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Meeting Date: December 9, 2020

Staff Contact: Elizabeth Anderson, Chief Planning Officer

**TITLE: C-20-34 - Appointments to the Technical Customer Advisory Committee****ACTION: Recommend Approval****SUMMARY:**

The Technical Customer Advisory Committee (TCAC) was established in 2006 to assist in and facilitate public review and discussion of Water Authority policies, plans and programs. The TCAC was established as a professional/ technical group of volunteers to represent the five core functional areas of operating a water and wastewater utility. This group is intended to provide outside expertise in best practices and private sector applications for continuous business improvement.

At the October 2020 meeting, the Chair announced that there was a vacancy on the committee in the category of Resource Economics and that an online application was posted for customers who may be interested in serving on this technical committee. Board members were informed that if they know of anyone interested that they should apply on the Water Authority's website. In addition, a notice was placed on the Water Authority website's front page.

Qualified nominations were compiled and forwarded to the Chair, who through this communication is forwarding the nomination to the Board for confirmation. Jingjing Wang is recommended for confirmation. Below is a summary of the nominees' background.

Jingjing Wang

Ms. Wang is an Assistant Professor with the Department of Economics at the University of New Mexico where she has worked for the past eight years. Ms. Wang has also been the Affiliated Faculty Member for the Water Resources Program for the University of New Mexico for seven years. Ms. Wang has her B.E. in Environmental Engineering from Tsinghua University (China), her M.S. in Environmental Science from the University of California – Riverside, and her Ph.D. in Environmental and Natural Resource Economics from the University of California – Riverside.

A total of one applicant was received through the online application.

**CURRENT MEMBERS:**

Member	Category	Term	Term Expiration
Robert Fowlie	Water System Engineering	1	6/2021
Erwin Melis	Water Resource Planning	1	6/2021

Debora Dixon	Financial/Business Management	1	05/2022
Paul van Gulick	Water System Engineering	1	5/2022
Tess Houle	Landscape Architecture	1	05/2022
Melissa Armijo	Customer Service / Stakeholder Engagement	2	5/2021
Amy Miller	Non-profit Water Management Advocacy/Education	2	8/2021
Ron Schwarzwald	Water System Operations	1	6/2020

**FISCAL IMPACT:**

None

**University of New Mexico  
College of Arts and Sciences  
Faculty Vitae**

**Jingjing Wang**

**Economics**

**September 2020**

**Educational History**

Ph.D., 2012, University of California at Riverside, Environmental and Natural Resource Economics and Policy.

M.S., 2011, University of California at Riverside, Environmental Science.

B.E., 2007, Tsinghua University (China), Environmental Engineering.

**Employment History**

Principal positions

*Assistant Professor*, Department of Economics 2012–Present  
University of New Mexico  
Albuquerque, NM 87131

Concurrent/Temporary Appointments

*Affiliated Faculty Member*, Water Resources Program 2013–Present  
University of New Mexico  
Albuquerque, NM 87131

*Senior Supply Chain Analyst*, Smithfield Foods 2017–2019  
Smithfield, VA 23430

*Senior Fellow*, Robert Wood Johnson Foundation for Health Policy at UNM 2012–2017  
University of New Mexico  
Albuquerque, NM 87131

**Professional Recognition and Honors**

- University of New Mexico Provost Challenge for Excellence & Equity, Expanding Course-Based Undergraduate Research Experiences (ECURE) Fellowship, Faculty Fellow, 2020-2021
- University of New Mexico Provost Challenge for Excellence & Equity, Student Experience Project (SEP) Fellowship, Implementation Faculty Fellow, 2020-2021
- University of New Mexico Academic Affairs General Education Teaching Fellow, 2019-2020
- Women in STEM Faculty Development Award, University of New Mexico, 2016
- Outstanding Reviewer Award, 2013, American Society of Civil Engineers (ASCE), Journal of Water Resources Planning and Management.

**RESEARCH**

**Research Funding**

1. **Jingjing Wang (PI)** and Thomas Turner (Co-PI). *Integrated ecological-economic modeling for evaluating sources and impacts of nitrogen surplus in arid-land ecosystems: a pilot study of the Rio Grande*. University of New Mexico Sustainable Water Resources Grand Challenge Seed Grant, 01/13/2020 – 12/12/2020, \$9,928.
2. **Jingjing Wang (PI)**. *Integrated Modeling and Policy Evaluation for Sustainable Food, Energy, and Water Systems: A Case Study of the Dairy Industry in New Mexico*. University of New Mexico Women in STEM Faculty Development Award, 08/01/2016 – 07/31/2017, \$8,684.
3. Heather Himmelberger (PI), Sandi Blanton (Co-PI), Darcy Bushnell (Co-PI), Janie Chermak (Co-PI), Jennifer Thacher (Co-PI), **Jingjing Wang (Co-PI)**. *Identifying and Evaluating Opportunities for Reducing Variability of Utility Revenues*. Water Research Foundation, 01/01/15 – 11/20/2015, \$278,000 (UNM Economics \$60,840; Wang \$30,000).
4. **Jingjing Wang (PI)**. *Policy alternatives for controlling nitrate pollution from New Mexico's dairies*. New Mexico Water Resources Research Institute, 07/01/2014 – 06/30/2015, \$29,978.

#### Articles in Refereed Journals (\* denotes students under my supervision)

Ali, M.\*, **J. Wang**, H. Himmelberger, J. Thacher, 2020. An Economic Perspective on Fiscal Sustainability of U.S. Water Utilities: What We Know and Think We Know. Forthcoming at *Water Economics and Policy*.

Li, Q., **J. Wang**, X. Wang, and Y. Wang, 2020. The Impact of Alternative Policies on Livestock Farmers' Willingness to Recycle Manure: Evidence from Central China. *China Agricultural Economic Review*, 12(4), 583-594.

Y. Wang, **J. Wang**, and X. Wang, 2020. COVID-19, Supply Chain Disruption and China Hog Market: A Dynamic Analysis. *China Agricultural Economic Review*, 12(3), 427-443.

Joshi, J.\* and **Wang, J.**, 2018. Manure Management Coupled with Bioenergy Production: An Environmental and Economic Assessment of Large Dairies in New Mexico. *Energy Economics*, 74, 197-207.

Mortensen, J.G., González-Pinzón, R., Dahm, C.N., **Wang, J.**, Zeglin, L.H. and Van Horn, D.J., 2016. Advancing the Food-Energy-Water Nexus: Closing Nutrient Loops in Arid River Corridors. *Environmental Science & Technology*, 50(16), 8485–8496.

**Wang, J.** and K.A. Baerenklau, 2015. How Inefficient Are Nutrient Application Limits? A Dynamic Analysis of Groundwater Nitrate Pollution from CAFOs. *Applied Economic Perspectives and Policy*, 37(1), 130–150.

Raheem, N., S. Archambault, E. Arellano, M. Gonzalez, D. Kopp, J. Rivera, S. Guldán, K. Boykin, C. Oldham, A. Valdez, S. Colt, E. Lamadrid, **J. Wang**, J. Price, J. Goldstein, P. Arnold, S. Martin, E. Dingwell, 2015. A Framework for Assessing Ecosystem Services in Acequia Irrigation Communities of the Upper Río Grande Watershed. *WIREs Water*, 2(5), 559–575.

Liu, B., Y. Wang, **J. Wang**, X. Wu, S. Zhang, 2015. Is China the Price Taker in Soybean Futures? *China Agricultural Economic Review*, 7(3), 389–404.

**Wang, J.** and K.A. Baerenklau, 2014. Crop Response Functions Integrating Water, Nitrogen, and Salinity. *Agricultural Water Management*, 139, 17–30.

### **Articles Appearing in Chapters in Edited Volumes**

Baerenklau, K.A., T.P. Tomich, S. Daroub, V.R. Haden, C. Kling, T. Lang, C.-Y. Lin, C. Mitterhofer, D. Parker, T. Rosenstock, K. Schwabe, and **J. Wang**, 2016. Responses: Policies and Institutions. Chapter 8 in The California Nitrogen Assessment: Challenges and Solutions for People, Agriculture, and the Environment. T.P. Tomich, S.B. Brodt, R.A. Dahlgren, and K.M. Scow (eds.). University of California Press.

Baerenklau, K.A. and **J. Wang**, 2015. Chapter 17: Model-Based Regulation of Nonpoint Source Emissions. In Handbook of Water Economics. Editors: A. Dinar and K. Schwabe. Edward Elgar.

### **Peer-reviewed Reports**

**Wang, J.** and J.R. Joshi, 2015. Exploring Policy Alternatives for Controlling Nitrate Pollution from New Mexico’s Dairies. Technical Report 369, New Mexico Water Resources Research Institute.

### **Works in Progress**

Is Less Always More? Conservation, Efficiency and Water Education Programs (with J. Chermak) R&R at *Ecological Economics*.

COVID-19 and Financial Market Efficiency: Evidence from an Entropy-based Analysis (with X. Wang). Under review at *Finance Research Letters*.

External Shocks and Chaotic Commodity Cycle: The Case of COVID-19 and China’s Hog Market (with X. Wang). Under review at *American Journal of Agricultural Economics*.

Refilling the Salton Sea to Improve Public Health? A Hydro-Economic Analysis (with B. Jones and J. Fleck)

Incentivize Enhanced Natural Attenuation to Reduce Nitrogen Pollution.

Believe in Climate Change or Not? Evidence from Commodity Derivatives Markets (with X. Wang)

Climate Variability and Urban Water Use in Albuquerque, New Mexico (with J. Chermak)

### **Invited or Refereed Abstracts and/or Presentations at Professional Meetings:**

*Advancing the food-energy-water nexus: Closing nutrient loops in arid river corridors*, Mortensen, J., R. González-Pinzón (presenter), C. N. Dahm, J. Wang, L. Zeglin, and D. Van Horn, AGU Fall Meeting, San Francisco, CA, December 12-16, 2016.

*Dairy Manure Management Coupled with Renewable Energy Production: An Environmental and Economic Assessment of Large Dairies in the Arid Southwest*, Janak Joshi (presenter) and Jingjing Wang, Western Forest Economists Meeting, Seattle, WA, May 3-4, 2016.

*Dairy Manure Management Coupled with Renewable Energy Production: An Environmental and Economic Assessment of Large Dairies in the Arid Southwest*, Janak Joshi (poster presenter) and Jingjing Wang, 6<sup>th</sup> Annual Pacific Northwest Water Research Symposium, Corvallis, OR, April 18-19, 2016.

*The Effect of Lawn Watering Class on Residential Water Demand: The Case of Albuquerque, New Mexico*, Jingjing Wang (presenter) and Janie Chermak, American Water Resources Association Spring Specialty Conference on Water for Urban Areas: Managing Risks and Building Resiliency, Los Angeles, CA, March 30-April 1, 2015.

*The Effect of Lawn Watering Class on Residential Water Demand: The Case of Albuquerque, New Mexico*, Jingjing Wang (presenter) and Janie Chermak, 84<sup>th</sup> Southern Economic Association Annual Conference, Atlanta, GA, November 22-24, 2014.

*Integrated Environmental and Economic Assessment of Using Dairy Waste for Algae Bio-Energy Production in New Mexico*, Janak Joshi (poster presenter) and Jingjing Wang, 59<sup>th</sup> Annual New Mexico Water Conference, Santa Fe, NM, November 18-19, 2014.

*Integrated Environmental and Economic Assessment of Using Dairy Waste for Algae Bio-Energy Production in New Mexico*, Janak Joshi (poster presenter) and Jingjing Wang, New Mexico Academy of Science Research Symposium, Albuquerque, NM, November 1, 2014.

*Enhancing Ecosystem Services for Reducing Groundwater Pollution: A Policy Perspective*, Jingjing Wang (presenter), Invited Departmental Seminar at Arizona State University, Mesa, AZ, April 11, 2014.

*Evaluating Ecosystem Services for Reducing Groundwater Pollution: Role of Denitrification in the Subsurface Environment*, Jingjing Wang (presenter), American Geophysical Union fall meeting, San Francisco, CA, December 9-13, 2013.

*Evaluating Ecosystem Services for Reducing Groundwater Pollution: Role of Denitrification in the Subsurface Environment*, Jingjing Wang (presenter), Heartland Environmental and Resource Economics Workshop at Illinois, Urbana-Champaign, IL, November 2-3, 2013.

*Control of Groundwater Pollution from Animal Feeding Operations: A Farm-Level Dynamic Model for Policy Analysis (Invited)*, Jingjing Wang (presenter) and Kenneth Baerenklau, American Geophysical Union Fall Meeting, San Francisco, CA, December 6, 2012.

*Evaluating Pollution Control Policies Using a Farm-level Dynamic Model*, Jingjing Wang (presenter) and Kenneth Baerenklau, AAEA Annual Meeting, Seattle, WA, August 14, 2012.

*Evaluating Pollution Control Policies Using a Farm-level Dynamic Model*, Jingjing Wang (poster presenter) and Kenneth Baerenklau, 2nd Annual AERE Summer Conference, Asheville, TN, June 4-5, 2012.

### **Contributed (un-refereed) Abstracts and/or Oral Presentations:**

*Trade-offs, Heterogeneity and Efficiency*, Research Spotlight Forum on Sciences & Decision Making, Albuquerque, NM, March 10, 2020.

*The Economics of Water and Fire: An Optimal Control Perspective*, University of New Mexico Annual Resilience Colloquium, Albuquerque, NM, May 10, 2016.

*Wildfires and Water Supply Sustainability*, 7th Informal UC Davis Water Management Workshop, Davis, CA, December 14-15, 2013.

*Evaluating Ecosystem Services in Irrigated Agriculture*, New Mexico EPSCoR Workshop on Acequia Ecosystem Services and Valuation, Embudo, NM, July 19-21, 2013.

*Overview of research projects*, National Advisory Board Meeting (RWJF), Albuquerque, NM, April 26, 2013.

*Panel discussion on water resources management and public policy*, NSF Tri-State EPSCoR Climate Change Workshop, Las Vegas, NV, March 27-28, 2013.

## **TEACHING**

### **Doctoral Advisement**

#### Dissertation committee chair

1. Janak Joshi, Ph.D. in Economics, co-chaired with Janie Chermak, graduated in 2018.

#### Dissertation committee member

1. Jeff Felardo, Ph.D. in Economics, graduated in Summer 2013, “Temporal and spatial analysis of forest management: a case study of Kam Cha I, Thailand.”
2. Michael O’Donnell, Ph.D. in Economics, graduated in Spring 2018
3. Samrat Kunwar, Ph.D. in Economics, graduated in Spring 2019
4. Na Lu, Ph.D. in Economics, graduated in Fall 2019
5. Mohammad Mashiur Rahman, Ph.D. in Economics, expect to graduate in 2021

#### Field-paper committee chair

1. Suraj Ghimire, Multilevel Assessments of Contribution of Livestock Manure to Nitrogen Budget in Arid-land Ecosystems: The Case of Dairies in New Mexico

#### Field-paper committee member

1. Michael O'Donnell, Ph.D. in Economics, "Willingness to Pay for Non-Consumptive Wildlife Watching: Results from Three Rounds of the National Survey of Fishing, Hunting and Wildlife-Associated Recreation." Presented on April 27, 2015.
2. Samrat Kunwar, Ph.D. in Economics, "Assessing the impact of climate change on farmland values in Nepal: A Ricardian Approach" Presented on September 19, 2016
3. Na Lu, Ph.D. in Economics, "Is Ozone Pollution Affecting Human Health in Rural America? Evidence from New Mexico" Presented on May 10, 2017

#### Research advisor

1. Janak Raj Joshi, Graduate Research Assistant for two funded projects: "Integrated modeling and Policy Evaluation for Sustainable Food, Energy and Water Systems: A Case Study of the Dairy Industry in New Mexico"; "Policy alternatives for controlling nitrate pollution from New Mexico's dairies."
2. Mohammad Ali, Graduate Research Assistant for a funded project "Identifying and Evaluating Opportunities for Reducing Variability of Utility Revenues."
3. Suraj Ghimire, Graduate Research Assistant for a funded project "Integrated ecological-economic modeling for evaluating sources and impacts of nitrogen surplus in arid-land ecosystems: a pilot study of the Rio Grande."

#### **Master's Advisement**

##### Degree committee chair

1. Nancy McDuffie, Master of Water Resources, graduated in fall 2020, "Understanding Trends in the New Mexico Dairy Industry, and Accounting for Direct and Indirect Water Use in Dairy Production."

##### Degree committee member

1. Schuyler Smith, Master of Water Resources, graduated in summer 2015, "Understanding Trends in the New Mexico Dairy Industry, and Accounting for Direct and Indirect Water Use in Dairy Production."
2. Bishal Raj Khanal, Master of Economics, graduated in summer 2020, "Assessing Environmental Impacts of Urbanization in Siddharthanagar Nepal."

#### **Classroom Teaching**

Year	Semester	Course Name	Course #	# of students
2020	Spring	Natural Resource Economics	ECON 343	11
2020	Spring	Introductory Microeconomics	ECON 2120	30
2017	Spring	Water Resources II - Models	ECON 545	14
2016	Spring	Water Resources II - Models	ECON 545	12
2016	Spring	Independent Study	ECON 551	2
2016	Spring	Professional Project	WR 598	1
2015	Fall	Mathematical Tools and Economic Models	ECON 504	16
2015	Fall	Introductory Microeconomics	ECON 106	126



2015	Spring	Topics in Environmental, Resource, and Ecological Economics	ECON 542	12
2015	Spring	Topics in Environmental and Natural Resource Economics	ECON 442	6
2014	Fall	Mathematical Tools and Economic Models	ECON 504	10
2014	Fall	Introductory Microeconomics	ECON 106	155
2014	Spring	Topics in Environmental and Natural Resource Economics	ECON 442	22
2014	Spring	Natural Resource Economics	ECON 343	10
2013	Fall	Mathematical Tools and Economic Models	ECON 504	11
2013	Fall	Introductory Microeconomics	ECON 106	68
2013	Spring	Natural Resource Economics	ECON 343	23
2013	Spring	Introductory Microeconomics	ECON 106	146
2012	Fall	Mathematical Tools and Economic Models	ECON 504	11
2012	Fall	Introductory Microeconomics	ECON 106	32

### Teaching Mentoring

1. Ali, Mohammad (Ph.D. student): Spring 2015, Topics in Environmental and Natural Resource Economics
2. Chakraborty, Soumyajit (Ph.D. student): Spring 2020, Introductory Microeconomics; Fall 2020, Introductory Microeconomics
3. Cheng, Yingzhe (Ph.D. student): Fall 2012, Mathematical Tools and Economic Models
4. Curry, Lucas (Master student): Spring 2017, Water Resources II - Models
5. Franz, Lexi (M.A. student): Fall 2012, Introductory Microeconomics
6. He, Xuanhao (Ph.D. student): Fall 2015, Mathematical Tools and Economic Models
7. Joshi, Janak Raj (Ph.D. student): Fall 2013, Mathematical Tools and Economic Models & Introductory Microeconomics; Spring 2014, Topics in Environmental and Natural Resource Economics
8. Kunwar, Samrat Bikram (Ph.D. student): Spring 2014, Natural Resource Economics; Fall 2014, Introductory Microeconomics
9. Liu, Mengqi (Ph.D. student): Spring 2020, Teaching Fellow Graduate Assistant; Fall 2020, Mathematical Tools and Economic Models
10. Lu, Na (Ph.D. student): Fall 2015, Introductory Microeconomics
11. Mickschl, Chad (Master student): Spring 2016, Water Resources II - Models
12. Nepal, Naresh (Ph.D. student): Spring 2013, Natural Resource Economics & Introductory Microeconomics
13. Rahman, Mohammad Mashiur (Ph.D. student): Fall 2015, Introductory Microeconomics
14. Roy Chowdhury, Soumi (Ph.D. student): Fall 2014, Mathematical Tools and Economic Models

### SERVICE

#### Reviewing for journals

- Energy Economics: 2019 [1], 2020 [2]
- Water Economics and Policy: 2015 [1], 2020 [1]

- China Agricultural Economic Review: 2020 [1]
- Water Resources Research: 2012 [1], 2013 [2], 2014 [2], 2016 [1]
- Agricultural Water Management: 2018 [1]
- Journal of Water Resources Planning and Management: 2013 [1], 2014 [1], 2016 [1], 2017 [1], 2018 [1]
- Mitigation and Adaptation of Strategies for Global Change: 2013 [2], 2014 [2]
- Resources, Conservation & Recycling: 2014 [1], 2015 [1]
- International Journal of Production Economics: 2014 [1]
- Agronomy: 2020 [1]

### **Reviewing for conferences**

Conference Paper Review, 11th Annual Meeting of the International Water Resource Economics Consortium (Washington D.C., September 2014), reviewed five conference papers in March 2014.

### **Reviewing for state/national/international funding organizations**

Winter Research Competition Grant Proposal Review, South Asian Network for Development and Environmental Economics (SANDEE), April 2018.

Student Water Research Grant Proposal Review, New Mexico Water Resources Research Institute, September 2015.

Winter Research Competition Grant Proposal Review, South Asian Network for Development and Environmental Economics (SANDEE), October 2014.

Faculty Research Grant Panel Review, Robert Woods Johnson Foundation Center for Health Policy at UNM, Albuquerque, NM, October 2013.

Grant Panel Review, USDA's NIFA/AFRI program (Economics, Markets and Trade, and Environment grant programs), Washington D.C., September 2013.

### **University Service**

- UNM Sustainable Water Resources Grand Challenge Leadership Team, 2020-2021 (member)
- Search Committee for hiring a Research Assistant Professor (member), UNM Sustainable Water Resources Grand Challenge, Spring 2020.

### **Departmental Service**

- Graduate Committee, Department of Economics, UNM, 2015-2017 (member), 2019-2020 (member)
- Undergraduate Committee, Department of Economics, UNM, 2020-2021 (member)
- Personnel Committee, Department of Economics, UNM, 2013-2014 (member)
- Scholarship Committee, Department of Economics, UNM, Spring 2020 (member)

- Microeconomics Core Committee, Department of Economics, UNM, 2012-2013 (member), 2014-2015 (member), 2015-2016 (Chair)
- Seminar Committee, Department of Economics, UNM, 2012-2014 (Chair), 2014-2015 (member), 2019-2020 (member)