Barbara S. Minsker

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EDUCATION

B.S. with Distinction, Cornell University, Operations Research and Industrial Engineering, 1986 Ph.D., Cornell University, Civil and Environmental Engineering, 1995

Post-doctoral research associate, University of Vermont, Research Center for Groundwater Remediation Design, 1995 – 1996

Future Thinking leadership development program, Center for Authentic Leadership, 2007-2010 Committee on Institutional Cooperation (CIC) Academic Leadership Program, 2009-10 Mindfulness-Based Stress Reduction Instructor Training, Center for Mindfulness, 2014-15

HONORS AND AWARDS

1998	National Science Foundation Faculty Early Career Development (CAREER) Award
1999-2000	National Center for Supercomputing Applications (NCSA) Faculty Fellow
2000	Army Young Investigator Award
2000	Presidential Early Career Award for Scientists & Engineers (PECASE)
2001-2002	Center for Advanced Study Fellow
2001-present	Arthur and Virginia Nauman Faculty Scholar
2003	Fellow, Japan Society for the Promotion of Science Invitation Fellowship Program
2003	American Society of Civil Engineers Walter L. Huber Civil Engineering Research Prize
2005	ASCE Environmental and Water Resources Institute (EWRI) Outstanding Achievement
	Award
2006	Xerox Award for Faculty Research
2008-2011	University Scholar
2012	EWRI Service to the Profession Award
2015	Leadership Illinois, Class of 2015

RESEARCH INTERESTS

Developing innovative systems approaches to improve sustainability and resilience of coupled human and natural systems. Current research focuses on coupling machine learning and social computing with "Big Data" and other information technology to address wicked problems such as green stormwater infrastructure design, integrated water cycle engineering, combined sewer overflows, hypoxia, and floods and droughts.

PROFESSIONAL EXPERIENCE

2006-present	Professor, Department of Civil and Environmental Engineering, University of Illinois
	Urbana-Champaign
1999-present	Faculty Affiliate, National Center for Supercomputing Applications, University of Illinois
	Urbana-Champaign
2010-present	President, Joyful U, Inc.
2008-2011	Associate Provost Fellow, Office of the Provost, University of Illinois Urbana-Champaign

- 2005-2007 **President**, Hazard Management Systems, Inc.
- 2002-2006 Associate Professor, Department of Civil and Environmental Engineering, University of Illinois Urbana-Champaign
- 1996-2002 Assistant Professor, Department of Civil and Environmental Engineering, University of Illinois Urbana-Champaign
- 1988-1990 Environmental Policy Analyst and Work Assignment Manager, Wade Miller Associates, Arlington, VA
- 1986-1988 Environmental Policy Analyst, ICF Incorporated, Fairfax, VA

MAJOR LEADERSHIP AND SERVICE ACTIVITIES

- Department of Civil and Environmental Engineering (CEE):
 - <u>Founding Co-Coordinator</u>, <u>Sustainable and Resilient Infrastructure Systems Program</u> (2011-13): Created governance structure to serve as a model for cross-disciplinary programs, new MS and PhD programs, global leaders program, and new courses integrating sustainability and resilience into CEE planning, design, and management.
 - <u>Chair, Global and Multidisciplinary Committee (2010)</u>: Created multidisciplinary and global learning outcomes, new multidisciplinary and global faculty awards and fellows, a new program in Sustainable and Resilient Infrastructure Systems, a new primary specialty in Sustainable and Resilient Infrastructure Systems, and three new secondary specialties in Sustainability, CEE in a Global Context, and Custom Multidisciplinary.
- Campus:
 - <u>Illinois Promise Scholars Mentor (2015-present)</u>: Mentoring low-income and first-generation college students to support their development and success at Illinois.
 - <u>Associate Provost Fellow</u>: Led the creation of the University of Illinois Urbana-Champaign Sustainability Initiative vision, implementation plan, and curriculum development program, 2008-11. After completing the 3-year Fellow term, continued to advise on sustainability activities and lead initiatives on community sustainability partnerships for research, education, and public engagement, 2011-13.
- National:
 - <u>Principal Investigator (PI) and co-PI of the National Science Foundation (NSF)-funded</u> <u>WATERS Network Project Office (2005-10).</u> Created a national water science plan that was evaluated by the National Research Council and led to a new \$26 million/year NSF program on Water Sustainability and Climate.
 - American Society of Civil Engineers:
 - <u>Founding Chair</u>, Task Committee on Performance-Based Sustainable Design of Water Resources Infrastructure (2011-14)
 - <u>Secretary</u>, Environmental Sensing and Cyber-infrastructure: Technologies and Applications (2011-12). Also control group member, 2010-11.
 - <u>Chair</u>, Environmental and Water Resource Systems Committee (2005-6). Also secretary (2003-4), Vice-Chair (2004-5), Past-Chair (2006-7).
 - <u>Founding Chair</u>, Task Committee on Long-Term Groundwater Monitoring (2000-2003). Awarded EWRI Outstanding Achievement Award.
 - <u>Control Group Member</u>, Evolutionary Computation Task Committee (2003-6)
 - o Associate Editor, Water Resources Research (2002-4)

- Entrepreneurism:
 - <u>President, Hazard Management Systems Inc. (2005-7)</u>. Created automated genetic algorithm software for environmental management and design. Sold to Summit Envirosolutions Inc., who still use and advance the software.
 - <u>President, Joyful U Inc. (2010-2015)</u>. Founded non-profit organization dedicated to leadership, employee, and personal development. Delivered programs in authentic leadership, purpose-driven workplace, mindfulness, and resilience. Now transitioned to working solely with organizations through <u>www.BarbaraMinsker.com</u>.

BOOKS AND BOOK CHAPTERS

- Minsker, Barbara S., "Genetic Algorithms," in *Hydroinformatics: Data Integrative Approaches in Computation, Analysis, and Modeling*, ed. Praveen Kumar, CRC Press, ISBN 0849328942, 2005.
- Minsker, Barbara, *The Joyful Professor: How to Shift From Surviving to Thriving in the Faculty Life*, Henschel Haus Publishing Inc., 2010.
- Minsker, Barbara, Joyful U: Discovering the Path of Success and Happiness; Mindful Living with Purpose and Resilience, Henschel Haus Publishing Inc., 2014.

PEER-REVIEWED PAPERS

- Padhy, Smruty, Greg Jansen, Jay Alameda, Edgar Black, Liana Diesendruck, Mike Dietze, Praveen Kumar, Rob Kooper, Jong Lee, Riu Liu, Ricard Marciano, Luigi Marini, Dave Mattson, Barbara Minsker, Chris Navarro, Marcus Slavenas, William Sullivan, Jason Votava, and Kenton McHenry, "Brown Dog: Leveraging Everything Towards Autocuration," 2015 IEEE International Conference on Big Data (IEEE BigData 2015), in press.
- Minsker, B., L. Baldwin, J. Crittenden, K. Kabbes, M. Karamouz, K. Lansey, T. Malinowski, E. Nzewi, A. Pandit, J. Parker, S. Rivera, C. Surbeck, B. Wallace, and J. Williams, "Progress and Recommendations for Advancing Performance-Based Sustainable and Resilient Infrastructure Design," *Journal of Water Resources Planning & Management*, http://dx.doi.org/10.1061/(ASCE)WR.1943-5452.0000521, 2015.
- Rivera, S., B. Minsker, D. Work, and D. Roth, "A text mining framework for advancing sustainability indicators," *Environmental Modelling and Software*, 62, 128-138, 2014.
- Maier, H.R., Z. Kapelan, J. Kasprzyk, J. Kollat, L.S. Matott, M.C. Cunha, G.C. Dandy, M.S. Gibbs, E. Keedwell, A. Marchi, A. Ostfeld, D. Savic, D.P. Solomatine, J.A. Vrugt, A.C. Zecchin, B.S. Minsker, E.J. Barbour, G. Kuczera, F. Pasha, A. Castelletti, M. Giuliani, *et al.*, <u>Evolutionary algorithms and other metaheuristics in water resources: Current status, research challenges and future directions, *Environmental Modelling & Software, Volume 62*, Pages 271-299, 2014.</u>
- Coopersmith, E., B. Minsker, C. Wenzel, and B. Gilmore, "Machine Learning Assessments of Soil Drying for Agricultural, Construction, and Recreational Planning," *Journal of Computers and Electronics in Agriculture*, *104*, 93-104, 2014.
- Hill, David J., Branko Kerkez, Amin Rasekh, M. Katherine Banks, Barbara Minsker, Avi Ostfeld, "Sensing and Cyberinfrastructure for Smarter Water Management: The Challenge of Ubiquity," *Journal of Water Resources Planning and Management, Vol. 140*, No. 7, 2014.
- Ahalt, S.; Band, L.; Christopherson, L.; Idaszak, R.; Lenhardt, C.; Minsker, B.; Palmer, M.; Shelley, M.; Tiemann, M.; Zimmerman, A., "Water Science Software Institute: Agile and Open Source Scientific Software Development," *Computing in Science & Engineering*, vol.16, no.3, pp.18-26,

doi: 10.1109/MCSE.2014.5, 2014.

- Coopersmith, E., B. Minsker, and M. Sivapalan, Using similarity of soil texture and hydroclimate to enhance soil moisture estimation, *Hydrol. Earth Syst. Sci.*, 18, 3095-3107, doi:10.5194/hess-18-3095-2014, 2014.
- Coopersmith, E., B. Minsker, and M. Sivapalan, "Patterns of Regional Climate Change: An Analysis of Shifting Hydrologic Regime Curves," Water Resources Research, 50(3), 2014, 1960–1983, DOI: 10.1002/2012WR013320.
- Zimmer, A., A. Schmidt, A. Ostfeld, B. Minsker, "A New Method for the Offline Solution of Pressurized and Supercritical Flows," *Journal of Hydraulic Engineering*, doi: 10.1061/(ASCE)HY.1943-7900.0000747, 2013.
- Ahalt, S., Larry Band, Barbara Minsker, Margaret Palmer, Michael Tiemann, Ray Idaszak, Chris Lendhardt and Mary Whitton "Water Science Software Institute: An Open Source Engagement Process," Proceedings of the 2013 International Workshop on Software Engineering for Computational Science and Engineering, 2013.
- Wietsma, T., and B. Minsker, "Enabling scientific data sharing and re-use," 2012 IEEE 8th International Conference on E-Science, Chicago, IL, <u>http://dx.doi.org/10.1109/eScience.2012.6404475</u>, 2012.
- Gartial, M.R., B. Braunschweig, Te-Wei Chang, Parya Moinzadeh, Barbara S. Minsker, Gul Agha, Andrzej Wieckowski, Laura L. Keefer and Gang Logan Liu, "Micro Electronic Wireless Nitrate Sensor Network for Environmental Water Monitoring," *Environmental Science: Processes & Impacts* (formerly J. Environ. Monit.), DOI:10.1039/C2EM30380A, 2012
- Hill, David J., Yong Liu, Luigi Marini, Rob Kooper, Alejandro Rodriguez, Barbara S. Minsker, James Myers, Terry McLaren, "Using A Virtual Sensor System to Create Real-Time Customized Environmental Data Products," *Environmental Modelling and Software*, 26, http://dx.doi.org/10.1016/j.envsoft.2011.09.001, 1710-1724, 2011.
- Babbar-Sebens, Meghna, and B. S. Minsker, "Interactive Genetic Algorithm With Mixed Initiative Interaction For Multi-Criteria Ground Water Monitoring Design," *Applied Soft Computing*, http://dx.doi.org/10.1016/j.asoc.2011.08.054, 2011.
- Gopalakrishnan, G., B. Minsker, and A.Valocchi, "Monitoring Network Design for Phytoremediation Systems Using Primary and Secondary Data Sources," *Environmental Science and Technology*, 45 (11), 4846–4853, 2011.
- Yan, S., and B. Minsker, "Applying Dynamic Surrogate Models in Noisy Genetic Algorithms to Optimize Groundwater Remediation Designs," *Journal of Water Resources Planning and Management*, 137(3), DOI: 10.1061/(ASCE)WR.1943-5452.0000106, 2011.
- Coopersmith, E. J., B. Minsker, and P. Montagna, "Understanding and Forecasting Hypoxia Using Machine Learning Algorithms," *Journal of Hydroinformatics*, 13(1), 64-80, doi:10.2166/hydro.2010.015, 2011.
- Singh, A., D. D. Walker, B. S. Minsker, and A. J. Valocchi, "Incorporating Subjective and Stochastic Uncertainty in an Interactive Multi-Objective Groundwater Calibration Framework," *Stochastic Environmental Research and Risk Assessment*, 24(6), 881-898, 2010.
- Babbar-Sebens, M., and B. S. Minsker, "Case-Based Micro Interactive Genetic Algorithm (CBMIGA) for Interactive Learning: Methodology and Application to Groundwater Monitoring Design," *Environmental Modelling & Software*, 25 1176e1187, doi:10.1016/j.envsoft.2010.03.027, 2010
- Hill, D. J., and B. S. Minsker, "Anomaly detection in streaming environmental sensor data: A data-driven modeling approach," *Environmental Modelling & Software*, <u>doi:10.1016/j.envsoft.2009.08.010</u>, 2009.
- Hill, D. J., B. S. Minsker, and E. Amir, "Real-Time Bayesian Anomaly Detection in Streaming Environmental Data," *Water Resources Research*, 45, W00D28, doi:10.1029/2008WR006956, 2009.
- Singh, A., B. S. Minsker, and P. Bajcsy, "Image-Based Machine Learning for Reduction of User-Fatigue in an Interactive Model Calibration System," *Journal of Computing in Civil Engineering*,

http://dx.doi.org/10.1061/(ASCE)CP.1943-5487.0000026, 2009.

- Demissie, Yonas K., Albert J. Valocchi, Barbara S. Minsker, Barbara A. Bailey, Integrating a calibrated groundwater flow model with error-correcting data-driven models to improve predictions, *Journal of Hydrology*, 364(3-4), 257-271, ISSN 0022-1694, DOI: 10.1016/j.jhydrol.2008.11.007, 2009.
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- Singh, A., and B. S. Minsker, "Uncertainty-Based Multiobjective Optimization of Groundwater Remediation Design," *Water Resources Research*, 44, W02404, doi:10.1029/2005WR004436, 2008.
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- Farrell, D. M., B. S. Minsker, D. Tcheng, D. Searsmith, J. Bohn, D. Beckman, "Data Mining To Improve Management And Reduce Costs Of Environmental Remediation, J. of Hydroinformatics, 9(2), doi:10.2166/hydro.2007.004, 107–121, 2007.
- Gopalakrishnan, G., M. C. Negri, B. S. Minsker, C. J. Werth, Monitoring subsurface contamination using tree branches, *Ground Water Monitoring and Remediation*, 27(1), 1-10, 2007.
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- Babbar, M., and B. S. Minsker, "Groundwater Remediation Design Using Multiscale Genetic Algorithms," J. of Water Resources Planning and Management, 132(5), 341-350, 2006.
- Yan, S., and B. S. Minsker, "Optimal Groundwater Remediation Design Using An Adaptive Neural Network Genetic Algorithm," *Water Resources Research*, 42, W05407, doi:10.1029/2005WR004303, 2006.
- Ren, X., and B. S. Minsker, "Which Groundwater Remediation Objective is Better, a Realistic One or a Simple One?," *J. of Water Resources Planning and Management*, *131*(5), 351-361, 2005.
- Michael, W.J., B. S. Minsker, D. Tcheng, and A. J. Valocchi, "Integrating Data Sources to Improve Hydraulic Head Predictions: A Hierarchical Machine Learning Approach," *Water Resources*

Research, 41(3), W03020 10.1029/2003WR002802, 2005.

- Espinoza, F., B. S. Minsker, and D. E. Goldberg, "Adaptive hybrid genetic algorithm for groundwater remediation design," J. of Water Resources Planning and Management, 131(1), 14-24, 2005.
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- Reed, P. and B. S. Minsker, "Striking the Balance: Long Term Groundwater Monitoring Design for Multiple, Conflicting Objectives." *Journal of Water Resources and Planning Management*, 130(2), 140-149, 2004.
- Liu, Y., and B. S. Minsker, "Full Multiscale Approach For Optimal Control Of In-Situ Bioremediation," J. of Water Resources Planning and Management, 130(1), 26-32, 2004.
- Reed, P., B. S. Minsker, and D. E. Goldberg, "Simplifying Multiobjective Optimization: An Automated Design Methodology for the Nondominated Sorted Genetic Algorithm-II." *Water Resources Research*, 39(7), 1196, doi:10.1029/2002WR001483, 2003.
- Gopalakrishnan, G., B. S. Minsker, and D. Goldberg, Optimal sampling in a noisy genetic algorithm for risk-based remediation design, *Journal of Hydroinformatics*, 5(1), 11-25, 2003.
- Liu, Y., and B. S. Minsker, Efficient multiscale methods for optimal in situ bioremediation design, J. of Water Resources Planning and Management, 128(3), 227-236, 2002.
- Liu, Y., B. S. Minsker, and F. Saied, A one-way multiscale method for optimal in situ bioremediation design, *J. of Water Resources Planning and Management*, *127*(2), 130-139, 2001.
- Reed, P., B. Minsker, and D. Goldberg, A multiobjective approach to cost effective long-term groundwater monitoring using an elitist nondominated sorted genetic algorithm with historical data, Invited paper, *Journal of Hydroinformatics*, *3*, 71-89, 2001.
- Reed, P., B. Minsker, and A. J. Valocchi, Cost effective long-term monitoring design using a genetic algorithm and global mass interpolation, *Water Resources Research*, *36*(12), 3731-3741, 2000.
- Reed, P., B. S. Minsker, and D. E. Goldberg, Designing a competent simple genetic algorithm for search and optimization, *Water Resources Research*, *36*(12), 3757-3761, 2000.
- Smalley, J. B., B. S. Minsker, and D. E. Goldberg, Risk-based in situ bioremediation design using a noisy genetic algorithm, *Water Resources Research*, 36(20), 3043-3052, 2000.
- Kosegi, J. M., B. S. Minsker, and D. E. Dougherty, A feasibility study of thermal in situ bioremediation of dense nonaqueous phase liquids, *Journal of Environmental Engineering*, *126*(7), 601-610, 2000.
- Minsker, B. S., and C. A. Shoemaker, Quantifying the effects of uncertainty on optimal groundwater bioremediation policies, *Water Resources Research*, 124(12), 3615-3625, 1998.
- Minsker, B. S., and C. A. Shoemaker, Dynamic optimal control of in situ bioremediation, *Journal of Water Resources Planning and Management*, 124(3), 149-161, 1998.
- Minsker, B.S., and C.A. Shoemaker, Computational issues associated with optimal design of in situ bioremediation, *Journal of Water Resources Planning and Management*, 124(1), 39-46, 1998.
- Minsker, B.S., and C.A. Shoemaker, "Differentiating a finite element biodegradation model for optimal control," *Water Resources Research*, 32(1), 187-192, 1996.

COURSES DEVELOPED AND TAUGHT

CEE 201: Planning, Design, and Management of Civil Engineering Systems. Introduction to the formulation and solution of civil engineering systems problems. Major topics are engineering economics, mathematical modeling, and optimization.

CEE 434: Environmental Systems Analysis I. Examination of principles of environmental engineering design: applications to mathematical methods, including single and multi-objective programming, to environmental systems; economic analysis, including benefit-cost; and policy and management strategies.

CEE 498 BSM: Environmental Risk Assessment and Management. (*New course development*) Risk assessment methods are introduced and issues associated with managing risk are discussed. The course is taught in a case study format, focusing on a variety of environmental case studies such as air pollution, climate change, drinking water, hazardous waste storage, transport and disposal, and Superfund remediation.

CEE 535: Environmental Systems Analysis II, Risk and Uncertainty in Environmental and Water Resources Decision Making. Exploration of the fundamental concepts of uncertainty, risk, and reliability as applied to environmental and water resources systems.

CEE 598 OS: Optimization Methods for Engineering Design. (*New course development*) Optimization models have been shown to be useful tools for aiding engineering design in many fields. This course focuses on methods for applying nonlinear optimization to engineering design, with a practical, applications-oriented perspective. The course is intended to serve students from all areas of engineering and does not assume prior knowledge in any particular application area. Students complete a project applying one of the methods to a problem in their own field.

CEE 592/UP 576/NRES 592: Sustainable Urban Systems. (*New course development*) This course explores fundamental concepts of sustainability and resilience as applied to urban infrastructure systems, including the complex interactions among human, engineered, and natural systems. The course is taught from a project-based format; focusing on problems proposed by external government and non-governmental organization partners.

ENG 498 AL1: Authentic Leadership. (*New course development*) Positive collective vision and movement to transform conflict, risk and uncertainty into progress and success. Mindfulness and resilience skills to improve creativity, productivity and reduce stress. Adaptive change to address risk and uncertainty. Case study through active participation in a university or non-university group activity.

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	# of PI's & Lead PI if not Minsker
1997-1998	Computationally-Efficient	University of Illinois	\$13,973	1
	Management Tools for	Campus Research Board		
	Groundwater Remediation			
	Design			
1998-2004	Research and Educational	National Science	\$246,868	1
	Advances in Optimal	Foundation CAREER		
	Groundwater Remediation	Program		
	Design	_		
1998-2000	Cost-Effective Monitoring	Illinois Water Resources	\$52,152	2
	Design for Intrinsic	Center and the United		
	Bioremediation	States Geological Survey		

RESEARCH FUNDING: Principal Investigator (PI) or co-PI on \$23.7 million in funding.

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	# of PI's & Lead PI if not Minsker
1998-1999	Survey of Models Relevant to Sediment Contamination in Water Bodies	E.I. DuPont de Nemours and Company	\$15,000	5
1999-2002	Cost-Effective Risk Based Corrective Action Design for Contaminated Groundwater	National Science Foundation	\$212,977	1
1999-2000	Efficient Parallelization of a Risk Management Model on the NT Supercluster	National Center for Supercomputing Applications UIUC Faculty Fellows Program	\$25,805	1
2000-2001	Cost-Effective Risk Management of Groundwater Contamination	U.S. Army Research Office Young Investigator Program	\$50,000	1
2000-2003	Cost-Effective Risk Management of Groundwater Contamination	State Matching Funds Program	\$28,302	1
2000-2005	Cost-Effect Risk Management of Groundwater Contamination	Presidential Early Career Award for Scientists and Engineers (PECASE)	\$500,000	1
2001-2002	Knowledge Integration for Long-Term Monitoring, Operations, and Stewardship	Argonne National Laboratory	\$27,639	2
2002-2007	A New Framework for Adaptive Sampling and Analysis During Long-Term Monitoring and Remedial Action Management	U. S. Department of Energy	\$540,000	3
2002-2003	Upscaling of Flows in Heterogeneous Porous Media Using Machine Learning	University of Illinois Research Board	\$8,597	3
2003-2004	Technology Transfer of Evolutionary Multiobjective Optimization Software, with Demonstration for Optimizing Long-Term Groundwater Monitoring	Office of Naval Research through Technology, Research, Education, and Commercialization Center	\$60,334	1
2003	Gift	BP Group Environmental Management Company	\$2,500	1
2004-2005	A Collaborative Framework for Integrated Hazard Management	Office of Naval Research through Technology, Research, Education, and Commercialization Center	\$173,802	1
2004-2007	Cyberinfrastructure to Support Collaborative Knowledge Synthesis, with Environmental Test Beds	National Center for Supercomputing Applications	\$555,171	1

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	# of PI's & Lead PI if not Minsker
2004-2006	Cyberinfrastructure and	National Science	\$89,958	3,
	Management System Development for a National	Foundation		Wayland Ebeart
	CLEANER Network			Lineart
2005-2006	A Collaborative Framework	Office of Naval Research	\$135,643	1
	for Integrated Hazard	through Technology,		
	Management	Commercialization Center		
2005-2010	Coalition for Creation of	National Science	\$3,000,000	5
	CLEANER/WATERS	Foundation		
2005 2006	Network Project Office	I la inconsitan of Illinois	\$25,000	5
2005-2006	On-Demand and Interactive	Campus Research Board	\$25,000	5
	Environmental and Water	Campus Research Doard		
	Resources Engineering			
2005 2010	Computing	NL d'a mal Calaman	¢ 400 000	
2005-2010	An Environmental Information System for	Foundation	\$400,000	3
	Hypoxia in Corpus	1 oundution		
	Christi Bay: A WATERS			
2006 2007	Network Testbed		¢122.295	1
2006-2007	Observation and Model-	through Technology	\$122,285	1
	based Decisions	Research, Education, and		
		Commercialization Center		
2008-2010	Science Plan of the WATer	National Science	\$750,000	5, Jeff
	Systems Network (WATERS	Foundation		UCSB
	Network)			COSE
2010-11	NSF Workshop on Creating	National Science	\$50,000	2, Stanley
	Scientific Software	Foundation		Ahalt,
	Sustained Cyberinfrastructure			UNC
	Achievement and Excellence			
2010-11	Project Catfish	ADM Inc.	\$374,911	3
2011-12	EAGER: Launch of a Water	National Science	\$300,000	4, Stanley
	(WSSI)	Foundation		Analt, UNC
2008-2014	Virtual Observatory for	Institute for Advanced	\$734,546	3
	Sustainability of Intensively	Computing Applications		
	Managed Environmental	and Technologies		
2010-13	Digital Urban Informatics:	Microsoft Research Inc	\$400.000	2
2010-13	Computational Innovation for	wherosoft Research, me.	\$+00,000	2
	Sustainable and Optimal			
	Urban Stormwater			
2010-13	Management	John Deere Inc	\$282.052	3
2010-13	of Agronomic Decision		φ202,732	5
	Support Using a Field			
	Readiness Virtual Sensor			

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	# of PI's & Lead PI if not Minsker
2011-14	Data Mining and Informatics Applied to Great Lakes Environmental Indices	Illinois-Indiana Seagrant	\$567,734	2
2012-13	Conceptualization of a Water Science Software Institute	National Science Foundation	\$729,686	4, Stanley Ahalt, UNC
2013-15	Animated Chicago Area Waterways Analysis System	Metropolitan Water Reclamation District of Greater Chicago	\$606,851	4
2013-15	Real-Time Water Modeling and Decision Support Framework	Microsoft Research, Inc.	\$240,000 (gift)	3
2013-16	Collaborative Research: CyberSEES: Type 2: A New Framework for Crowd- Sourced Green Infrastructure Design	National Science Foundation	\$1,144,600	8
2013-18	CIF21 DIBBs – Brown Dog	National Science Foundation	\$10,519,716	5 (McHenry)
Total Funding			\$23,729,632	

STUDENTS

	Year			
PhD Thesis	Granted/		Source of	Current
Students	Expected	Thesis Title	Support	Employment
Kangjae Lee	2017	Impacts of Green	UrbInSuRe Center,	Graduate research
		Infrastructure	from U of Illinois	assistant
		Features on Human	College of	
		Health and Wellbeing	Engineering	
Ankit Rai	2017	Big Data Methods for	National Science	Graduate research
		Green Infrastructure	Foundation	assistant
		Design		
Bardia Heidari	2017	Designing Green	National Science	Graduate research
Haratmeh		Infrastructure to	Foundation	assistant
		Maximize Co-		
		Benefits		
Tingting Zhao	2017	Real-time	Microsoft	Graduate research
		Optimization During	Research	assistant
		Floods and Droughts		
Samuel Rivera	2016	Socially Aware Green	NTingSF Graduate	Graduate research
		Infrastructure Design	Research Fellow,	assistant
			NSF research grant	
Wenzhao Xu	2016	Adaptive Observation	Illinois-Indiana	Graduate research
		of Great Lakes	Seagrant	assistant
		Coastal Margins with		

		Mobile Sensing		
Erhu Du	2016	Real-Time Water	Fellowship and	Graduate research
		Markets for Drought	Microsoft	assistant
			Research	
Evan	2013	Data-Driven	John Deere Inc.	Post-doctoral
Coopersmith		Modeling of		research associate,
		Hydroclimatic Trends		USDA Hydrology
		Multi Scale Date		Songing Laboratory
		Integration and		Sensing Laboratory
		Decision Support		
Andrea Zimmer	2013	Hydraulic Modeling	Fellowships and	Consultant
		and Evolutionary	Metropolitan	
		Optimization for	Water Reclamation	
		Enhanced Real-Time	District of Greater	
		Decision Support of	Chicago	
		Combined Sewer		
		Overflows		
Gayathri	2007	Subsurface	Department of	Research Scientist,
Gopalakrishnan		Monitoring With	Energy	Space Science
Abbiebelt Circh	2007	I rees	Department of	Institute Monogon Colifornia
Admisnek Singn	2007	Modeling Using	Eporgy	Manager - California
		Interactive	Lifergy	Senior Water
		Evolutionary		Resources Engineer
		Optimization		INTERA Inc.
David Hill	2007	Machine Learning for	National Science	Associate Professor,
		Environmental	Foundation, Office	Thompson Rivers
		Monitoring and	of Naval Research	University
		Modeling		
Meghna Babbar	2006	Interactive Genetic	Department of	Associate Professor,
		Algorithm: A Human-	Energy	Oregon State
		Computer Framework		University
		for Improving		
		Monitoring Designs		
Shenquan Yan	2006	An Adaptive Meta-	Army Research	Developer Microsoft
	2000	Model Approach to	Office	Inc.
		Optimizing		inc.
		Groundwater		
		Remediation Design		
		with Genetic		
		Algorithms		
Felipe Espinoza	2003	A Self-Adaptive	National Science	Completed National
		Hybrid Genetic	Foundation, Army	Research Council
		Algorithm For	Research Office	post-doctoral
		Optimal Groundwater		tellow, US EPA,
		Remediation Design		now consulting in Chile
Patrick Road	2002	Striking the Balance	ΙΙς έρλ στλρ	Professor Cornell
I alliek Keeu	2002	Burking the Dalahee.	ODELASIAN	r roressor, Comen

		Long-Term	fellowship	University
		Groundwater		
		Monitoring Design		
		for Multiple		
		Conflicting		
		Objectives		
Yong Liu	2001	Multiscale Approach	National Science	Senior Software
		to Optimal Control of	Foundation	Development
		In-Situ		Engineer, Microsoft
		Bioremediation of		Inc.
		Groundwater		

	Year			
MS Thesis	Granted/		Source of	Current
Students	Expected	Thesis Title	Support	Employment
Jayant Ahalawat	2016	Predicting Crop Growth by Integrating Hydrologic	John Deere Inc.	Graduate research assistant
		and Agricultural Data		
Tingting Zhao	2014	Enabling Real-Time	Microsoft	Graduate research
		Water Decision Support	Research	assistant
		Services Using Model as a Service		
Ankit Rai	2013	Green Stormwater	National Science	Graduate research
		Infrastructure Design for	Foundation	assistant
		Human and Ecosystem		
Course 1 Discours	2012	Wellbeing	Delle seeling and	Care la sta anna santa
Samuel Rivera	2013	I racking Sustainability	Fellowship and	Graduate research
		Mining	Board	assistant
Tristan Wietsma	2012	Adaptive Sampling for	Institute for	Financial analyst
	-	Multiscale Environmental	Advanced	
		Sensing Networks	Computing	
			Applications &	
			Technologies	
Wesley Dawsey	2011	Bayesian Belief Networks	Office of Naval	Consultant
		for Water Security	Research, EPA	
			Technical	
			Assistance	
			Center, Illinois	
			State Water	
			Survey	
Indu Chinta	2010	Model Fusion for	National Science	Indian
		Improving Hypoxia	Foundation	government
		Forecasts: A Study of		
		Scenario Modeling		
Brian Payne	2011	Assessing and Improving	National Science	Consultant
		Watershed Sustainability:	Foundation,	Constraint

		A Model-Based Approach	University of	
			Illinois	
Andrew Collier	2008	Real-Time Environmental	Office of Naval	Consultant
		Visualization for Diverse	Research	
		User Communities		
Evan	2008	Statistical and Machine	National Science	Graduate research
Coopersmith		Learning Approaches to	Foundation	assistant
		Understanding Hypoxia in		
		Corpus Christi Bay		
Aniruddha	2005	Preliminary	National Science	Consultant.
Bhagwat		Cyberinfrastructure Needs	Foundation	Corollo Engineers
		Assessment and		
		Technology Review for		
		CLEANER		
Matthew	2005	Constraint Handling in	Army Research	Consultant
7avislak	2005	Groundwater Remediation	Office	Consultant
Zavisiak		Design with Genetic	Onice	
		Algorithms		
Marcia Haves	2005	Evaluation of Advanced	Army Desearch	Concultant
Watera Hayes	2005	Constin Algorithms	Office	Consultant
		Applied to Groundwater	Office	
		Applied to Groundwater		
Dama Eama 11	2004	Remediation Design	Englished a	Care land a star land
Dara Farrell	2004	Data Mining to Improve	Fulbright	Graduate student,
		Management and Reduce	Fellowship	University of
		Costs Associated with		Washington
		Environmental		
	2004	Remediation		
Eva Sinha	2004	Multiscale Island	Army Research	Consultant, Black
		Injection Genetic	Office	and Veatch
		Algorithms for		
		Groundwater Remediation		
Xiaolin Ren	2003	Which Groundwater	Army Research	Unknown
		Remediation Objective Is	Office	
		Better, A Realistic One Or		
		A Simple One?		
Abhishek Singh	2003	Uncertainty Based Multi-	Army Research	INTERA, Inc.
		Objective Optimization	Office	
		Of Groundwater		
		Remediation Design		
Rachel Arst	2002	Which are Better,	Army Research	Unknown
		Probabalistic Model-	Office	
		Building Genetic		
		Algorithms (PMBGAs) or		
		Simple Genetic		
		Algorithms (SGAs)? A		
		Comparison for an		
		Optimal Groundwater		
		Remediation Design		
		Problem		
Meghna Babbar	2002	Multiscale Parallel	National Science	Associate

		Genetic Algorithms for	Foundation	Professor, Oregon
		Optimal Groundwater		State University
		Remediation Design		
William Michael	2002	Integrating Data Sources	Fellowships and	Caterpillar Inc.
		to Improve Long-Term	Argonne	
		Monitoring and	National Lab	
		Management: A		
		Hierarchical Machine		
		Learning Approach		
Gayathri	2001	Optimal Sampling in a	National Science	Research
Gopalakrishnan		Noisy Genetic Algorithm	Foundation	Scientist, Space
•		for Risk-Based		Science Institute
		Remediation Design		
Patrick Reed	1999	Cost Effective Long-Term	US EPA STAR	Professor, Cornell
(co-advisor		Groundwater Monitoring	Fellowship	University
Albert Valocchi)		Design Using a Genetic		(Effective Fall
		Algorithm and Global		2013)
		Mass Interpolation		
J. Bryan	1998	Risk-Based In Situ	UIUC Research	Unknown
Smalley		Bioremediation Design	Board	
-		Using a Noisy Genetic		
		Algorithm		
Jeremy Kosegi	1998	A Feasibility Study of	UIUC Research	Consultant
		Thermal In Situ	Board	
		Bioremediation of Dense		
		Nonaqueous Phase		
		Liquids		