a South Platte Decision Support System". Colorado Water Resources Research Institute, Completion Report No. 191, December 1996.
7. Claessens, L., **Garcia, L.A.**, Lange, R., and Jensen, M. (1994) "Reference Evapotranspiration Maps for Colorado.".Colorado Water Resources Research Institute, Completion Report No. 182, January 1994.
8. **Garcia, L.A.**, and Lange, R. (1993) "Capability Assessment of the Integrated River Basin Environmental Management (IREM) Model for Application to the Kendrick Project". Integrated Decision Support Group, Technical Publication, October 1993.
9. Strzepek, K.M., **Garcia, L.A.**, and Over, T.M. (1989) "MITSIM 2.1 River Basin Simulation Model User Manual". Center for Advanced Decision Support for Water and Environmental Systems, Technical Publication, May 1989.
10. **Garcia, L.A.** (1985) "A Computer Aided Design of Agricultural Drains Under Uncertainty in Soil Properties". TEES Technical Report, Dec. 1985.

Invited International Lectures:

1. Invited Plenary Session Keynote speaker, "Challenges and Opportunities for Improvements in Remote Sensing Technology for Water Resources Management", International Conference on Research and Technology Development for Sustainable Water Resources Management (REDWARM), Cairo, Egypt, December 4, 2016.
2. Invited Plenary Technical Session Keynote speaker, "Use of Remote Sensing to Estimate and Monitor Water Use and Salinity in Arid and Semi-Arid Regions", International Conference on Research and Technology Development for Sustainable Water Resources Management (REDWARM), Cairo, Egypt, December 5, 2016.
3. Invited Keynote speaker – II International Conference on Water in Arid and Semiarid Lands, 09 to 12 of September 2007, Gravatá (Pernambuco), Brazil. Organized by ABRH – Assocoiação Brasileira de Recursos Hídricos, International Center of Arid and Semiarid Lands Studies at Texas Tech University, UFPE – Universidade Federal de Pernambuco and by UFRPE – Universidade Federal Rural de Pernambuco.

4. Invited speaker on Decision Support Systems at a NATO-Russian Advanced Research Workshop on "Flood Satellite Forecasting and Flood Risk Assessment" held in Khanty-Mansiisk, Siberia, May 28-29, 2004.

Invited Presentations:

1. "How Analytical Solutions and AWAS Compute Depletions and Accretions". Presented at the Colorado Aquifer Management Conference, Denver Colorado, November 28-29, 2012.
2. "The Use of Remote Sensing Techniques to Determine Evapotranspiration". Presented at the Colorado Bar Association Continuing Legal Education Program on Evapotranspiration, Denver, CO, October 12, 2012.
3. "Consumptive Use Modeling — From Computers to Satellites". Presented at the Groundwater Management District Association Summer 2007 Conference, Estes Park, CO, June 5, 2007.
4. "Impacts of Management and Technology". Presented at the 2006 Ogallala Symposium. Wray, CO, February 20, 2006.
5. "User centered water research as a way to connect university research with needs of Colorado water managers". Presented at Colorado State University as part of the Creating and Sustaining Constructive Conversations about Water sponsored by the Colorado Water Resources Research Institute, Fort Collins, CO, December 13, 2005.
6. "Calculating Crop Evapotranspiration and Soil Salinity Using Remote Sensing in the Arkansas Valley of Colorado". Presented at University of Colorado as part of the Hydrologic Sciences and Water Resources Engineering Seminar Series, Boulder, CO, April 13, 2005.
7. "Consensus Development of Computer Water Accounting". Presented at the Colorado Law Conference, Denver, CO, March 7-8, 2005.
8. "How the System Works—Where the Water Comes From and Where it Goes". Presented at the Lower South Platter River Symposium, Sterling, CO, February 13, 2003.
9. "South Platte Mapping and Analysis Program (SPMAP)—A Case Study in User Centered Tool Development". Presented at the Groundwater Management District Association Summer 2002 Conference, Breckenridge, CO, June 13, 2002.
10. "Field Scale Monitoring and Modeling of Salinity and Waterlogging in the Lower Arkansas River Basin of Colorado". Presented at the Western Soil Society 2002 Annual Meeting, Fort Collins, CO, June 4, 2002.
11. "South Platte Mapping and Analysis Program (SPMAP)". Presented as part of the Boulder Creek Watershed Program, Boulder, CO, September 22, 1999.
12. "South Platte Mapping and Analysis Program". Presented at the Cooperative Institute for Research in Environmental Sciences (CIRES) Western Water Seminar, Boulder, CO, April 9, 1999.
13. "Limits to Water". Presented at the Climate Change Impacts on the Great Plains Workshop, Fort Collins, CO, May 27-29, 1997.
14. "Decision Support Systems for Water Resources". Presented to the Agricultural Research Service (ARS) Natural Resources Research Center, Fort Collins, CO, October 10, 1993.
15. "Integrated Decision Support Systems for Water Resource Management". Presented at the National Park Service Water Resource Division Natural Resources Management Trainee Program, Fort Collins, CO, May 10-14, 1993.
16. "Wetland Development at a Landscape Level and the Use of Decision Support Systems". Presented at the Western Wetland Development and Restoration Workshop, sponsored by the US Bureau of Reclamation, US Army Corps of Engineers, Jackson Hole, Wyoming, June 14-19, 1992.

17. “Stochastic Approach to Conjunctive Irrigation and Drainage System Design”. Colorado State University, Agricultural Engineering Seminar Series, 30 March, 1990.
18. “Conjunctive Design of Irrigation and Drainage Systems”. Drainage Research Institute, Cairo, Egypt, 14 March, 1990.

RESEARCH

Projects recommended for funding:

1. 2025-2027: PI on “Technical, Economic and Environmental Evaluation of Desalinization Potential in Egypt,” the proposal submitted to the US-Egypt Science and Technology Joint Fund, $185,342 at the University of Vermont – recommended for funding but not funded due to the closure of USAID.

Funded Projects:

1. 2021-2026: PI on “Research and Education in Sustainable, Equitable, and Climate-Resilient Civil Infrastructure Systems”, funded by US Department of Education Graduate Assistant in Areas of National Need (GAANN) $762,312 at University of Vermont.
2. 2020-2021: Co-PI on “Feasibility of Remote Sensing-based Suspended Sediment Monitoring in the Lake Champlain Basin”, funded by Vermont Space Grant Consortium and Vermont EPSCoR $13,000 at University of Vermont.
3. 2013-2017: PI on “STEM-Connect: Career Training in the Science, Technology, Engineering & Math (STEM) Disciplines”, funded by U.S. Department of Labor $2,749,995 at University of Vermont.
4. 2011-2013: Co-PI on “Mobile Irrigation Water Management System Using eRAMS Cloud Computing Infrastructure”, funded by USDA-NIFA-National Institute of Food and Agriculture $365,000 at Colorado State University.
5. 2011-2013: Co-PI on “Assessment of Conservation Practices in Arkansas, Lower St. Francis & Bayou Macon”, funded by USDA-NRCS-Natural Resources Conservation Service $90,000 at Colorado State University.
6. 2011-2012: Co-PI on “Assessment of Conservation Practices in Arkansas, Cache River Watershed and Bayou Meto Watershed”, funded by USDA-NRCS-Natural Resources Conservation Service $60,000 at Colorado State University.
7. 2011-2013: PI on “OMS Support of CDSI Tools”, funded by USDA-NRCS-Natural Resources Conservation Service $440,000 at Colorado State University.
8. 2011-2012: Co-PI on “Colorado Association for Manufacturing and Technology Supplier Asset Mapping Database Tool”, funded by Colorado Association for Manufacturing Association $39,218 at Colorado State University.
9. 2011-2012: PI on “Review, Testing, Modification and Incorporation of the Detrended Kriging Spatial Climate Data Distribution Model”, funded by USDA-NRCS Natural Resources Conservation Service $195,750 at Colorado State University.
10. 2011-2013: PI on “Delivery of the OMS-based AGES-W Resource Concerns Assessment Model for Evaluating Water/Nutrient Management”, funded by USDA-NRCS Natural Resources Conservation Service $84,417 at Colorado State University.
11. 2011-2013: PI on “Spatial Data and Implementation Tools for Distributed Watershed Modeling Addressing NRCS Resource Concerns”, funded by the USDA-ARS Agricultural Research Service $326,350 at Colorado State University.
12. 2011-2013: PI on “Modification and Enhancement of the LCRAS Evapotranspiration Application”, funded by the DOI-Bureau of Reclamation $20,264 at Colorado State University.

13. 2011-2014: PI on “Use of Remote Sensing of Evapotranspiration Model (ReSET) in the South Platte River Basin”, funded by the Colorado Agricultural Experiment Station $99,000 at Colorado State University.
14. 2011-2012: PI on “Natural Resources Technology Delivery through the Object Modeling System (OMS) Framework 2011”, funded by the USDA-NRCS $245,000 at Colorado State University.
15. 2011-2012: PI on “Remote Sensing of Soil Salinity and Evapotranspiration”, funded by the Colorado Agricultural Experiment Station $15,000 at Colorado State University.
16. 2011-2012: PI on “Review, Testing, Modification and Incorporation of the Detrended Kriging Spatial Climate Date Distribution Model”, funded by the USDA-NRCS, $100,000 at Colorado State University.
17. 2010-2012: PI on “Use of Remote Sensing for Detecting Soil Salinity and Estimated Evapotranspiration”, funded by the US-Egypt Joint Science Technology Fund $100,374 at Colorado State University.
18. 2010-2011: PI on “2010 Global Research Alliance Fellowship”, funded by the USDA-Foreign Agricultural Service $33,760 at Colorado State University.
19. 2010: PI on “Natural Resources Technology Delivery through the Object Modeling System (OMS) Framework 2010”, funded by the USDA-NRCS $220,000 at Colorado State University.
20. 2009-2012: Co-PI on “A Multi Criteria Decision Tool for the Assessment and Planning of Watershed Management Practices”, funded by the USDA-CSREES-Coop State Research Education and Extension $615,000 at Colorado State University.
21. 2009-2011: Co-PI on “Development of Crop Coefficients for the South Platte Based on Multi-Temporal High-Resolution Remote Sensing of ET”, funded by the US Bureau of Reclamation $50,000 at Colorado State University.
22. 2009-2011: PI on “Delivery of a Prototype Field-to-Watershed Scale Model for CEAP Using and Enhanced OMS”, funded by the USDA-Agricultural Research Service $31,200 at Colorado State University.
23. 2009-2010: PI on “Remote Sensing of Soil Salinity and Evapotranspiration”, funded by the Colorado Agricultural Experiment Station $11,000 at Colorado State University.
24. 2009-2010: PI on “Natural Resources Technology Delivery through the Object Modeling System (OMS) Framework 2009”, funded by the USDA-NRCS $175,000 at Colorado State University.
25. 2008-2011: PI on “South Platte Mapping and Analysis Program (SPMAP): Remote Sensing, Consumption Use and Augmentation Accounting,” funded by the Colorado Agricultural Experiment Station $102,000 at Colorado State University.
26. 2008-2013: PI on “Module Development for OMS (Object Management System)”, funded by the USDA-ARS-Agricultural Research Service $170,600 at Colorado State University.
27. 2008-2010: PI on “Support Implementation and Development of the Object Modeling System”, funded by the USDA-NRCS-Natural Resources Conservation Service $100,000 at Colorado State University.
28. 2008-2010: PI on “Complete Needed Enhancements of OMS and Delivery of the OMS-Prototype Field to Watershed Scale Model for CEAP”, funded by the USDA-ARS-Agricultural Research Service $50,000 at Colorado State University.
29. 1997-2013: PI on "Evaluation of Models for a Decision Support System for the South Platte”, funded by several water users associations (Northern Colorado Water Conservancy District, Ground Water Appropriators of the South Platte, Lower South Platter River Group Inc., and Lower South Platte Water Conservancy District, City of Greeley, City of Fort Collins, Central Water Conservancy District, State Engineers Office) $271,000 at Colorado State University.

30. 2008-2009: PI on “Application of System Models to Evaluate and Extend Cropping Systems Studies at Different Great Plains/Northwest Sites”, funded by the USDA-ARS-Agricultural Research Service $72,000 at Colorado State University.
31. 2008-2009: PI on “Modification of the Integrated Decision Support Consumptive Use Model”, funded the United States Bureau of Reclamation $24,343 at Colorado State University.
32. 2008-2009: Co-PI on “Late-Season Monitoring of Irrigation Practices Under Conventional and Improved Technologies in Colorado's Lower Arkansas River Basin”, funded by the Colorado State Water Conservation Board $96,664 at Colorado State University.
33. 2008-2009: PI on “A Remote Sensing - GIS Approach to Evaluate the Effects of Soil Salinity on Evapotranspiration”, funded by Northern Colorado Water Conservancy District $40,238 at Colorado State University.
34. 2008-2009: Co-PI on “Decision Support Systems for Efficient Irrigation Management in the Middle Rio Grande”, funded by the New Mexico, Interstate Stream Commission $160,893 at Colorado State University.
35. 2006-2010: PI on “Second Phase: Alliance University Application of Remote Sensing Techniques to Estimating Evapotranspiration”, funded by Central State University through a grant from the Bureau of Reclamation $180,000 at Colorado State University.
36. 2006-2009: Co-PI on “Observing and Modeling Non-Beneficial Evaporative Upflux from Shallow Ground Water under Uncultivated Land in an Irrigated River Valley”, funded by the State of Colorado $74,942 at Colorado State University.
37. 2008: Co-PI on “Early-Season Monitoring of Irrigation Practices Under Conventional and Improved Technologies in Colorado's Lower Arkansas River Basin”, funded by the Colorado Division of Water Resources $ 74,233 at Colorado State University.
38. 2007-2008: Co-PI on “Decision Support Systems for Efficient Irrigation Management in the Middle Rio Grande”, funded by the New Mexico, Interstate Stream Commission $160,893 at Colorado State University.
39. 2007: PI on “GeoLem Caching and Multithreading Development”, funded by the USDA Natural Resources Conservation Service $50,000 at Colorado State University.
40. 2007: Co-PI on “Characterizing Non-beneficial Evaporative Upflux from Shallow Groundwater Under Uncultivated Land in an Irrigated River Valley”, funded by the Colorado Water Resources Institute $49,942 at Colorado State University.
41. 2007-2008: PI on “Refining Water Accounting Procedures Using the South Platte Mapping and Analysis Program”, funded by the Colorado Water Resources Institute $22,985 at Colorado State University.
42. 2007: PI on “Implementation and Development of the Object Modeling System”, funded by the Natural Resources Conservation Service $100,000 at Colorado State University.
43. 2007: PI on “GeoLem Caching and Multithreading Development”, funded by the Natural Resources Conservation Service $50,000 at Colorado State University.
44. 2006-2009: PI on “Implementation of a Multi-temporal High Resolution GIS-based Spatial Evapotranspiration Decision Support Tool”, funded by the Bureau of Reclamation $109,579 at Colorado State University.
45. 2005-2008: Co-PI on “Evaluation of Impact of Best Management Practices”, funded by Colorado Department of Health and Environment $150,000 at Colorado State University.
46. 2005-2008: PI on “Augmentation Accounting in the South Platte Using the South Platte Mapping and Analysis Program”, funded by the Colorado Agricultural Experiment Station $100,500 at Colorado State University.

47. 2003-2008: PI on “Apply and Enhance the Object Modeling System (OMS) for Building New Models for Field, Farm, and Watershed Scales”, funded by the USDA Agricultural Research Service $821,000 at Colorado State University.
48. 2006-2007: Co-PI on “Middle Rio Grande Conservancy District Implementation and Improvements of Decision Support System”, funded by the New Mexico, Interstate Stream Commission $100,000 at Colorado State University.
49. 2006-2007: PI on “Remote Sensing of Soil Salinity and Evapotranspiration”, funded by the Colorado Agricultural Experiment Station $11,000 at Colorado State University.
50. 2005-2007: PI on “Subsurface Drainage Research”, funded by the Bureau of Reclamation $100,000 at Colorado State University.
51. 2005-2007: Co-PI on “Arkansas Valley Research Center Lysimeter”, funded by the Colorado Water Conservation Board $340,000 at Colorado State University.
52. 2004-2007: PI on “Alliance University Application of Remote Sensing Techniques to Estimating Evapotranspiration”, funded by Central State University through a grant from the USBR $90,000 at Colorado State University.
53. 2004-2007: PI on “Toward Implementation of Strategies for Remediation of a Salinity-Threatened Irrigated Watershed”, funded by USDA Water Quality Program $495,000 at Colorado State University.
54. 2004-2007: PI on “Monitoring of Irrigation Amount, Timing, and Crop Yield in the Arkansas River Basin, Colorado”, funded by the Colorado Water Conservation Fund $270,000 at Colorado State University.
55. 2006: PI on “Calculation of ET using Remote Sensing”, funded by the Bureau of Reclamation $12,000 at Colorado State University.
56. 2006: PI on “Development of Tools to Estimate Return Flows from the Colorado Big Thompson Project”, funded by Northern Colorado Water Conservancy District $29,900 at Colorado State University.
57. 2005-2006: PI on “Calculating Soil Salinity and Crop Evapotranspiration in the Arkansas Valley in Colorado Using Remote Sensing”, funded by the Colorado Agricultural Experiment Station $15,000 at Colorado State University.
58. 2004-2006: PI on “Field-Scale Assessment of Improved Irrigation Practice Impacts on Drainage Water Dissolved Chemical Constituents and Stream Salt-Loading Vulnerability of Receiving Waters”, funded by EPA 319 funds through the Southeast Colorado Resource Conservation and Development Inc. $87,000 at Colorado State University.
59. 2004-2006: Co-PI on “Middle Rio Grande Conservancy District Operational Improvements and Decision Support System”, funded by the New Mexico Interstate Stream Commission $265,800 at Colorado State University.
60. 2001-2006: PI on “Framework for Decision Support System for Rocky Flats”, funded by the Department of Energy $155,000 at Colorado State University.
61. 2002-2005: PI on “Determining Soil Properties for Field Scale Modeling of Salinity”, funded by the Colorado Agricultural Experiment Station $40,500 at Colorado State University.
62. 2001-2005: PI on “South Platte Mapping and Analysis Program”, funded by the Colorado Agricultural Experiment Station $51,081 at Colorado State University.
63. 2001-2005: PI on “Enhancements to the South Platte Mapping and Analysis Program”, funded by the Colorado Water Resources Research Institute $69,000 at Colorado State University.
64. 2001-2005: PI on “Field Scale Monitoring and Modeling of Salinity”, funded by the Colorado Agricultural Experiment Station $205,952 at Colorado State University.

65. 2004: PI on “HYDROSS Improvements”, funded by the US Bureau of Reclamation $15,840 at Colorado State University.
66. 2001-2004: Co-PI on “Economic Stream-Aquifer Management in a Salinity Threatened Irrigated Valley”, funded by the USDA National Research Initiative $363,000 at Colorado State University.
67. 2001-2004: Co-PI on “Selenium in the Upper Colorado River Basin: Public Education and Remediation”, funded by the USDA $399,500 at Colorado State University.
68. 2003: PI on “Field Assistance and Soil Sampling and Analysis”, funded by the USBR $6,000 at Colorado State University.
69. 2002-2003: PI on “Integration of the South Platte Mapping and Analysis CU and SDFView models with Central Colorado Water Conservancy District Existing Databases”, funded by the Central Colorado Water Conservancy District $10,000 at Colorado State University.
70. 2001-2003: PI on “Managed Ground Water Recharge for Habitat Restoration: The Development of a Biological Component to the South Platte Mapping and Analysis Program (SPMAP)”, funded by the Colorado Water Resources Research Institute $21,750 at Colorado State University.
71. 2001-2003: PI on “Hydrologic Characterization to Develop/Design a *Natural Hydrograph* for Use in Adaptive Management of Multi-Purpose Reservoirs”, funded by the US Bureau of Reclamation $74,371 at Colorado State University.
72. 2002: Co-PI on “Soil Sampling and Analysis”, funded by the US Bureau of Reclamation $6,000 at Colorado State University.
73. 2002: PI on “Update the Hydrologic Model HYDROS”, funded by the US Bureau of Reclamation $10,000 at Colorado State University.
74. 2000-2002: Co-PI on “Monitoring the performance of Best Management Practices”, funded by EPA 319 funds through the Northeast Prowers Soil Conservation District $83,480 at Colorado State University.
75. 1995-2002: Co-PI on “Inventorying and Monitoring Natural Resources Status and Trends in the National Park System”, funded by the National Park Service for $1,749,410 at Colorado State University.
76. 1998-2001: PI on "Monitoring and Modeling Salinity and its Impacts on Agriculture in Colorado”, funded by the Colorado Agricultural Experiment Station for $256,000 at Colorado State University.
77. 2000: PI on “Seed Money for Evaluation of Wetscape in the Devil’s Lake Area”,funded by the USBR $5,000 at Colorado State University.
78. 1996-2000: PI on “Stream Water Quality Modeling Technology Development”, funded by the USBR $144,399 at Colorado State University.
79. 1997-2000: PI on “Evaluation of a Decision Support System for the South Platte”, funded by the Colorado Water Resources Research Institute for $30,000 at Colorado State University.
80. 1999-2000: PI on “Hydrologic Characterization to Design/Develop a *Natural Hydrograph*”, funded by the USBR $22,790 at Colorado State University.
81. 1999: PI on “Contribution Towards the Development of a Consumptive Use Model for the South Platte”, funded by the USBR $6,000 at Colorado State University.
82. 1998-1999: PI on “Modification to the Agricultural Drainage Planning Program Development”, funded by the USBR $20,000 at Colorado State University.
83. 1998: PI on “Hydrologic Maps”, funded by the Colorado Division of Wildlife $11,650 at Colorado State University.
84. 1996: PI on “Wetscape: Test, Refinement and Documentation”, funded by the USBR $47,161 at Colorado State University.
85. 1995-1996: PI on “Development of Data Presentation Framework using HTML”, funded by the USBR $20,095 at Colorado State University.

86. 1995-1996: PI on “Evaluation of SAMSON in the Context of a Decision Support System”, funded by the Colorado Water Resources Research Institute $9,000 at Colorado State University.
87. 1995-1996: PI on two tasks for “The Colorado River Decision Support System”, funded by the State of Colorado to a team which included Colorado State University. The total funding for these two tasks was $257,169 at Colorado State University.
88. 1995: PI on “The Natural Resource Workstation—Wetland Capabilities”, funded by the USBR $121,051 at Colorado State University.
89. 1995: PI on “Technical Assistance to the United State Bureau of Reclamation”, funded by the USBR $5,750 at Colorado State University.
90. 1994-1995: PI on “Modifications to the Integrated River Environmental Management (IREM) Model”, funded by the USBR $30,000 at Colorado State University.
91. 1994-1995: Co-PI on “Linking a Geographic Information System to Non-point Source Pollution Models for Assessing the Implementation of Best Management Practices”, funded by the Colorado Water Resources Research Institute $15,000 at Colorado State University.
92. 1993-1995: PI on “Development of the Logical Resources Workstation”, funded by the USBR $157,602 at Colorado State University.
93. 1994: PI on “Development of a Multi Criteria Evaluation System for the Red Bluff Dam”, funded by the USBR $45,000 at Colorado State University.
94. 1994: PI on “Development of a Graphical User Interface for MODFLOW”, funded by the USBR $51,594 at Colorado State University.
95. 1994: PI on three tasks for “The Colorado River Decision Support System”, funded by the State of Colorado to a team which included Colorado State University. The total funding for these three tasks was $185,572 at Colorado State University.
96. 1993-1994: PI on “Use of GIS Techniques as a Planning Tool for Establishment of Wetlands as Nitrate and Pesticide Removal Facilities”, funded by the Colorado Water Resources Research Institute $14,000 at Colorado State University.
97. 1993-1995: PI on “Development of the Natural Resources Workstation”, funded by the USBR $228,631 at Colorado State University.
98. 1992-1993: Intergovernmental Personnel Act Assignment (IPA) from 6/15/92 through 9/30/93. This IPA was between the Earth Science Division of the USBR and Colorado State University for $40,053 at Colorado State University.
99. 1992-1993: PI on “Development of Reference Evapotranspiration Maps for Colorado”, funded by the Colorado Water Resources Institute and the State Engineers Office for $19,000 at Colorado State University.
100. 1991-1993: PI on “Development of an ADSS for Integrated River Basin Environmental Management Second Phase”, funded by the USBR $139,857 at Colorado State University.
101. 1991-1992: PI on “Development of a Groundwater Workstation”, funded by the USBR, $219,498 at Colorado State University.
102. 1990-1992: Intergovernmental Personnel Act Assignment (IPA) from 7/23/90 through 3/10/92 for 75% of my salary. This IPA was between the Earth Science Division of the USBR and the University of Colorado at Boulder.

TEACHING AND ADVISING

University of Vermont

- CE003 Introduction to Civil & Environmental Engineering (Spring 19, 20, 21, 22, 23)

- CE010 Geomatics (Fall 21, 22)
- CEE1000 Introduction to Civil & Environmental Engineering (Spring 24)
- CEE2000 Geomatics (Fall 23, Fall 24)

Colorado State University

Classes Taught: (500 level and above are graduate courses)

- CIVE102 Civil Engineering Principles I (Fall 06, 07, 08, 09, 10, 11, 12)
- CIVE103 Civil Engineering Principles II (Spring 07, 08, 09, 10, 11, 12, 13)
- CE108 Civil Engineering Principles I (Fall 04, Fall 05)
- CECC192 Civil Engineering Principles I (Spring 05, 06)
- CE109 Civil Engineering Principles II (3 semesters)
- CB101 Agricultural and Chemical Engineering I (5 semesters)
- CB102 Agricultural and Chemical Engineering II (2 semesters)
- CB104 Strategies for Engineering Problem Solving (4 semesters)
- CE402 Civil Engineering Design 1 (Fall 06)
- CE403 Civil Engineering Design 1 (Spring 07)
- EG410 Systems Engineering and Optimization (5 semesters)
- CB470 Engineering Design I (1 semester)
- CB581 Advanced Engineering using GPS and GIS (Fall 99, 00)
- CB542 Engineering Applications of GPS and GIS (Fall 01, 02, 03)
- CE576 Engineering Applications of GPS and GIS (Fall 04, 05, 06, 07, 09)
- GS592 Water Resources Seminar (Fall 06, 07, 08, 09, 10, 11, 12)

List graduate advisees (Advisor or Co-Advisor) who graduated from the University of Vermont:

Date Granted	Name of Student	Degree	Thesis or Dissertation
Spring 2020	Yi-Kun Tung	M.S.(B)	

List of graduate advisees (Advisor or Co-Advisor) who graduated from Colorado State University:

Fall 2013	Ahmed Eldeiry	M.S.	Using Nonlinear Geostatistical Models for Soil Salinity and Yield Management
Spring 2012	Mary Coburn	M.S.(B)	
Spring 2012	Ayman Alzraiee	Ph.D.	Stochastic Analysis of Flow and Salt Transport Modeling In Irrigation-Drainage Systems
Spring 2012	Kendall DeJonge	Ph.D.	Evaluation and Improvement of Ceres-Maize Evapotranspiration Simulations Under Full and Limited Irrigation Treatments In Northern Colorado
Fall 2011	David Huber	M.S.	Re-evaluating Short-term Effects of

			Water Quality Changes on Soil Hydraulic Properties
Fall 2009	Margaret Matter	Ph.D.	Characterization of Hydroclimatic Variability in Tributaries of the Upper Colorado River over the 20th Century
Fall 2007	Nithya Srinivasan	M.S. (B)	
Summer 2007	Aymn Elhaddad	Ph.D.	Use of Remote Sensing to Estimate Soil Salinity and Evapotranspiration in Agricultural Fields
Summer 2007	Mathew Denno	M.S. (B)	
Fall 2006	Ahmed Eldeiry	Ph.D.	Spatial Modeling of Soil Salinity Using Remote Sensing, GIS and Field Data
Fall 2006	Elgaali Elgaali	M.S. (B)	
Summer 2006	Andres Jaramillo	M.S. (B)	
Fall 2005	Eric Morway	M.S. (B)	
Fall 2005	Sung-Jin Jeon	M.S.	Development and Evaluation of Synthetic Unit Hydrographs for Dam Inflow Prediction During Storm Events Using GIS
Summer 2005	Yuan-Wen Lin	Ph.D.	Development of a Model for Hydro-Salinity Simulation in Irrigated River Basins
Spring 2005	Elgaali Elgaali	Ph.D.	Modeling Regional Climate Change Impacts on Available Water for Agriculture
Fall 2004	Catherine Shrier,	Ph.D.	A Knowledge-based Spatial Methodology for Evaluation of Groundwater Recharge Sites for Stream Augmentation
Spring 2004	Daniel J. Gillham	M.S.	Data and Modeling of Irrigated Fields with Saline High Water Tables
Summer 2002	Mark Peters	M.S.	Integrating Meaningful Stakeholder Participation through Decision Support Systems: Making Better Water Resources Planning and Management Decisions
Spring 2002	Nathan Foged	M.S.	A GIS-Based Tool to Estimate Relative Yield Due to Salinity and Waterlogging in a Corn Field in the Lower Arkansas River Basin of Colorado
Fall 2001	Ahmed Eldaw	Ph.D.	Long Range Forecasting of the Nile River Flows Using Large Scale Oceanic and Atmospheric Forcings
Summer 2001	Ty Mull	M.S. (B)	

Fall 2000	Troy Monroe	M.S.	Evaluation of the Hydrologic Component of EPA's Basins Model Applied to the Big Thompson Watershed, Colorado
Summer 2000	Neville, James	M.S. (B)	
Summer 2000	Shigidi, Abdulla	Ph.D.	Solving the Inverse Problem in Groundwater Flow by Iterative Inversion of a Neural Network
Fall 1998	Cagatay Tanriverdi	M.S. (B)	
Spring 1998	Lahkim, Mohamed	Ph.D.	A Stochastic Approach to Environmental Exposure Assessment to Groundwater Contamination
Spring 1998	Vadas, Rolando	Ph.D.	A Methodology for Water Quantity and Quality Assessment for Wetland Development
Fall 1996	Azambuja, Nelson	M.S.	Flood Protection on River Basins With Limited Available Data
Fall 1995	Mahmoud Mohamed Rami	Ph.D.	Multi-objective Location and Sizing of Water Resource Projects with Dynamic Programming
Summer 1995	Al-Ali, Emad	M.S.	The Effect of an Increase in Temperature in Irrigation Demand
Spring 1995	Henry Manguerra	Ph.D.	Integrated design and Management of Irrigation Drainage Systems Incorporating Water Quality Aspects
Spring 1994	Henry Manguerra	M.S. (B)	
Spring 1993	Mansor Hasmi	Ph.D.	A Spatial Methodology for Estimation of Crop Water Requirements - The GIS Approach

Graduate Committee Work at the University of Vermont

Date Granted	Name of Student	Degree	Major
TBD	Leonardo Pockels	Ph.D.	CE
TBD	Leandro Conrado,	Ph.D.	CE
Spring 2024	Panagiota Stamatopoulou	Ph.D.	CE
Summer 2021	Alicia Tanneberger	M.S.	Biomedical

Graduate Committee Work at Colorado State University

Date Granted	Name of Student	Degree	Major
Fall 2015	Calvin Miller,	Ph.D.	CE
Spring 2011	Paul Haby,	Ph.D.	BAE
Spring 2011	Laurence Nance	M.S.(B)	CE
Spring 2010	Kristoph Kinzli	Ph.D.	CE
Spring 2010	Alex Herting	M.S.(B)	CE
Fall 2009	Amin Haghnegahdar	M.S.(B)	CE

Summer 2008	Enrique Triana	Ph.D.	CE
Spring 2008	Lim, Kwang-Suop	Ph.D.	CE
Fall 2006	Jennifer Mueller	M.S.	CE
Spring 2006	Ryan Hemphill	M.S.	CE
Spring 2006	Eric Moreway	M.S.	CE
Fall 2005	James Wittler	M.S.	CSS
Fall 2005	Phil Burkhalter	Ph.D.	CE
Fall 2005	Roy Gallea	M.S.	CE
Summer 2004	Michael Gossenauer	M.S.	CE
Fall 2003	Tanriverdi, Cagatay	Ph.D.	BAE
Spring 2003	Hay, Christopher	M.S.	BAE
Spring 2003	Fox, Garey	Ph.D.	CE
Fall 2002	Law, Whitney	M.S.	CE
Summer 2002	Stover, Jason	M.S.	FS
Spring 2002	Legoza, Sarah Marie	M.S.	BAE
Spring 2002	Liv Bleifuss Haugen	M.S.	BAE
Spring 2002	Mohamed Rafeed	Ph.D.	BAE
Spring 2001	Amit Sharma	Ph.D.	CE
Fall 1999	Erik Anglund	M.S.	BAE
Fall 1999	Hashem Faidy	Ph.D.	CE
Fall 1999	Enrique Triana	M.S.	CE
Summer 1999	Klinton Reedy	M.S.	CE
Spring 1998	Aymn Elhaddad	M.S.	FS
Spring 1998	Matz, Michael M	M.S.	CE
Spring 1998	Salim Halem Tarek	M.S.	CE
Spring 1998	Morton Ty	M.S.	BAE
Spring 1998	Mohammed Lahkim	M.S.	FS
Spring 1998	Kenan Diker	Ph.D.	BAE
Fall 1997	Ellington, David	M.S.	CE
Spring 1997	**Cetiner, Ziya**	**M.S.**	**CE**
Fall 1996	Morris Hall	Ph.D.	ER
Fall 1996	Abdulla Al-Thani	M.S.	CE
Spring 1996	Hatim Sharif	M.S.	CE
Spring 1996	Azza Abdel-Aziz	M.S.	CBE
Fall 1996	Abdulla Al-Thani	M.S.	CE
Spring 1995	Essam Barakat	M.S.	CBE
Spring 1995	Hanan Ali Abdelkader	Ph.D.	CE
Spring 1995	Mario Mejía-Navarro	Ph.D.	ER
Spring 1994	John Ternlund	M.S.	CS

Spring 1993	Steffen Meyer	M.S.	CE
Spring 1992	Hatem Ali	M.S.	CE

Undergraduate Student Research at the University of Vermont

- 2024 Sofia Golub, REU student, worked on a project related to estimating the area of Water Hyacinth in Lake Tana, Ethiopia.
- 2024 Aubrey Del Valle, REU student, worked on a project to estimate Evapotranspiration in some agricultural fields in California and Colorado.
- Summer 2023 Cooper Petrie, Barrett Summer Scholar, worked on estimating ET at Pennsylvania, Arizona, and Vermont sites.
- 2022-23 Lauren Water & Cooper Petrie, REU students, worked on a project to estimate Evapotranspiration in some agricultural fields in California.
- 2021-22 Lauren Water & Cooper Petrie, REU students, worked on a project to estimate Evapotranspiration in some agricultural fields in California.
- 2019-20 Jacob Ladue, REU student, worked on a project "Developing a smart residential irrigation system"

Undergraduate Student Research at Colorado State University

- 2006 Chad Hall, REU Program in Water Research at Colorado State University.
- 2004 Fletcher McKenzie, McNairs Scholar Program, Summer Research Assistant.
- 2003 Travis Hertneky, Design of a Biosolid Load Application Tracking System for Parker Ag Services, LCC.
- 2000 Caleb Barclay, Shadow Mountain Lake Delta Analysis.
- 2000 John Carrillo, Use of GIS information technology to enhance sharing of water quality data in Colorado.
- 1999 Rachel Correa, Use of GIS and Remote Sensing to Display the Areas of the Front Range that Receive Water from the Big Thompson Watershed and Determine the Location of Septic Systems in the Big Thompson Watershed.
- 1998 Micah Zogorsky, Design of Wetlands for Stormwater Detention and Water Quality.
- 1997 Andrea McPherson, Heavy metal concentrations from mine drainage into California Gulch, Leadville, CO.

EXTENSION

I served as a water resources specialist in CSU Extension from 1998 to 2013. My focus was on using information technology to improve water management. I worked in two main areas:

1. **South Platte Basin** - In my extension work in the South Platte, I established a collaborative process that I called "user-centered design" to develop Decision Support (DS) tools. With this approach, the users were key partners in the planning, development, implementation, and use of the DS tools. In the South Platte, I created an advisory group of water users and state agency representatives to study water-user data and modeling needs. As a result of this effort, water users embraced the user-centered design approach and provided several grants to develop the DS capabilities we jointly identified. The DS tools are collectively known as the South Platte Mapping and Analysis Program (SPMAP; www.ids.colostate.edu/projects.php/). Components of this work were adopted as part of the South Platte three-state agreement between Colorado, Wyoming, and Nebraska. In the years 2005-2010, the tools

developed as part of this DS were used to manage over 75% of the wells in the South Platte Basin (over 3,500 wells).

2. **Arkansas River Basin salinity and waterlogging issues.** Between 1999 and 2013, I worked on monitoring and modeling salinity issues at the field scale in the Arkansas River Basin in Colorado. I was the PI on a $495,000 three-year USDA water quality grant that focused on implementing remediation strategies in a large area of the valley. Our proposal was ranked 1st out of 102 proposals received.

SERVICE

UNIVERSITY SERVICE:

Departmental, College, and University Service

- ***Member,*** Civil and Environmental Engineering Department, curriculum sub-committee (2019-)
- ***Faculty Co-Advisor***, American Society of Civil Engineers Student Chapter – University of Vermont (2019-2020)
- ***Chairperson,*** University of Vermont Council of Deans (2017-2018)
- ***Member,*** University of Vermont Incentive-Based Budget Metrics Working Group (2016)
- ***Member,*** University of Vermont Incentive-Based Budget Steering Committee (2015-2017)
- ***Member,*** University of Vermont Incentive-Based Budget Grad Tuition Revenue and Aid Subcommittee (2013-2014)
- ***Faculty Advisor***, Engineers Without Borders – University of Vermont (2014-2019)
- ***Chair,*** Search Committee, Vice-President for Research, University of Vermont (2014)
- ***Member,*** Search Committee, Director of Development, College of Engineering, Colorado State University (2012-2013)
- ***Member,*** Search Committee, Agricultural Experiment Station Deputy Director and Associate Dean for Research, College of Agriculture, Colorado State University (2012-2013)
- ***Member,*** Search Committee, Vice Provost for Faculty Affairs, Colorado State University (2012)
- ***Member***, University Benefits Committee, Colorado State University (2012-2013)
- ***Member***, Committee on Strategic and Financial Planning, Colorado State University (2012-2013)
- ***Co-Chair/Chair,*** Committee on Faculty Governance, Colorado State University (Co-Chair 2009-2011; Chair 2011-2012)
- ***Faculty Advisor***, Student Chapter of Chi Epsilon - Civil Engineering Honor Society (2011, 2012, 2013)
- ***Chairperson,*** Search Committee, Director of the Undergraduate Program in Biomedical Engineering, College of Engineering (2010)
- ***Chairperson,*** Search Committee, Research Associate II, Civil and Environmental Engineering Department (2009)
- ***Member,*** Search Committee, Department Head of Mechanical Engineering, Colorado State University (2009)
- ***Member***, Search Committee, 4-H Youth Development Specialist, Extension (2009)
- ***Chairperson***, Search Committee, Senior Research Administrator, Sponsored Programs (2008)
- ***Chairperson,*** Search Committee, Research Associate II, Civil and Environmental Engineering Department (2007)
- ***Chairperson,*** Search Committee, Research Associate II, Civil and Environmental Engineering Department (2006)

- ***Member,*** Colorado State University Diversity Conference Advisory Committee (2005-2006, 2006-2007, 2007-2008)
- ***Member,*** College of Engineering Executive Committee (2005-2006, 2006-2007)
- ***Member,*** College of Engineering Advisory Board (2005-2006, 2006-2007)
- **Member,** Program Review Committee for Department of Soil and Crop Science (2005-2006)
- ***Chairperson***, Civil Engineering Executive Committee (2005-2006, 2006-2007)
- ***Chairperson***, Civil Engineering Internal Advisory Board (2005-2006, 2006-2007)
- ***Chairperson,*** Search Committee, Research Associate III, Civil and Environmental Engineering Department (2006)
- ***Chairperson,*** Search Committee, Research Associate II, Colorado Agricultural Experiment Station, Arkansas Valley Research Center (2004)
- ***Member***, Search Committee, Research Associate I, College of Engineering, Engineering Computing Services (2004)
- ***Chairperson,*** Search Committee, Research Associate II, Colorado Agricultural Experiment Station, Arkansas Valley Research Center (2004)
- ***Chairperson,*** Program Review Committee for Bioresource and Agricultural Engineering (2002-2003)
- ***Chairperson,*** Search Committee, Manager/Research Associate, Colorado Agricultural Experiment Station, Western Colorado Research Center (2002)
- ***Member***, Search Committee, Regional Extension Specialist, Arkansas River Basin, Rocky Ford (2002)
- ***Member***, Search Committee, Dean of Libraries (2002)
- ***Chairperson,*** Search Committee, Faculty Position in Civil Engineering (Precision Farming) (2002)
- ***Faculty Advisor***, Student Chapter of the American Society of Agricultural Engineers (ASAE) ¼ Scale Tractor Team (2002)
- ***Chairperson***, Search Committee***,*** Research Associate/Scientist (Non-tenure track faculty position), San Luis Valley Research Center, Agricultural Experiment Station (2001-2002)
- Faculty Council, College of Engineering Representative at Large (2001-2002)
- ***Member,*** Civil Engineering Department Advisory Committee (2000-2001, 2001-2002)
- ***Faculty Member,*** College of Engineering Student Technology Committee (2001-2002, 2002-2003, 2004-2005)
- College of Engineering Computing Committee, ***Member*** (2001-2002; 2003-2004, 2004-2005) and ***Chairperson*** (2002-2003, 2004-2005)
- Civil Engineering Department Computing Committee ***Member*** (2001-2002; 2002-2003), ***Chairperson*** (2003-2004; 2004-2005)
- ***Chairperson***, Search Committee, Research Associate/Scientist (Non-tenure track faculty position), Western Colorado Research Center, Agricultural Experiment Station (2001)
- ***Chairperson***, Search Committee, Research Associate, Mountain Meadow Research Center, Agricultural Experiment Station (2001)
- ***Member***, Search Committee, Department Head of Chemical and Bioresource Engineering (2000)
- ***Chairperson***, Advocacy Board for The Women and Minorities in Engineering Program (2000-2001,2001-2002,2002-2003)
- ***Faculty Advisor***, student chapter of the American Society of Agricultural Engineers (ASAE) (1998-1999, 1999-2000)

- ***Faculty Advisor***, Society of Hispanic Professional Engineers (SHPE) (1997-1998, 1998-1999, 1999-2000)
- ***Faculty Advisor***, College of Engineering PREVIEW (1997-1998, 1998-1999)
- ***Member***, Search Committee, Director of Women and Minorities in Engineering Program (1998)
- ***Engineering Advisor***, Shared Interest Living (1996-1997, 1997-1998)
- ***Member***, College of Engineering Diversity Committee (1997-1998)
- ***Member***, College of Engineering Undergraduate Student Affairs Committee (1997-1998)
- ***Chairperson,*** Department of Chemical and Bioresource Engineering Diversity Committee (1994-1995 and 1997-1998)
- ***Chairperson***, College of Engineering Undergraduate Student Affairs Committee (1994-1995, 1995-1996, 1996-1997)
- ***Member***, Department of Chemical and Bioresource Engineering Diversity Committee (1996-1997)
- ***Member***, Department of Chemical and Bioresource Engineering Advisory Committee (1996-1997)
- Liaison for Minority Students, Department of Chemical and Bioresource Engineering (1995-1996, 1996-1997)
- ***Member***, Search Committee, Research Associate, Microcomputer Manager of the Engineering Network Services (1997)
- ***Mentor***, University Mentoring Program (1993-1994)
- ***Member***, 5-year Program Internal Review Committee for the HELP/Success Center (1992-1993)

PROFESSIONAL SERVICE

National/International Committees

- Member of the Editorial Board of the Water Science Journal (Elsevier), 2019-present.
- Member of the International Review Committee of the Third World Irrigation Forum (WIF3) held in Bali, Indonesia, September 1-7, 2019.
- Member of the Editorial Board of the International Commission on Irrigation and Drainage (ICID) Journal, 2018-present.
- Member of the "Committee on the Scientific Bases of Colorado River Basin Water Management" of the National Academies – Water Science and Technology Board, June 2005 to February 2006.

National Conference/Workshop Planning Committees:

- **Co-Chair** of the "Agriculture/Urban Water Interface - Conflicts and Opportunities", A USCID Water Management Conference, October 22-25, 2013, Denver, CO.
- Member of the Planning Committee for the "Meeting Irrigation Demands in a Water-Challenged Environment", A USCID Water Management Conference, September 2010, Fort Collins, CO.
- Member of the Planning Committee for the "Fifth International Conference on Irrigation and Drainage", A USCID Water Management Conference, November 3-6, 2009, Salt Lake City, Utah.
- Member of the Planning Committee for the *Reclamation ET-Remote Sensing Workshop,* Sponsored by the U.S. Bureau of Reclamation, International Center for Water Resource Management at Central State University in Ohio, OhioView Consortium, and Colorado State University, February 8-11, 2005, Fort Collins, Colorado.

- Member of the Planning Committee for the *Water Rights and Related Water Supply Issues,* A USCID Water Management Conference, October 13-16, 2004, Salt Lake City, Utah.
- Member of the Planning Committee for the "Third International Conference on Irrigation and Drainage", A USCID Water Management Conference, March 30-April 2, 2005, San Diego, California.

Workshop Organizer/Presenter:

- Co-Chair of the Colorado State University 2008 Research Colloquium. Global Water: From Conflict to Sustainability – Challenges and Opportunities in an Interdependent World, March 25th, 2008, Fort Collins, CO.
- Organized and conducted a one-day training workshop on the "Integrated Decision Support Group Consumptive Use Model (IDSCU) and Aquifer Water Accounting Model (AWAS)", May 17th, 2007, at Colorado State University, Fort Collins, CO.
- Organized and conducted a one-day training workshop on the "Integrated Decision Support Group Consumptive Use Model (IDSCU) and Aquifer Water Accounting Model (AWAS)", May 19th, 2005, at Colorado State University, Fort Collins, CO.
- Organized and conducted two one-day training workshops on the "Integrated Decision Support Group Consumptive Use Model (IDSCU)", May 18th and May 19th, 2004, at Colorado State University, Fort Collins, CO.
- Conducted a one-and-a-half-day short course, June 21-22, 1990, on "Advanced Decision Support Systems for Technical Organizations", at the University of Alaska at Fairbanks.
- Provided two days of lectures as part of the "Drainage and Salinity Control for Irrigated Lands", a study tour for nine participants, organized by the Colorado Institute for Irrigation Management, Colorado State University, Fort Collins, CO, September 8-25, 1992.
- Worked for two weeks with several engineers from the Central Water Commission of India between April and May of 1996 as part of a study tour organized by the ISWR, IDS office, Colorado State University, Fort Collins, CO.
- Instructor in the "Interregional Training Workshop in the use of Microcomputers in Water Resources Development" sponsored by the United Nations – Department of Technical Cooperation for Development. Taught the application of general-purpose computer programs to water resources, the use of groundwater programs, pipe network analysis, and a watershed-modeling program. Kisumu, Kenya, November 1985 - December 1985.

Professional Societies Committee Service:

- Executive Committee of the United States Committee on Irrigation and Drainage (2011-2014). Elected Secretary of the board (2011-2014).
- American Society of Civil Engineers Department Heads Council Executive Committee (2008-2011).
- Member of the Western Extension Research Activity (WERA) Project 202 "Climatic Data Application in Irrigation Scheduling and Water Conservation" (2005-2008).
- Colorado State University representative to the Universities Council on Water Resources (UCOWR) (2005-2008).
- Member of the Agricultural Drainage and Subsurface Water Management Committee and the Irrigation and Drainage Technical Oversight Committee of the Irrigation and Drainage Division of the American Society of Civil Engineering (ASCE).
- Member of the Benefits of Drainage and Subirrigation (SW-236) and the Drainage Research Committee (SW-231) of the American Society of Agricultural Engineers (ASAE).

- Member of the Water Quality & Drainage Committee of Environmental & Water Resources Institute (EWRI) of the American Society of Civil Engineers.

Technical Societies:

- Member of the American Society of Civil Engineers (ASCE)
- Member of the United States Committee on Irrigation and Drainage (USCID)
- Member of the American Society for Engineering Education (ASEE)
- Member of the Civil Engineering Honor Society (Chi Epsilon)
- Member of the Order of the Engineer

Conference/Workshop Sessions Chairperson/Facilitator:

- Chairperson for the session on "Water Management/Optimization - Crops - Irrigation - Salinity" American Geophysical Union 31st Annual Hydrology Days, March 21-23, 2011, Fort Collins, CO.
- Moderator for the session on Application of Technology II, of the USCID Conference on Irrigation and Drainage for Food, Energy and the Environment, November 3-6, 2009, Salt Lake City, Utah.
- Chairperson for the session on "Irrigation - Evapotranspiration - Soil Salinity" American Geophysical Union 29th Annual Hydrology Days, March 25-27, 2009, Fort Collins, CO.
- Chairperson for the session on "Hydrology - Agriculture - Water Management" American Geophysical Union 28th Annual Hydrology Days, March 26-28, 2008, Fort Collins, CO.
- Chairperson for the session on "Sediment - Erosion - Evapotranspiration - Irrigation" American Geophysical Union 27th Annual Hydrology Days, March 19-21, 2007, Fort Collins, CO.
- Chairperson for the session on "Agro-ecosystems of the Lower Arkansas River" American Geophysical Union 26th Annual Hydrology Days, March 20-22, 2006, Fort Collins, CO.
- Panel Facilitator for the "User Centered Panel Discussion" as part of the Hydrological Modeling Workshop sponsored by the USBR, April 6th and 7th, 2004, Denver, CO.
- Chairperson for the session on "Watershed Hydrology and Modeling" American Geophysical Union 24th Annual Hydrology Days, March 10-12, 2004, Fort Collins, CO.
- Chairperson for the "South Platte River Modeling Session" American Geophysical Union 21st Hydrology Days, April 2-5, 2001, Fort Collins, CO.
- Co-leader of the Water Group of the "Central Great Plains Symposium and Workshop on the Climate Change Impacts Assessment" sponsored by the Department of Energy, The President's Office of Science and Technology Policy, US Global Change Research Program, and Colorado State University, Loveland, CO, March 22-23, 1999.
- Leader of the Water Group of the workshop titled "Climate Change Impacts on the Great Plains" sponsored by the Department of Energy, the President's Office of Science and Technology Policy, US Global Change Research Program, and Colorado State University, Fort Collins, CO, May 27-29, 1997.
- Chairperson for session on "Decision Support System in Water Resources" American Geophysical Union 13th Annual Hydrology Days, March 30-April 2, 1993, Fort Collins, CO.
- Co-moderator for the session on "Conjunctive Use of Surface and Groundwater", USCID Conference *Water Rights and Related Water Supply Issue* October 13-16, 2004, Salt Lake City, Utah.

Professional Service to Federal Agencies:

- Member of the external focus group for the Great Plains Systems Research Unit of the United States Department of Agriculture, Agricultural Research Service.
- Member of the external focus group for the Water Management Research Unit Precision Agriculture project of the United States Department of Agriculture, Agricultural Research Service.

Reviewer:

- Tenure and Promotion cases
- U.S. Civilian Research & Development Foundation (CRDF)
- Journal of Arid Land Research and Management
- Journal of the Saudi Society of Agricultural Sciences
- Soil Science Society of America Journal
- American Society of Civil Engineers, Journal of Irrigation and Drainage
- Wyoming Water Resource Research Institute
- New Mexico Water Resources Research Institute
- Utah Water Resources Research Institute
- United States Department of Agriculture, Agricultural Research Service
- United States Committee on Irrigation and Drainage (USCID)
- Fund for Rural America Standard Grant Program, USDA
- Transactions of ASAE
- Reviewer research and development proposals submitted to the United States Bureau of Reclamation's science and technology program (2003)
- Colorado Agricultural Experiment Station

Professional Development:

- POGIL Workshop, College of Engineering and Mathematical Sciences, May 2019.
- Member of Class 10 (2000-2001) of the Leadership Development Program sponsored by the Agricultural Experiment Station, National Committee on Organization and Policy (ESCOP), and the Cooperative Extension national Academic Programs Committee on Organization and Policy Overview (ACOP)
- Colorado State University (2000-2001) Men's Mentoring Group

Consulting Experience:

- Denver Water—Consultant in the development of GIS information to help in the quantification of lawn irrigation return flows. Denver, Colorado, 1998 to 2011.
- United Nations—Consultant in the Development of a Decision Support System for the Project "Automated Operation of Irrigation Canal Systems". Pune, India. December 1993.
- University of Perugia—River Basin Modeling of the Tiber River Basin. Perugia, Italy. June 1990 and May 1991.
- Ministry of Public Works and Water Resources—Drainage Design and Modeling. Cairo, Egypt (USAID Project: 263-0132). February 1990 - March 1990.
- Cohen, Milstein, and Hausfeld, Attorneys at Law—Subcontractor. Modeled and evaluated a water supply system. Washington, D.C.

- Haskoning Royal Dutch Engineers and Architects—Subcontractor. Provided technical support for the river basin planning computer model MITSIM. Nijmegen, The Netherlands.
- U.S. Army Corps of Engineers, Waterways Experiment Station—Worked as part of a team developing a planning model for the Han River (Korea) Control System. Vicksburg, Mississippi
- International Institute for Applied Systems Analysis—Water Resources Planning for Shanxi Province, People's Republic of China. Luxemburg, Austria.

Community Outreach:

- Member of the Board of Directors of Color Our World (COW). A non-profit organization providing mobile art relief around the world.
- Coach of a First Lego League (FLL) team – Green Mountain Homeschool Robotics, which has won the VT state championship in 2022 & 2023.