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## 2019 Nebraska Water Leaders Academy Final Report

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**2019**

# Nebraska Water Leaders Academy

## Final Report

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# Nebraska Water Leaders Academy

## *Water Futures Partnership-Nebraska*

waterleadersacademy.org

### Partner

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#### **Nebraska Environmental Trust**

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- Nebraska Bostwick Irrigation District
- Lee & Rita Orton
- Roric Paulman, Paulman Farms
- Twin Loups Irrigation District

#### **Contributing:**

- Flowserve
- North Platte Natural Resources District
- Smith Snyder & Pettit, Attorneys at Law
- Mirage Flats Irrigation District
- Sargent Irrigation District

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## 2019 Nebraska Water Leaders Academy class

**Front Row (L to R):** Ross Lawrence, JEO Consulting Group, Inc., Lincoln; Melissa Panella, Nebraska Game and Parks Commission, Lincoln; Ellen Argo, Daugherty Water for Food Global Institute, Lincoln; Lydia Hendrickson, North Platte NRD, Scottsbluff; Crystal Powers, Nebraska Water Center, Lincoln; Sue Dempsey, Nebraska Department of Health and Human Services, Lincoln; Samantha Bartz, US Bureau of Reclamation, McCook.

**Back Row (L to R):** Steve Herdzina, Lower Platte South NRD, Lincoln; Lynn Webster, Upper Niobrara White NRD, Chadron; Jim Ostdiek, Nebraska Department of Natural Resources, Lincoln; Cay Ewoldt, Nebraska Department of Environment and Energy; Wade Ellwanger, Lower Niobrara NRD, Butte; Logan Ricley, Central Nebraska Public Power and Irrigation District, Gothenburg; Jodi Kocher, Felsburg Holt & Ullevig, Lincoln; .

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## Executive Summary

Sixteen participants completed the 2019 Water Leaders Academy bringing the total number of graduates to 136 since the inception of the program in 2011. Assessments of participants' transformational leadership skills, champion of innovation skills, water knowledge, engagement with water issues, civic capacity, and entrepreneurial leadership behaviors showed significant increases over the course of the year, according to both the participants and their raters. Feedback from participants was highly positive and constructive. Academy planners are addressing participant concerns. Only minor changes are planned for the 2020 Academy curriculum. Results of the program assessment indicate that the curriculum is meeting Academy objectives. Most importantly, alumni have emerged as leaders in their communities and around the world.

## 2019 Nebraska Water Leaders Academy - Final Report

### Introduction

The effective management of Nebraska's water resources is evermore challenged by weather, climate, technology, socioeconomic trends, and regulation. Anthropogenic climate change, declining water tables and stream flows, increasing demands on freshwater, aging infrastructure, fiscal constraints, and impacts on aquatic organisms are particularly imminent water challenges in Nebraska and elsewhere (Pahl-Wostl et al., 2013; Pittock et al., 2008; USACE, 2010). Sustaining freshwater ecosystem services in the face of emerging environmental threats is widely recognized as a pressing global challenge (Pittock et al., 2013; Rockström et al., 2009, Millenium Ecosystem Assessment, 2005).

Changes in Nebraska's water-resource conditions, as well as a pervasive public desire for sound policies, starkly underscore the need for knowledgeable and skilled leaders (Burbach, et al., 2015; Lincklaen Arriëns & Wehn de Montalvo, 2013; Morton & Brown, 2011). Leadership capacity is an essential driver of water management changes (Brasier et al., 2011; Morton et al., 2011; Pahl-Wostl et al., 2011; Redekop, 2010; Taylor et al., 2012). Moreover, leadership capacity enables innovation, shared visions of a more sustainable water future, and collective success (McIntosh & Taylor, 2013).

The Nebraska State Irrigation Association (NSIA), the state's oldest water association, and its Executive Director Lee Orton addressed the need for such leadership by establishing the Nebraska Water Leaders Academy (Academy) and the nonprofit Water Futures Partnership-Nebraska in 2011 in partnership with the University of Nebraska-Lincoln (UNL). Since that time, NSIA has served as the primary sponsor and has successfully garnered funding support for the Academy from water-related businesses, private citizens, and other interests. Founding partner Diamond Plastics Corporation sponsored the first Academy and the Nebraska Environmental Trust has provided major funding support for the Academy since 2012.

The Academy is a year-long program consisting of six two-day sessions held in different communities (Lincoln, Kearney, Valentine, Scottsbluff, Omaha, and Nebraska City). There are three curricular components of the Academy: leadership, policy/law, and natural resources. Dr. Mark Burbach and Dr. Connie Reimers-Hild developed the leadership component of the Academy with major contributions from accomplished faculty and staff at UNL (See Appendix 1). Dr. Gina Matkin participates with ongoing development of the leadership curriculum and

provides input on the team projects. Leading experts in Nebraska water policy, law, and natural resources from UNL; federal, state, and local agencies; NGOs; and other entities developed curriculum in their respective fields. Academy alumni serve on the planning committee.

Academy classes have always attained the specific goal of assembling participants from Nebraska with a wide range of water resources interests and a widespread geographic distribution. Moreover, the water leadership capacity in Nebraska has grown for nine years through coordinated educational and developmental experiences. These experiences are provided by experts from various disciplines (Appendix I). In order to develop Nebraska's future water leaders, and trigger lasting change in their abilities (Geller, 1992; McCauley et al., 2010), the Academy employs a process-based curriculum with developmental experiences and opportunities to learn from these experiences (Barbuto & Etling, 2002; McCauley et al., 2010; Newman et al., 2007; Popper & Mayseless, 2007).

The objectives of the Nebraska Water Leaders Academy are:

- Develop scientific, social, and political knowledge about water and related natural resources.
- Provide training, professional presentations, and experiential learning activities that instill sound and comprehensive knowledge about efficient, economic, and beneficial uses of Nebraska's water resources.
- Develop and enhance critical thinking and leadership skills through process-based educational activities.
- Encourage and assist participants toward active involvement in water-policy issues at all levels of governance.
- Integrate multi-disciplinary educational and leadership programs to provide life-long leaders in water resources management.
- Challenge traditional paradigms about water resources and facilitate creative solutions to water-resources problems.
- Increase civic capacity and community engagement.

The Academy has graduated a total of 136 participants with a wide range of professional, geographic, and water resources backgrounds. Sixteen individuals completed the 2019 Academy. One participant dropped out when he started a new career and left the state. Table 1 lists the curriculum topics covered in the 2019 Academy.

Table 1: Curriculum topics presented by experts at the 2019 Nebraska Water Leaders Academy  
(<sup>1</sup> = Session)

<b>Leadership</b>	<b>Policy/Law</b>	<b>Resource</b>
Transformational Leadership <sup>1,2,5,6</sup>	Water Law <sup>1</sup>	Nebraska Climate/Weather <sup>1</sup>
Personality <sup>1</sup>	Nebraska Legislature <sup>1</sup>	Nebraska Geology <sup>1</sup>
Social Networking <sup>1</sup>	Water Quality in Nebraska & NDEE Programs <sup>1</sup>	Nebraska Groundwater Hydrology <sup>1</sup>
Managing Diversity & Conflict <sup>2</sup>	South Loup Watershed Management Plan <sup>2</sup>	Central Nebraska Water Issues <sup>2</sup>
Leading Innovation <sup>3</sup>	Compacts & Decrees <sup>2</sup>	Ecological Importance of the Central Platte Valley & Rainwater Basin <sup>2</sup>
Common Pool Resource Management <sup>3</sup>	Central Platte Water Projects <sup>2</sup>	People, Water & Nebraska's Ecology <sup>2</sup>
Risk Communication <sup>3</sup>	NDEQ Financial Assistance Programs <sup>3</sup>	Ecotourism – Commercial and Environmental Perspectives <sup>2</sup>
Community Capital <sup>4</sup>	Nebraska's Public Power & Irrigation Districts History <sup>4</sup>	PMNRD Flood Control & Water Quality Projects
Intersection of science and policy <sup>5</sup>	North Platte Reservoir & Irrigation System <sup>4</sup>	Omaha's Combined Sewer Separation Project <sup>3</sup>
Niobrara River Valley: Past, Present, & Future <sup>5</sup>	North Platte Basin Integrated Water System <sup>4</sup>	Omaha Wastewater Treatment & Water Production <sup>3</sup>
Involvement in Public Boards & Service Orgs <sup>6</sup>	Water Markets <sup>4</sup>	Feedlot Management for Water Protection <sup>4</sup>
Empowerment <sup>6</sup>	Panhandle NRD Projects & Programs <sup>4</sup>	Panhandle Groundwater Modeling Projects <sup>4</sup>
Motivation <sup>6</sup>	Wellhead Protection in Nebraska <sup>5</sup>	Niobrara Geology and Ecosystem <sup>5</sup>
Communicating Science to the Public <sup>6</sup>	Niobrara National Scenic River <sup>5</sup>	Niobrara River Water Issues <sup>5</sup>
Community Involvement & Leadership Opportunities <sup>6</sup>	Overview of Nitrates in Nebraska Groundwater <sup>5</sup>	
Nebraska's One Health Program <sup>6</sup>		
Next Steps – Leadership Opportunities <sup>6</sup>	Water Economics <sup>6</sup>	Future of Ag Production <sup>6</sup>
Missouri River-Past, Present, Future <sup>6</sup>		

This report summarizes the evaluation of the 2019 Academy as well as the cumulative evaluation of the Academy. Results will determine the effectiveness of the Academy in meeting its objectives, and also assist in planning the tenth Academy class in 2020.

## Program Evaluation

Program evaluation is an essential component of the Academy because it: (1) assesses the development of participants' leadership knowledge, skills, and behaviors; (2) evaluates the instructional methods used in the Academy; and (3) provides constructive feedback from participants; and guides the development of future sessions. The 2019 class evaluation consisted of session evaluations and an empirical analysis using leadership assessments performed before and after attendance (Figure 1). Participants also completed a personality inventory prior to their attendance for self-awareness purposes only. The six session evaluations gauged participants' change in knowledge levels in the areas of leadership, policy, and water issues. Participants also provided subjective feedback about the major points they learned from each session, a summary of the session experience, and other important comments they shared with the Academy planners. Evaluations enable session planners to modify and adjust future sessions, particularly with regard to topics and presenters. Feedback from participants is also being used to plan the 2020 Academy.

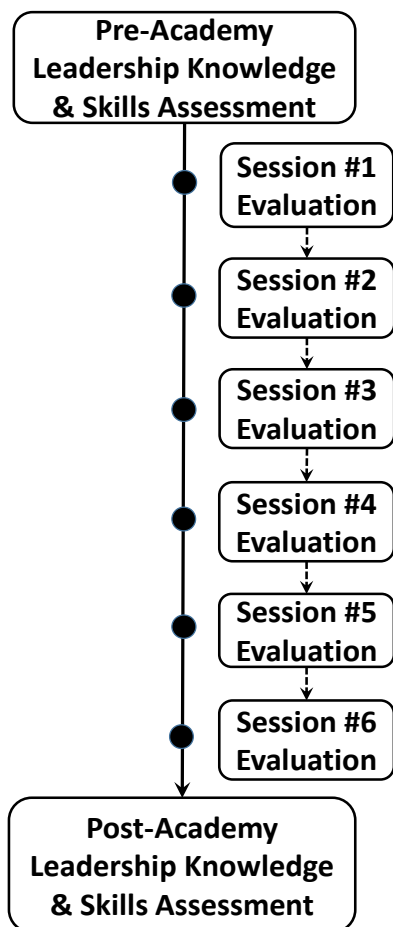


Figure 1. Flow chart of the Nebraska Water Leaders Academy program evaluation.

The empirical analysis measures the participants' change in leadership knowledge, skills, and behavior throughout the Academy. This analysis gauges the effectiveness of the curriculum by evaluating the participants' research-based transformational leadership behaviors, their capacity to engage in civic issues, and their innovation behaviors associated with positive individual and organizational outcomes. Participants' change in knowledge of, and engagement with, water issues in Nebraska is also assessed. Finally, participant's level of entrepreneurial leadership behaviors is assessed. This analysis is ongoing because it includes the cumulative results from all classes (2011-2019).

## Methodology

### *Participants*

All sixteen 2019 participants completed the pre- and post-Academy assessments of

transformational leadership behaviors, champion of innovation behaviors, civic capacity, Nebraska water issues knowledge and engagement, and entrepreneurial leadership behaviors. There were eight females and eight males. The participants' ages ranged from 24 to 68 years with a median age of 41 years.

### *Procedures*

A research-based questionnaire was employed to assess changes in leadership skills among participants about, and behaviors with respect to Nebraska's water issues. Items were also developed to measure participants' knowledge and behavior. The survey was administered online using Qualtrics™ software. UNL Institutional Review Board (IRB) approved the research prior to the assessment.

Academy participants were notified of the online questionnaire three weeks prior to the first Academy session in January 2019 and given instructions for its completion. This process was repeated three weeks prior to the final session in November 2019. Participants were also asked to invite others with whom they have a professional relationship to rate their leadership behaviors. Raters have included supervisors, peers, close colleagues, and those with whom participants' work closely outside their organization. Participants sent these raters an e-mail invitation that included the link to the online questionnaire.

### *Measures*

The online questionnaire consisted of four research-based leadership assessments and an additional section that assesses participants' knowledge about, and behaviors with respect to, Nebraska's water issues. All the instruments used in the questionnaire have satisfactory reliability and validity; thus they consistently and accurately measure the targeted skills and behaviors.

The first assessment was the Multifactor Leadership Questionnaire (MLQ-5) developed by Bass and Avolio (1995). The MLQ-5 (leader version and rater version) is a 45-item, 5-point Likert-type scale that is used to evaluate an individual's leadership style. The MLQ-5 measures characteristics of transformational and transactional leadership. Only the transformational elements were used in the evaluation.

Transformational leadership comprises four dimensions (Antonakis, Avolio, & Sivasubramaniam, 2003). *Idealized Influence* refers to the charisma of the leader, whether the leader is perceived as being confident and powerful, whether the leader is viewed as focusing on



higher-order ideals and ethics, and whose actions are centered on values, beliefs, and a sense of mission. *Inspirational Motivation* refers to the ways leaders energize others by viewing the future with optimism, stressing ambitious goals, projecting an idealized vision, and communicating to others that the vision is achievable. *Intellectual Stimulation* refers to leader actions that appeal to others' sense of logic and analysis by challenging others to think creatively and find solutions to difficult problems. *Individualized Consideration* refers to leader behavior that contributes to others' satisfaction by advising, supporting, and paying attention to the present and potential individual needs of others, and thus allowing them to develop and self-actualize.

The second assessment was a modified Champions of Innovation scale developed by Howell, Shea, and Higgins (2005). It is a 14-item, 5-point Likert-type scale that measures characteristics of champions of innovation. The scale was modified by eliminating one or two items from each of the three subscales for a total of 10 items. The constructs' three subscales are: *enthusiasm and confidence in what innovation can do*, *persisting under adversity*, and *getting the right people involved*.

A third assessment measures characteristics of civic capacity. The civic capacity scale was developed by Cramer (2015). Nine items of the 5-point Likert-type scale were used. Civic capacity is “the combination of interest and motivation to be engaged in public service and the ability to foster collaborations through the use of one's social connections and through the pragmatic use of processes and structures” (Sun & Anderson, 2012, p. 317). Civic capacity is composed of three dimensions. *Civic Drive* refers to the desire and motivation to be involved with social issues. *Civic Connections* refers to the social capital found in the leader's internal and external social networks that specifically enables and promotes the success of collaboration. *Civic Pragmatism* refers to the ability to translate social opportunities, by leveraging structures and mechanisms for collaboration.

A fourth assessment asks participants about their *entrepreneurial leadership behaviors* before and after the Academy. Five items were used to measure entrepreneurial leadership behavior. An entrepreneurial individual is described as an innovative person who is open to change and recognizes and pursues opportunities irrespective of existing resources, such as time, money, personal support and/or technology. Entrepreneurial leaders are noted for their ability to develop a compelling vision, recognize opportunities where others do not, operate in a highly

unpredictable atmosphere, influence others (both followers and a larger constituency), absorb uncertainty and risk, build commitment, and overcome barriers (e.g. Renko, Tarabishy, Carsrud, & Brännback, 2015).

The questionnaire also asks participants about their Nebraska water issues knowledge and engagement. The knowledge and behavior scale is an 8-item, 5-point Likert-type scale that measures *awareness* of water issues in Nebraska and *engagement* in water issues in Nebraska.

The internal reliability for the all the scales was 0.70 or greater. Nunnally and Bernstein (1994) concluded that acceptable minimum reliability (Cronbach's alpha) for measurement scales should be 0.70.

## Results from 2019 Nebraska Water Leaders Academy

### Leadership Knowledge, Skills, and Behaviors – Participants' Perspectives

The pre- and post-Academy transformational leadership behaviors of participants were assessed through a paired-samples *t*-test. Participants' transformational leadership behaviors significantly increased from pre-Academy ( $M = 2.84$   $SD = 0.48$ ) to post-Academy ( $M = 3.10$ ,  $SD = 0.43$ );  $t(15) = 4.00$ ,  $p = 0.004$ ,  $d = .57$ . Results are summarized in Table 3. All four of the transformational leadership behaviors were significantly higher at the end of the Academy.

Table 2. Results of Paired Samples *t*-Tests Comparing Participants' Transformational Leadership Behaviors Before and After the Academy ( $N = 16$ )

Transformational Leadership Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Idealized Influence	2.76	0.44	2.98	0.42	0.21	3.39	15	.004**	0.49
Inspirational Motivation	2.91	0.50	3.13	0.54	0.22	2.79	15	.014*	0.43
Intellectual Stimulation	2.84	0.61	3.11	0.46	0.27	2.84	15	.012*	0.50
Individual Consideration	2.87	0.54	3.19	0.49	0.32	3.24	15	.006**	0.62
Total Trans. Leadership	2.84	0.48	3.10	0.43	0.26	4.00	15	.001**	0.57

\*  $p < .05$ . \*\*  $p < .01$ .

A paired-samples *t*-test also compared 2019 participants' pre-Academy and post-Academy champion of innovation behaviors. Participants' innovation behavior scores significantly increased from pre-Academy ( $M = 2.91$ ,  $SD = 0.52$ ) to post-Academy ( $M = 3.15$ ,  $SD = 0.52$ );  $t(15) = 4.29$ ,  $p = 0.001$ ,  $d = .46$ . Results are summarized in Table 4. There was a significant increase in two of the three champions of innovation dimensions.

Table 3. Results of Paired Samples *t*-Tests Comparing Participants' Champion of Innovation Behaviors Before and After the Academy ( $N = 16$ )

Champion of Innovation Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Expresses Enthusiasm and Confidence in Innovation	2.64	0.82	3.03	0.67	0.39	4.68	15	.000***	0.52
Persistence under Adversity	2.94	0.69	3.10	0.74	0.16	1.83	15	.088	0.22
Get Right People Involved	3.15	0.47	3.31	0.48	0.16	2.19	15	.045*	0.37
Total Champ. of Innov.	2.91	0.52	3.15	0.52	0.24	4.30	15	.001***	0.46

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

A paired-samples *t*-test was conducted to compare 2019 participants' pre-Academy and post-Academy Nebraska water issues knowledge and engagement in water issues. Participants' awareness of water issues significantly increased from pre-Academy ( $M = 2.44$ ,  $SD = 1.15$ ) to post-Academy ( $M = 3.20$ ,  $SD = 0.58$ ;  $t(15) = 3.74$ ,  $p = 0.002$ ,  $d = .83$ ). Results are summarized in Table 5. There was a significant increase in participants engagement in water policy issues from pre-Academy ( $M = 2.47$ ,  $SD = 1.17$ ) to post-Academy ( $M = 3.00$ ,  $SD = 0.72$ );  $t(15) = 3.01$ ,  $p = 0.009$ ,  $d = .55$ .

Table 4. Results of Paired Samples *t*-Tests Comparing Participants' Nebraska Water Knowledge and Engagement Before and After the Academy ( $N = 16$ )

Water Knowledge & Engagement	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Awareness	2.44	1.15	3.20	0.58	0.76	3.74	15	.002**	0.83
Engagement	2.47	1.17	3.00	0.72	0.53	3.01	15	.009**	0.55

\*\*  $p < .01$ .

A paired-samples *t*-test was conducted to compare 2019 participants' pre-Academy and post-Academy civic capacity. Participants' civic capacity significantly increased from pre-Academy ( $M = 2.10$ ,  $SD = 1.10$ ) to post-Academy ( $M = 2.68$ ,  $SD = 0.80$ ;  $t(15) = 3.40$ ,  $p = 0.004$ ,  $d = .60$ ). Results are summarized in Table 6. There was a significant increase in all three dimensions of civic capacity.

Table 5. Results of Paired Samples *t*-Tests Comparing Participants' Civic Capacity Before and After the Academy (*N* = 16)

Civic Capacity	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Drive	2.15	1.02	2.52	0.92	0.37	2.22	15	.042*	0.38
Connections	2.21	1.26	2.85	0.85	0.64	2.90	15	.011*	0.60
Pragmatism	1.94	1.17	2.67	0.83	0.73	3.53	15	.003**	0.72
Total Civic Capacity	2.10	1.10	2.68	0.80	0.58	3.40	15	.004**	0.60

\*  $p < .05$ . \*\*  $p < .01$ .

A paired-samples *t*-test was conducted to compare 2019 participants' pre-Academy and post-Academy entrepreneurial leadership behavior. Participants' entrepreneurial leadership behavior significantly increased from pre-Academy ( $M = 2.83$ ,  $SD = 0.66$ ) to post-Academy ( $M = 3.06$ ,  $SD = 0.54$ ;  $t(15) = 2.39$ ,  $p = 0.030$ ,  $d = 0.38$ ). Results are summarized in Table 7.

Table 6. Results of Paired Samples *t*-Test Comparing Participants' Entrepreneurial Leadership Behavior Before and After the Academy (*N* = 16)

	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Entrepreneurial Behav.	2.83	0.66	3.06	0.54	0.23	2.39	15	.030*	0.38

\*  $p < .05$ .

### Leadership Knowledge, Skills, and Behaviors – Raters' Perspectives

The effects of self-report bias and social desirability issues are minimized if multiple data sources are used to assess leadership behaviors (Donaldson & Grant-Vallone, 2002).

Accordingly, feedback from multiple raters on Academy participants' leadership behaviors is another way of gauging the impact of the Academy on participants, and another means of assessing the achievement of Academy objectives. Thirty-eight individuals responded to invitations from 2019 Academy participants to rate their leadership behaviors prior to and after the Academy. The number of raters for each participant ranged from 0-5 on the pre-Academy questionnaire and 0-4 on the post Academy questionnaire. Three people did not have raters on the pre-Academy questionnaire and one person did not have a rater on the post-Academy questionnaire. Excluding the participants that did not have raters, the average number of raters was 2.9 for the pre-Academy questionnaire and 2.5 for the post-Academy questionnaire.

An independent samples *t*-test comparing raters' perspectives on participants' transformational leadership showed a significant increase from pre-Academy ( $M = 3.08$ ,  $SD = 0.45$ ) to post-Academy ( $M = 3.29$ ,  $SD = 0.47$ );  $t(74) = 2.46$ ,  $p = 0.016$ ,  $d = .56$ . Results are summarized in Table 8. Raters assessed a significant increase in two of the for transformational leadership behaviors (idealized Influence and Intellectual Stimulation).

Table 7. Results of Independent Samples *t*-Tests Comparing Raters' Perceptions of Participants' Transformational Leadership Behaviors Before and After the Academy

Transformational Leadership Behavior	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Idealized Influence – Pre-Academy	38	2.98	.45	2.26	74	.027*	0.52
Idealized Influence – Post-Academy	38	3.22	.47				
Inspirational Motivation – Pre-Academy	38	3.16	.25	1.67	74	.100	0.37
Inspirational Motivation – Post-Academy	38	3.30	.48				
Intellectual Stimulation – Pre-Academy	38	3.06	.39	3.01	74	.004**	0.70
Intellectual Stimulation – Post-Academy	38	3.35	.44				
Individual Consideration – Pre-Academy	38	3.11	.44	1.53	74	.130	0.35
Individual Consideration – Post-Academy	38	3.28	.53				
Total Trans. Leadership – Pre-Academy	38	3.08	.32	2.46	74	.016*	0.56
Total Trans. Leadership – Post-Academy	38	3.29	.42				

\*  $p < .05$ . \*\*  $p < .01$ .

An independent samples *t*-test comparing raters' perspectives on participants' champion of innovation behavior showed a significant increase from pre-Academy ( $M = 3.12$ ,  $SD = 0.69$ ) to post-Academy ( $M = 3.38$ ,  $SD = 0.56$ );  $t(74) = 2.63$ ,  $p = 0.010$ ,  $d = .60$ . Results are summarized in Table 9. Raters assessed a significant increase in all three champions of innovation dimensions.

Table 8. Results of Independent Samples *t*-Tests Comparing Raters' Perceptions of Participants' Champion of Innovation Behaviors Before and After the Academy

Champion of Innovation Behavior	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Enthusiasm & Confidence – Pre-Academy	38	3.00	.69	2.00	74	.050*	0.46
Enthusiasm & Confidence – Post-Academy	38	3.29	.56				
Persistence – Pre-Academy	38	3.16	.40	2.00	74	.050**	0.47
Persistence – Post-Academy	38	3.38	.52				
Right People Involved – Pre-Academy	38	3.19	.35	2.73	74	.008**	0.63
Right People Involved – Post-Academy	38	3.48	.55				
Total Champ. of Innovation – Pre-Academy	38	3.12	.40	2.63	74	.010*	0.60
Total Champ. of Innovation – Post-Academy	38	3.38	.47				

\*  $p < .05$ . \*\*  $p < .01$ .

An independent samples *t*-test comparing raters' perspectives on participants' awareness of water issues in Nebraska showed a significant increase from pre-Academy ( $M = 3.13$ ,  $SD = 0.65$ ) to post-Academy ( $M = 3.47$ ,  $SD = 0.54$ );  $t(74) = 2.51$ ,  $p = 0.014$ ,  $d = 0.57$ . Raters also assessed a significant increase in participants' engagement in Nebraska water issues from pre-Academy ( $M = 3.02$ ,  $SD = 0.72$ ) to post-Academy ( $M = 3.34$ ,  $SD = 0.63$ );  $t(74) = 2.03$ ,  $p = 0.050$ ,  $d = .47$ . Results are summarized in Table 10.

Table 9. Results of Independent Samples *t*-Tests Comparing Raters' Perceptions of Participants' Nebraska Water Knowledge and Engagement Before and After the Academy

Water Knowledge & Engagement	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Awareness – Pre-Academy	38	3.13	.65	2.51	74	.014*	0.57
Awareness – Post-Academy	38	3.47	.54				
Engagement – Pre-Academy	38	3.02	.72	2.03	74	.050*	0.47
Engagement – Post-Academy	38	3.34	.63				

\* $p < .05$ .

An independent samples *t*-test comparing raters' perspectives on participants' civic capacity showed a significant increase from pre-Academy ( $M = 2.95$ ,  $SD = 0.57$ ) to post-Academy ( $M = 3.23$ ,  $SD = 0.55$ );  $t(74) = 2.14$ ,  $p = 0.036$ ,  $d = 0.59$ . Results are summarized in Table 11. Raters assessed a significant increase in two of the three dimensions of civic capacity from pre-Academy to post-Academy (Drive and Connections).



Table 10. *Results of Independent Samples t-Tests Comparing Raters' Perceptions of Participants' Civic Capacity Before and After the Academy*

Civic Capacity	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Drive – Pre-Academy	38	2.91	.67	2.00	74	.049*	0.49
Drive – Post-Academy	38	3.21	.56				
Connections – Pre-Academy	38	2.99	.56	2.26	74	.027*	0.19
Connections – Post-Academy	38	3.29	.60				
Pragmatism – Pre-Academy	38	2.94	.61	1.72	74	.090	0.41
Pragmatism – Post-Academy	38	3.18	.57				
Total Civic Capacity – Pre-Academy	38	2.95	.57	2.14	74	.036*	0.59
Total Civic Capacity – Post-Academy	38	3.23	.55				

\* $p < .05$ .

An independent samples *t*-test comparing raters' perspectives on participants' entrepreneurial leadership behavior showed a significant increase from pre-Academy ( $M = 3.02$ ,  $SD = 0.36$ ) to post-Academy ( $M = 3.24$ ,  $SD = 0.52$ );  $t(74) = 2.02$ ,  $p = 0.047$ ,  $d = 0.49$ . Results are summarized in Table 12.

Table 11. *Results of Independent Samples t-Test Comparing Raters' Perceptions of Participants' Entrepreneurial Behavior Before and After the Academy*

Entrepreneurial Behavior	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Entrepreneurial Behavior – Pre-Academy	38	3.02	.36	2.02	74	.047*	0.49
Entrepreneurial Behavior – Post-Academy	38	3.24	.52				

\* $p < .05$ .

Results of the 2019 Academy participants' assessments show a significant change in transformational leadership behaviors, innovation behaviors, awareness of Nebraska water issues, engagement in water issues, civic capacity, and entrepreneurial leadership behavior. These changes are evidence that the curriculum is meeting the objectives of the Academy.

While the overall results were statistically significant from both the participants' and raters' perspectives, the participants scored themselves slightly higher in several cases. For example, there was a significant increase in all four transformational leadership behaviors from the participants' perspective but only a significant increase in two of the four transformational leadership behaviors from the raters' perspective. Likewise, there was a significant increase in all three champions of innovation dimensions from the participants' perspective but only a significant increase in two of the three champions of innovation dimensions from the raters'



perspective. Possible explanations could range from participant desirability bias to a wide range of professional experiences with raters.

### **2019 Session Evaluations**

Session evaluations covered the specific topics addressed during each session. Participants concluded that their knowledge and understanding increased substantially after each session (Appendix II). Results provide strong support for the Academy's objectives. Participants' feedback was incorporated into session planning. Organizers made adjustments in subsequent sessions based on the feedback. For example, participants have often expressed a desire for more discussion with presenters. The planning team incorporated more time for discussion into sessions and has made a point to remind presenters to allow time for question and answers.

The participants' feedback is used to plan the 2020 Academy. Presenters that were commended by participants are being retained and new presenters will be invited. New leadership and water related topics are being investigated. Field trip destinations, presenters, group projects, and recruitment are also being adjusted.

Post session evaluations are a valuable tool for gauging participants experience with the Academy. Feedback from participants will continue to guide the development and delivery of the Academy.

## **Cumulative Nebraska Water Leaders Academy Results**

### **Leadership Knowledge, Skills, and Behaviors – Participants' Perspectives**

#### *Cumulative Participants*

One hundred thirty-four of the 136 total Academy participants have completed the pre- and post-Academy assessment of leadership behaviors, champion of innovation behaviors, Nebraska water issues knowledge and behavior, and entrepreneurial leadership behavior since 2011. Thirty-four females and 100 males have completed the pre- and post-assessment (35 females and 101 males have completed the Academy). Respondents' ages ranged from 24 to 68 years with a median of 41 years.

A paired-samples *t*-tests showed there has been a significant cumulative increase in the cumulative participants' transformational leadership behaviors from pre-Academy ( $M = 2.76$ ,  $SD = 0.46$ ) to post-Academy ( $M = 3.07$ ,  $SD = 0.39$ );  $t(133) = 11.66$ ,  $p = 0.000$ ,  $d = .73$ . Results are

summarized in Table 13. There has been a significant increase in all four transformational leadership behaviors for Academy participants of nine classes of the Academy from pre-Academy to post-Academy.

Table 12. *Results of Paired Samples t-Tests Comparing Cumulative Participants' Transformational Leadership Behavior Before and After the Academy (N = 134)*

Transformational Leadership Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Idealized Influence	2.70	0.49	3.00	0.41	0.30	9.21	133	.000***	0.66
Inspirational Motivation	2.76	0.59	3.08	0.52	0.32	8.82	133	.000***	0.56
Intellectual Stimulation	2.75	0.59	3.10	0.49	0.35	10.00	133	.000***	0.65
Individual Consideration	2.84	0.54	3.11	0.40	0.27	6.77	133	.000***	0.57
Total Trans. Leadership	2.76	0.46	3.07	0.39	0.31	11.66	133	.000***	0.73

\*\*\*  $p < .001$ .

A paired-samples *t*-test showed there has been a significant increase in cumulative participants' innovation behaviors from pre-Academy ( $M = 3.00$ ,  $SD = 0.49$ ) to post-Academy ( $M = 3.27$ ,  $SD = 0.41$ );  $t(133) = 10.08$   $p = 0.000$ ,  $d = .60$ . Results are summarized in Table 14. Nine classes of Academy participants have demonstrated a significant increase in all three champions of innovation dimensions from pre-Academy to post-Academy.

Table 13. *Results of Paired Samples t-Tests Comparing Cumulative Participants' Champion of Innovation Behaviors Before and After the Academy (N = 134)*

Champion of Innovation Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Expresses Enthusiasm and Confidence in Innovation	2.91	0.67	3.23	0.52	0.32	8.12	133	.000***	0.53
Persistence under Adversity	2.97	0.56	3.22	0.50	0.25	7.14	133	.000***	0.47
Get Right People Involved	3.11	0.57	3.36	0.51	0.25	7.60	133	.000***	0.46
Total Champ. of Innov.	3.00	0.49	3.27	0.41	0.27	10.08	133	.000***	0.60

\*\*\*  $p < .001$ .

A paired-samples *t*-test showed there has been a significant increase in awareness of Nebraska policy water issues for Academy participants from eight classes of the Academy from

pre-Academy ( $M = 2.79$ ,  $SD = 0.81$ ) to post-Academy ( $M = 3.43$ ,  $SD = 0.51$ ;  $t(133) = 10.57$ ,  $p = 0.000$ ,  $d = .95$ ). Results are summarized in Table 15. There has been a significant increase in engagement in water policy issues for eight classes of participants from pre-Academy ( $M = 2.58$ ,  $SD = 0.90$ ) to post-Academy ( $M = 3.12$ ,  $SD = 0.67$ );  $t(133) = 9.46$ ,  $p = 0.000$ ,  $d = .68$ .

Table 14. Results of Paired Samples *t*-Tests Comparing Cumulative Participants' Nebraska Water Knowledge and Engagement Before and After the Academy ( $N = 134$ )

Water Knowledge & Engagement	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Awareness	2.79	0.81	3.43	0.51	0.64	10.57	133	.000***	0.95
Engagement	2.58	0.90	3.12	0.67	0.54	9.46	133	.000***	0.68

\*\*\*  $p < .001$ .

Civic capacity was assessed for the first time in 2016. Thus, cumulative results for civic capacity represent the past three Academy classes. Results of a paired-samples *t*-test showed a significant increase in cumulative participants' civic capacity from pre-Academy ( $M = 2.32$ ,  $SD = 0.93$ ) to post-Academy ( $M = 2.78$ ,  $SD = 0.77$ );  $t(69) = 8.13$ ,  $p = 0.000$ ,  $d = .54$ . Results are summarized in Table 16. There was a significant increase in all three civic capacity dimensions from pre-Academy to post-Academy.

Table 15. Results of Paired Samples *t*-Tests Comparing Cumulative Participants' Civic Capacity Before and After the Academy ( $N = 70$ )

Civic Capacity	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Drive	2.40	0.93	2.78	0.66	0.38	5.63	69	.000***	0.47
Connections	2.44	0.93	3.05	0.66	0.61	7.76	69	.000***	0.76
Pragmatism	2.12	0.92	2.66	0.72	0.49	6.76	69	.000***	0.65
Total Civic Capacity	2.32	0.93	2.78	0.77	0.46	8.13	69	.000***	0.54

\*\*\*  $p < .001$ .

A paired-samples *t*-test of entrepreneurial leadership behavior showed there has been a significant increase in eight Academy classes from pre-Academy ( $M = 2.70$ ,  $SD = 0.71$ ) to post-Academy ( $M = 3.02$ ,  $SD = 0.59$ );  $t(133) = 7.70$ ,  $p = 0.000$ ,  $d = 0.49$ . Results are summarized in Table 17.

Table 16. Results of Paired Samples *t*-Test Comparing Cumulative Participants' Entrepreneurial Leadership Behavior Before and After the Academy ( $N = 134$ )

	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's
	M	SD	M	SD					<i>d</i>
Entrepreneurial Behav.	2.70	0.71	3.02	0.59	0.32	7.70	133	.000***	0.49

\*\*\*  $p < .001$ .

### Leadership Knowledge, Skills, and Behaviors – Raters' Perspectives

#### Cumulative Results of External Raters

A series of independent samples *t*-tests were conducted to compare the cumulative raters' perspective on Academy participants' transformational leadership behaviors. Three hundred fifty raters have completed pre-Academy assessments and 315 raters have completed post-Academy assessments. Results showed a significant increase from pre-Academy ( $M = 3.02$ ,  $SD = 0.51$ ) to post-Academy ( $M = 3.28$ ,  $SD = 0.42$ );  $t(663) = 6.75$ ,  $p = 0.000$ ,  $d = .58$ . Results are summarized in Table 18. The cumulated raters assessed a significant increase in all four transformational leadership behaviors.

Table 17. Results of Independent Samples *t*-Tests Comparing Cumulative Raters' Perspectives of Participants' Transformational Leadership Behaviors Before and After the Academy

Transformational Leadership Behavior	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Idealized Influence – Pre-Academy	350	3.03	.54	6.52	663	.000***	0.51
Idealized Influence – Post-Academy	315	3.28	.44				
Inspirational Motivation – Pre-Academy	350	3.08	.57	5.46	663	.000***	0.43
Inspirational Motivation – Post-Academy	315	3.31	.50				
Intellectual Stimulation – Pre-Academy	350	2.97	.58	6.54	663	.000***	0.56
Intellectual Stimulation – Post-Academy	315	3.27	.49				
Individual Consideration – Pre-Academy	350	3.01	.60	5.48	663	.000***	0.41
Individual Consideration – Post-Academy	315	3.24	.52				
Total Trans. Leadership – Pre-Academy	350	3.02	.51	7.00	663	.000***	0.58
Total Trans. Leadership – Post-Academy	315	3.28	.42				

\*\*\*  $p < .001$ .

An independent samples *t*-test comparing cumulative raters' perspectives of participants' innovation behaviors showed a significant increase from pre-Academy ( $M = 3.20$ ,  $SD = 0.48$ ) to post-Academy ( $M = 3.47$ ,  $SD = 0.44$ );  $t(663) = 7.56$ ,  $p = 0.000$ ,  $d = .59$ . Results are summarized

in Table 19. The cumulated raters assessed a significant increase in all three champions of innovation behaviors from pre-Academy to post-Academy.

Table 18. *Results of Independent Samples t-Tests Comparing Cumulative Raters' Perspective of Participants' Champion of Innovation Behaviors Before and After the Academy*

Champion of Innovation Behavior	N	M	SD	t	df	Sig.	Cohen's d
Enthusiasm & Confidence – Pre-Academy	350	3.09	.63	7.56	663	.000***	0.47
Enthusiasm & Confidence – Post-Academy	315	3.37	.55				
Persistence – Pre-Academy	350	3.24	.51	6.04	663	.000***	0.45
Persistence – Post-Academy	315	3.47	.51				
Right People Involved – Pre-Academy	311	3.26	.50	7.75	663	.000***	0.62
Right People Involved – Post-Academy	277	3.56	.47				
Total Champ. of Innov. – Pre-Academy	311	3.20	.48	7.50	663	.000***	0.59
Total Champ. of Innov. – Post-Academy	277	3.47	.44				

\*\*\*  $p < .001$ .

An independent samples *t*-test comparing raters' perspectives on water issues knowledge showed a significant increase pre-Academy ( $M = 3.25$ ,  $SD = 0.63$ ) to post-Academy ( $M = 3.57$ ,  $SD = 0.50$ );  $t(663) = 7.21$ ,  $p = 0.000$ ,  $d = .56$ . Results are summarized in Table 20. Raters also assessed a significant increase in cumulative participants' engagement with Nebraska water policy issues from pre-Academy ( $M = 3.05$ ,  $SD = 0.75$ ) to post-Academy ( $M = 3.43$ ,  $SD = 0.61$ );  $t(663) = 7.20$ ,  $p = 0.000$ ,  $d = .56$ .

Table 19. *Results of Independent Samples t-Tests Comparing Cumulative Raters' Perspective of Participants' Nebraska Water Knowledge and Engagement Before and After the Academy*

Water Knowledge & Engagement	N	M	SD	t	df	Sig.	Cohen's d
Awareness – Pre-Academy	350	3.25	.63	7.21	663	.000***	0.56
Awareness – Post-Academy	315	3.57	.50				
Engagement – Pre-Academy	350	3.05	.75	7.20	663	.000***	0.56
Engagement – Post-Academy	315	3.43	.61				

\*\*\*  $p < .001$ .

Civic Capacity was assessed for the first time in 2016. Thus, cumulative results for civic capacity from the raters' perspective represent the past three Academy classes. Results of an independent *t*-test showed a significant increase in civic capacity from pre-Academy ( $M = 3.01$ ,  $SD = 0.60$ ) to post-Academy ( $M = 3.33$ ,  $SD = 0.59$ );  $t(368) = 5.13$ ,  $p = 0.000$ ,  $d = .54$ . Results

are summarized in Table 21. The cumulated raters assessed a significant increase in all three dimensions of civic capacity from pre-Academy to post-Academy.

Table 20. *Results of Independent Samples t-Tests Comparing Cumulative Raters' Perspective of Participants' Civic Capacity Before and After the Academy*

Civic Capacity	N	M	SD	t	df	Sig.	Cohen's d
Drive – Pre-Academy	196	3.02	.67	4.29	368	.000***	0.44
Drive – Post-Academy	174	3.31	.66				
Connections – Pre-Academy	196	3.02	.63	5.53	368	.000***	0.59
Connections – Post-Academy	174	3.38	.60				
Pragmatism – Pre-Academy	196	3.01	.63	4.50	368	.000***	0.47
Pragmatism – Post-Academy	174	3.30	.61				
Total Civic Capacity – Pre-Academy	196	3.01	.60	5.06	291	.000***	0.54
Total Civic Capacity – Post-Academy	174	3.33	.59				

\*\*\*  $p < .001$ .

An independent-samples *t*-test comparing cumulative raters' perspectives of participants' entrepreneurial leadership behavior showed a significant increase from pre-Academy ( $M = 3.14$ ,  $SD = 0.57$ ) to post-Academy ( $M = 3.36$ ,  $SD = 0.59$ ;  $t(662) = 4.96$ ,  $p = 0.000$ ,  $d = 0.40$ ). Results are summarized in Table 22.

Table 21. *Results of Independent Samples t-Test Comparing Cumulative Raters' Perspective of Participants' Entrepreneurial Leadership Behavior Before and After the Academy*

Entrepreneurial Behavior	N	M	SD	t	df	Sig.	Cohen's d
Pre-Academy	349	3.14	.57	4.96	662	.000***	0.40
Post-Academy	315	3.36	.59				

\*\*\*  $p < .001$ .

## Discussion

The results of the empirical analysis and the review of the session evaluations demonstrate that the Academy is meeting its objectives and is successfully developing future water leaders. Academy participants demonstrated a significant increase in their leadership knowledge, skills, and behaviors. Participants provided constructive and highly positive feedback overall. Moreover, participant concerns were addressed in subsequent sessions, and minor changes are planned for the 2020 Academy curriculum. The changes include new topics and presenters.



Multi-rater feedback demonstrates that others have observed an increase in Academy participants' leadership knowledge, skills, and behaviors. Results of raters' perceptions of 2019 participants' leadership knowledge, skills, and behaviors were statistically significant. Likewise, results from the cumulative perspective of raters of all nine Academy classes were statistically significant.

## **Team Projects**

### *2019 Class Projects*

Academy participants were divided into four teams. Each team was required to create and complete a project that increases the impact of the Academy. One team conducted a survey of the general public in order to identify gaps in understanding water issues and identify water topics that are important to Nebraskans. The results indicated that the 19 survey participants had a generally good knowledge of basic water facts. A second team produced a curriculum for teachers of middle school students titled "Water Awareness: Where is it? How do we get it? How do we keep it?" The curriculum included learning objectives and associated activities. A third team developed an interactive groundwater activity for 6-12 year olds. The activity involves building aquifers to represent different geologic and use conditions for the purpose of creating a discussion on water priorities as well as an understanding of multiple uses and consequences of policy decisions. The fourth team reported on opportunities for partnerships to address water quality problems in Nebraska. Resources and examples of partnerships were shared.

### *Past Class Projects*

Many team projects in previous Academy classes have engaged the public on water issues. Several teams developed a Geographical Information System (GIS) tool with multiple maps viewable in Google Earth for educational presentations on Nebraska's water resources. Displays include USGS stream gauge locations, NRD boundaries, Nebraska Department of Natural Resources field offices, and many others. Two other teams developed a GIS story map as a means to communicate and connect with other water leaders. A team worked with information technology students at the University of Nebraska-Kearney to create an app (i.e., application software) that measures household water consumption. A team assessed the status of water plans in surrounding states, which can be used to inform the development of a Nebraska water plan. Another team developed and shared a promotional video of the Academy.



Many teams have developed various citizen guides to water information and water volume conversions. A water resource guide in the form a “pull-and-reveal” slider was produced in 2012. Users pull the slider to reveal a name of a watershed in one window while facts about the watershed are revealed in another window. This slider has been shared with the public and natural resource agencies. Another team developed an informational tool for educational modules on Nebraska’s water resources. Similarly, a team developed a slideshow guide to Nebraska’s water resources. This information has been uploaded to a Dropbox™ folder available to elementary teachers. Another team worked with the Nebraska Department of Natural Resources to develop a promotional pamphlet of the Nebraska Rainfall Assessment and Information Network (NeRAIN) to recruit volunteers to report local precipitation. The team also contacted elementary, junior high, and high school principals to increase awareness of the program with science and math teachers. A team developed a comprehensive source of water related contacts with links to connect the user with the resource. One team created an educational water map representing residential water use in Nebraska in the form of a poster. The map is targeted to K-12 students and was made available to K-12 teachers. The map incorporates water trivia and volume conversions. Lastly, a team created a pamphlet encouraging wise domestic water use as well as information on potential groundwater contaminants in Nebraska and contact information on water testing.

Two teams from a previous Academy have written funding proposals. One of the teams received funding and purchased a portable stream table to educate the public and K-12 students about rivers. Another team wrote and submitted a grant to fund an Academy alumni reunion. Although the grant was not funded, the team organized an Academy reunion as part of the 2015 Nebraska Water Resources Association and Nebraska State Irrigation Association Joint Convention. Another team reviewed funding strategies supporting water projects. An Academy alumnus has developed a slideshow depicting the history of water projects in the North Platte River watershed for a college-credit project at the University of Nebraska-Lincoln. Another team used Facebook analytics to track how people interacted with an infographic of Nebraska water facts posted it on the Nebraska Water Leaders Academy Facebook.

### **Academy Alumni**

Many Academy alumni are serving as water leaders in local, national, and global arenas. Several alumni have been elected to Natural Resources Districts boards of directors. Several

others are preparing to run for election to Natural Resources Districts boards of directors. Other alumni are involved in local water boards and planning committees. Academy alumni are also members of other community boards or organizations ranging from planning, community involvement, education, and church groups. Numerous alumni are engaged in local political and community organizations as employees or volunteers. Many alumni have assumed supervisory roles in their workplaces, and they credit the Academy for instilling the skills, confidence, and experience they needed to advance. Examples of leadership includes, but is not limited to, alumni serving as:

- Special Advisor to the Secretary of the U.S. Department of Agriculture
- Nebraska Natural Resources Commission members
- Nebraska Environmental Trust board member
- Nebraska State Irrigation Association member
- City council member
- Foundation board members (alumni are serving on a variety of different boards)
- Coordinator for a state senator
- Water round table discussion participants and committee members who work within a Nebraska-focused water task force
- Director of a nature preserve

Additionally, an Academy alumnus is teaching a geography and water resources course at the University of Nebraska-Omaha, using knowledge gained from his experience in the Academy. Three alumni apply leadership behaviors learned in the Academy to their cooperative extension programming. Two alumni have begun volunteering at her local elementary school and a science fair. One Academy alumnus is engaged in international water management. He works on teams that have secured grants to address critical water issues in Kabul (Afghanistan), Dushanbe (Tajikistan), and Islamabad (Pakistan).

The service of alumni in leadership roles demonstrates that the Academy is both achieving its specified goals and helping participants realize their personal goals. Advances in science and technology, combined with uncertain policy modifications, political challenges, population growth and a massive evolution in consumer behaviors and expectations, have

created a need for both incremental and radical innovation at local to global scales. The increasingly rapid rate of change calls for entrepreneurial leaders who can serve as champions of innovation with a focus on the future. The Academy teaches and measures these skills and abilities. Alumni are working, serving, and leading locally and globally. They are leading innovation to create change and a more positive future in areas ranging from politics to education and international water management.

### **Future Plans**

Our analyses indicate that only minor changes in the Academy curriculum are necessary. The instructional methods are generally working well, and the session topics and instructors/presenters have been generally well received. The Academy planners will consider replacing a few instructors/presenters that were not well regarded by participants, either because of the quality of the presentations or the relevance of the topics. The Academy planners are also considering how to include more discussion opportunities with leadership and water experts. The evolving nature of water issues in Nebraska requires the Academy to be vigilant in the development of curriculum and the choice of instructors/presenters in future Academy programs, as well as consideration of instructors/presenters who understand principles of adult learning.

Alumni are strongly encouraged to maintain active involvement with the Academy. Numerous Academy alumni have served on the Academy planning team. Alumni have presented at Academy sessions and are following Academy activities on-line. Academy alumni are asked to keep the Academy organizers updated on their involvement in water issues and are included in announcements from the Academy planners. The Academy has a regular newsletter and maintains a Facebook page to communicate with alumni. Academy alumni are invited to attend each session in 2020. The success of the 2015 and 2018 alumni reunions and alumni feedback indicate that alumni reunions are attractive and more should be planned. Discussion of an alumni reunion is ongoing.

### **Summary**

Sixteen participants successfully completed the 2019 Academy bringing the total number of graduates to 136 since the inception of the program in 2011. Academy graduates have demonstrated increased transformational leadership behaviors, champion of innovation skills, water knowledge and engagement, civic capacity, and entrepreneurial leadership behaviors. Alumni have emerged as leaders in their communities and beyond. The Academy continues to

meet its objectives. It also continues to expand and evolve based on participant feedback and the research being conducted with participants. The success of the nine classes of the Academy has provided a firm foundation on which to build and expand. The blending water science and policy with the development of leadership will continue to be of tremendous importance in the sustainable use of Nebraska's water resources and community capacity.

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## **Appendix I**

### **Contributors to the 2019 Nebraska Water Leaders Academy**

<b>Instructor</b>	<b>Organization</b>	<b>Program Title</b>	<b>Session</b>
Carol Jess	CJJ Communications	Academy Communications	#1, Lincoln
Susan Littlefield	KRVN Radio	Social Networking	#1, Lincoln
Jessica Jones	Nebraska Extension, Southeast Research & Extension Center (SREC)	Personality and Leadership Assessments and Potentials	#1, Lincoln
Sen. Dan Hughes	Nebraska Unicameral	Natural Resources Committee	#1, Lincoln
Mark Burbach	UNL School of Natural Resources (SNR) Conservation & Survey Division (CSD)	Full Range Leadership (i.e. Transformational Leadership)	#1, Lincoln
Mark Burbach	UNL SNR CSD	Pre-Academy Leadership Skills Assessment	#1, Lincoln
LeRoy Sievers	Nebraska Dept. of Natural Resources	Water Law Primer	#1, Lincoln
Lee Orton	Nebraska State Irrigation Association (NSIA)	Science Element	#1, Lincoln
Allen Dutcher	UNL SNR	Nebraska Climate/Weather	#1, Lincoln
Matt Joeckel	UNL SNR CSD	Geology of Nebraska	#1, Lincoln
Jesse Korus	UNL SNR CSD	Hydrology of Nebraska	#1, Lincoln
Ryan Chapman	Nebraska Department of Environmental Quality (NDEQ)	Water Quality in Nebraska	#1, Lincoln
David Miesbach	NDEQ	NDEQ Standards, Programs, & Drinking Water Quality	#1, Lincoln
John Bender	NDEQ	NDEQ Standards, Programs, & Drinking Water Quality	#1, Lincoln
Erik Prenosil	NDEQ	NDEQ Standards, Programs, & Drinking Water Quality	#1, Lincoln
Andrew Pierson	Audubon Rowe Sanctuary	Eco-Tourism from the Environmental Perspective	#2, Kearney
Gina Matkin	UNL Department of Agricultural Leadership, Education and Communication (ALEC)	Diversity and Conflict	#2, Kearney
Meghan Sittler	Audubon Spring Creek Prairie	People, Water and Nebraska's Ecology	#2, Kearney
Matt Lukasiewicz	Loup Basin Reclamation District	Panel – Central Nebraska Water Issues	#2, Kearney
Rob Schultz	Nebraska Weed Control Association	Panel – Central Nebraska Water Issues	#2, Kearney
Jason Farnsworth	Platte River Recovery Implementation Project	Panel – Central Nebraska Water Issues	#2, Kearney
Scott Smatters	Nebraska Natural Resources Commission	Panel – Central Nebraska Water Issues	#2, Kearney
Michael Farrell	Platte Basin Timelapse Program	My Path to the River	#2, Kearney
Roger Jasnoch	Kearney Convention Bureau	Eco-Tourism from the Commercial Perspective	#2, Kearney
J. Michael Jess	Water Resources Engineer (former director NDNR)	River Basin Compacts & Decrees	#2, Kearney
Carla McCullough	NDEQ	Addressing Surface Water Impairments	#2, Kearney
Tylr Naprstek	Lower Loup NRD	South Loup Watershed Management Plan	#3, Valentine
Adam Rupe	JEO Consulting	South Loup Watershed Management Plan	#2, Kearney
Lori Laster	Papio-Missouri NRD	Flood Control Projects	#3, Omaha
Paul Woodward	Papio-Missouri NRD	Water Quality Projects	#3, Omaha
	Omaha Public Works Dept.	Missouri River Wastewater Treatment Plant	#3, Omaha
Darek Gardels	HDR	Omaha's Combined Sewer Overflow Project	#3, Omaha
Emily Holtzclaw	Jacobs Engineering	Omaha's Combined Sewer Overflow Project	#3, Omaha
Mike Koenig	Metropolitan Utilities District	Florence Water Production Facility	#3, Omaha
Ann Bleed	Engineer (former director NDNR)	Applying the Elinor Ostrom Principles of Common Pool Resources Management	#3, Omaha

Connie Reimers-Hild	Rural Futures Institute at the University of Nebraska & Nebraska Extension	Leading Innovation: A Foundation for Personal and Organizational Change	#3, Omaha
Tara Sampson	NDEQ	NDEQ Financial Assistance Programs	#3, Omaha
John Danforth	NDEQ	NDEQ Financial Assistance Programs	#3, Omaha
Steven Wolf	JEO Consulting Group, Inc.	Risk Communication	#3, Omaha
Cheryl Burkhardt-Kriesel	Nebraska Extension, Panhandle Research & Extension Center (PREC)	Understanding the Community Context	#4, Scottsbluff
Lee Orton	NSIA	Nebraska's Public Power & Irrigation Districts History	#4, Scottsbluff
J. Michael Jess	Water Resources Engineer (former director NDNR)	Development of the Integrated Water System and the Political Structure in the North Platte Basin	#4, Scottsbluff
Kevin Adams	Farmers Irrigation District	North Platte Reservoir & Irrigation System	#4, Scottsbluff
Dennis Strauch	Pathfinder Irrigation District	North Platte Reservoir & Irrigation System	#4, Scottsbluff
Richael Young	Mammoth Trading	Water Markets in Practice	#4, Scottsbluff
Pat O'Brien	Upper Niobrara-White NRD	Nebraska's Natural Resources Districts – A History and Examination of Programs and Projects/Upper Niobrara White NRD Projects & Programs	#4, Scottsbluff
Rod Horn	South Platte NRD	South Platte NRD Projects and Programs	#4, Scottsbluff
Barb Cross	North Platte NRD	South Platte NRD Projects and Programs	#4, Scottsbluff
Thad Kuntz	Adaptive Resources, Inc.	Western Water Use Management Modeling	#4, Scottsbluff
Terry Julesgard	Lower Niobrara-White NRD	Panel - The Niobrara River Valley, The Past, The Present, The Future	#5, Valentine
Mike Murphy	Middle Niobrara NRD	Panel - The Niobrara River Valley, The Past, The Present, The Future	#5, Valentine
Jesse Bradley	NDNR	Panel - The Niobrara River Valley, The Past, The Present, The Future	#5, Valentine
Gordon Warrick	National Park Service, Niobrara National Scenic River	Panel - The Niobrara River Valley, The Past, The Present, The Future	#5, Valentine
Rich Walters	The Nature Conservancy	Panel - The Niobrara River Valley, The Past, The Present, The Future	
John Heaston	Heaston Consulting	The Intersection of Science and Policy	#5, Valentine
Matt Joeckel	UNL SNR CSD	Geology of the Niobrara Valley	#5, Valentine
Sam Radford	Nebraska Department Environment & Energy	Wellhead Protection in Nebraska	#5, Valentine
Crystal Powers	Nebraska Water Center	Building a Clean Water Future	#5, Valentine
Mark Burbach	UNL SNR CSD	Personal Empowerment	#6 Nebraska City
Mark Burbach	UNL SNR CSD	Post-Academy Leadership Assessment	#6 Nebraska City
Roric Paulman	Nebraska Water Balance Alliance/Farmer	Future of Ag Production	#6 Nebraska City
Karen Amen	Lower Platte South NRD Board of Directors	Panel - Getting Involved and Experience Serving on Public Boards	#6 Nebraska City
Glenn Johnson	Lower Platte South NRD, Former General Mngr	Panel - Getting Involved and Experience Serving on Public Boards	#6 Nebraska City
Gerald Mestl	Nebraska Game & Parks Commission	The Missouri River-Past, Present, Future	#6 Nebraska City
Nick Brozovic'	Daugherty Water for Food Global Institute	Water Economics	#6 Nebraska City
Susan Burton	UNL ALEC	Tapping into Your Motivation to Serve	#6 Nebraska City
Liz VanWormer	Nebraska One Health	Nebraska One Health Program	#6 Nebraska City
Ann Briggs	UNL SNR	Communicating Science to the Public	#6 Nebraska City
John Chapo	Lincoln Children's Zoo	Community Involvement and Leadership Opportunities	#6 Nebraska City
Mark Burbach	UNL SNR CSD	Leadership Next Steps	#6 Nebraska City
Mark Burbach	UNL SNR CSD	Session Facilitation	All Sessions

# **Appendix II**

## **Session Evaluations**

# Nebraska Water Leaders Academy

January 24 & 25, 2019

Lincoln, NE

**15 returned**

Please provide two responses for each statement below. In the section labeled “BEFORE this WLA Session” circle the answer that best describes you BEFORE this session of the Water Leaders Academy.

Then, in the shaded section labeled “Now, at the END of this WLA Session” circle the answer that best describes you NOW that you finished this session of the Water Leaders Academy.

BEFORE this WLA Session						Now, at the END of this WLA Session					% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree	
1(1)	2(2)	3(5)	4(6)	5(1)	1) I understand the importance and purpose of social networking	1	2	3(3)	4(10)	5(2)	<b>20</b>
1	2(7)	3(6)	4(1)	5(1)	2) I understand how preferences based on personality type may affect leadership	1	2	3(2)	4(9)	5(4)	<b>51</b>
1	2(7)	3(6)	4(2)	5	3) I can effectively use my knowledge of personality to improve my leadership skills	1	2	3	4(8)	5(6)	<b>55</b>
1(4)	2(9)	3(1)	4(1)	5	4) I understand the concept of Transactional Leadership	1	2	3(3)	4(8)	5(4)	<b>110</b>
1(4)	2(9)	3(1)	4(1)	5	5) I understand the concept of Transformational Leadership	1	2	3(3)	4(8)	5(4)	<b>110</b>
1(5)	2(6)	3(3)	4(1)	5	6) I understand how Full Range Leadership can strengthen my leadership skills	1	2	3(1)	4(9)	5(5)	<b>113</b>
1(2)	2(6)	3(4)	4(2)	5(1)	7) I understand Nebraska’s water laws	1	2	3(6)	4(7)	5(2)	<b>44</b>
1(1)	2(4)	3(6)	4(2)	5(1)	8) I understand Nebraska’s climate and weather	1	2(2)	3(2)	4(8)	5(2)	<b>30</b>
1(1)	2(5)	3(6)	4(3)	5	9) I understand Nebraska’s geology	1	2	3(2)	4(9)	5(4)	<b>51</b>
1(1)	2(6)	3(5)	4(3)	5	10) I understand Nebraska’s groundwater hydrology	1	2	3(3)	4(8)	5(4)	<b>53</b>
1	2(4)	3(4)	4(5)	5(2)	11) I understand major water quality issues in Nebraska	1	2	3(2)	4(9)	5(4)	<b>24</b>

**(Please turn over...)**

## Nebraska Water Leaders Academy Evaluation; Session 1, January 24-25, 2019

### 12) What is Your Main Takeaway from the first session of the Nebraska Water Leaders Academy?

- New leadership skills
- There is a capable and committed group of individuals who can impact how the state uses and protects our water resources.
- I enjoyed and learned from all the presenters. My main takeaway from the first session was Transformational Leadership.
- Transformational leadership info, very beneficial and a good presentation. A general overview of water law in NE, a good presentation. Climate lecture, a lot of great info but too early to absorb. A very knowledgeable speaker but please define terms, cover less info, print slides. Speaks quickly and hard to process. Pacific decadal oscillation? Polar vortex? Define and explain why these things exist and what they are. AMO? PAO? Geology - good info, well explained. Should focus on most important systems/formations, less material. Hydrogeology - good intro, like the Nearpod/interactive use. Presentation moves too slow.
- Acknowledging personality differences for employees/colleagues and varying leadership concepts and models
- Leadership - management “styles” fit with individual personality types - important when working with a group towards a common goal. Water issues are complicated and complex - we need to work together to find solutions.
- There is a lot of water issues and information that I didn’t think about. A lot of information to process. Great to know that there are different types of leadership styles and to know how to understand them.
- There is a lot I did not know.
- Water in Nebraska is a complicated, diverse, controversial topic with many different stakeholders.
- We will cover many different ways we deal with water.
- Water has an incredibly complex relationship with the world in general. It is our role as leaders to ensure we do not hinder these relationships to where they cease to exist.
- That I have a lot to learn about water and Nebraska’s unique geography.
- The importance of water in the state of Nebraska and how we need future leaders to help deal with the sustainability of future water use. How to understand my personality to become a transformational leader.
- Water is a people problem. Room for all personality types and a blend will give the best results.
- It’s more of an amazing opportunity than I realized! The information is excellent. I understand why it’s a highly recommended program. I can’t wait for the other sessions!

### 13) Additional Ideas, Comments, Suggestions, or Questions:

- Presenters who provided copies of slides to take notes on were very helpful. ON the climatology presentation: I think there was an assumption made on level of knowledge of the audience - there were a lot of terms and slides that we couldn’t interpret.
- Room was pretty cold on Thursday (conference room). Maybe print the name plates for the conference tables on both sides so you can read names on your side of the table also. Banana? Please - thank you (lunch Friday) that was solved! Comment on the working for the previous page - understanding (for me) is more than a 1 hr. Process - I have a better grasp of these topics but still need time to digest and learn - thanks for the introduction.
- Some people like their morning caffeine cold and carbonated.
- Make nametags (on tables) double-sided so you can see the people’s names sitting adjacent to you. Make a “group text” and send messages thru it (leaving now, break over, etc.).

# Nebraska Water Leaders Academy

March 21-22, 2019

Kearney, NE

**15 Returned**

Please provide two responses for each statement below. In the section labeled “BEFORE this Session” circle the answer that best describes you BEFORE you participated in this session of the Nebraska Water Leaders Academy.

Then, in the section labeled “Now, at the END of the Session” circle the answer that best describes you NOW that we have finished the session.

BEFORE this Session						Now, at the END of the Session					End Mean	% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree		
1(1)	2(7)	3(5)	4(2)	5	1) I understand eco-tourism in the Central Platte region from an environmental perspective	1	2	3(2)	4(9)	5(4)	4.43	63
1(1)	2(5)	3(8)	4(1)	5	2) I understand how to participate in or facilitate conversations that include differing perspectives or viewpoints	1	2	3	4(13)	5(2)	4.43	59
1(3)	2(8)	3(3)	4(1)	5	3) I understand issues related to ecology of the Central Platte region	1	2(1)	3(2)	4(10)	5(2)	4.14	81
1(6)	2(8)	3(1)	4	5	4) I understand issues important to the Loup Basin Reclamation District	1	2	3(6)	4(8)	5(1)	3.93	112
1(2)	2(6)	3(5)	4(2)	5	5) I understand the history of the Platte river and its role in our nation’s history	1	2	3(1)	4(10)	5(4)	4.50	70
1	2(9)	3(4)	4(2)	5	6) I understand economic impact of eco-tourism from the commercial perspective	1	2	3(3)	4(8)	5(4)	4.36	61
1(4)	2(6)	3(2)	4(3)	5(1)	7) I understand Nebraska’s compacts and decrees	1	2	3(3)	4(8)	5(4)	4.36	65
1(7)	2(6)	3(2)	4	5	8) I understand the South Loup Watershed Mngt Plan	1	2(1)	3(4)	4(8)	5(2)	4.00	124
1(2)	2(8)	3(4)	4(1)	5	9) I understand the ecological significance of the Central Platte valley & Rainwater Basin	1	2	3(4)	4(8)	5(3)	4.21	74

**(Please turn over...)**



## Nebraska Water Leaders Academy Evaluation; Session 2, Kearney, NE, March 21-22, 2019

### 12) What is Your Main Takeaway from this session?

- It's important to consider the ecological needs of a region in development plans and doing so can benefit people and society, not just the animals and plants
- The Platte plays a vital role in Nebraska's ecology and economy more than I imagined.
- Adaptive management is a good thing. The Financial Boost the cranes are.
- I had a pretty good grasp of ecotourism in Nebraska. I own a river outfitting business in the Sandhills and understand the impacts of that. My Knowledge of the Platte River Basin in General has greatly increased. The panel on Thursday was the biggest help for me on gaining understanding.
- The importance of the Platte River and its importance to the sandhill cranes. The sandhill cranes play an important role in bringing economic impact to Kearney.
- Magnitude of complex water issues. Extensive/impressive mind power actively involved in problem solving. Funding is critical - educating those that hold the purse strings is vital.
- Platte river and its challenge, are extremely important to Central Nebraska
- The importance of collaboration between multiple stakeholders
- Ecotourism
- It was a great session. I got a lot of good out of this
- Keep other people's views and ideals in mind as you work with them, appreciate better understanding. I appreciated the discussion on our homework assignment. Panel presentation/discussion was very informative.
- The different water issues that are around the state. Learned about ecotourism in Nebraska.
- I have two: 1) The discussion on ecotourism made me think about it more as a way to increase public awareness of our natural water resources and the net effect of doing so - that it can help bring in support and dollars and willingness to conserve them, but we would also have to closely manage the impacts of concentrating people into these sensitive natural areas. And, it made me think of identifying resources that we take for granted growing up here. 2) Mike Jess's presentation on the 5 instruments of compacts/decrees was a great explanation of those - I feel like it really helped me understand what NE has for those instruments, and why, and how they work.
- Loved the Platter River history. River/water dynamics for tourism & recreation are as important as agriculture. Appreciate this view point
- Also liked the diversity/conflict information
- Another GREAT SESSION

### 13) Additional Ideas, Comments, Questions:

- I liked the informal Wednesday gathering, though I preferred the smaller group conversations over the large group discussions.
- Great facilities - good food
- Getting out to Rowe would have been great, but that may have been more of a day than most would be able to handle. The scheduled breaks in the day are great.
- I really enjoyed Michael Farrell presentation. It really inspired you to become a better person and to take care of the beauty that is around us.
- Informal get together Wed. night was good - I really enjoyed the facility and dining.

- Add a walking session or similar activity to allow chance to stretch legs mid-day
- Like getting together, and hearing from alums, but switch back to networking conversations not full group.
- I think the night before get together is beneficial.
- Liked the informal meeting the night before on Wed. night. A good way to learn more about the Academy and the people involved in the Academy.
- Comment: Several expert speakers forget that we don't all know the background/basics of what they are talking about, or the acronyms they use. It would be helpful if they just gave a basic explanation of programs, acronyms, etc. Many people are familiar with NRD processes and work, but I don't have background on a lot that is familiar to them. Comment: Thursday is such a long day of sitting - how about a walking debrief time or walking Q & A times, or something to get us up and out just a little bit? :) Comment: Meeting on Wednesday night - just for informal talk - was/is great!
- The pre gathering was good informed interaction!
- I think it would be good if each participant gave a presentation (20 min) about what they do

# Water Leaders Academy

May 16-17, 2019

Omaha, NE

**14 Returned**

Please provide two responses for each statement below. In the shaded section labeled “BEFORE this WLA Session” circle the answer that best describes you BEFORE you participated in this session of the leadership academy.

Then, in the section labeled “Now, at the END of this WLA Session” circle the answer that best describes you NOW that we have finished the session.

BEFORE this Session						Now, at the END of this Session					End Mean	% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree		
1(7)	2(5)	3(1)	4(0)	5(1)	1) I understand Omaha’s sewer separation project (i.e. CSO, combined sewer overflow)	1(0)	2(1)	3(0)	4(9)	5(4)	4.14	132
1(6)	2(4)	3(3)	4(1)	5(0)	2) I understand Papio-Missouri NRD flood control projects in the Omaha metro area	1(0)	2(0)	3(0)	4(12)	5(2)	4.14	115
1(9)	2(3)	3(0)	4(1)	5(1)	3) I understand Metropolitan Utilities District (MUD) water and wastewater treatment projects in Omaha	1(0)	2(0)	3(3)	4(6)	5(5)	4.14	142
1(9)	2(5)	3(0)	4(0)	5(0)	4) I understand Ostrom’s principles of common pool resource management	1(0)	2(1)	3(5)	4(8)	5(0)	3.50	158
1(4)	2(6)	3(4)	4(0)	5(0)	5) I understand how to lead innovation for personal and organizational change	1(0)	2(0)	3(2)	4(8)	5(4)	4.14	107
1(9)	2(2)	3(2)	4(0)	5(1)	6) I understand the State Revolving Fund Program	1(0)	2(1)	3(5)	4(7)	5(1)	3.43	100
1(3)	2(7)	3(1)	4(2)	5(1)	7) I understand risk communication	1(0)	2(1)	3(2)	4(8)	5(3)	3.93	67

**(Please turn over...)**

## Water Leaders Academy Evaluation; Session 3, Omaha NE, May 16-17, 2019

### 8) What is Your Main Takeaway from this session?

- I didn't realize how much planning and how hard it was to get projects done. I also think that it's awesome there are so many people always working on new solutions to solve the water issues.
- Trust - collaboration - communication - risk management techniques. Think outside the norm - think big, bold in problem solving. All sessions provide great 'tools' for problem solving & leadership. Leadership is not just - managers - dept heads - movers & shakers are techs too
- Large cities have large water and financial implications
- The Omaha CSO separation is a massive undertaking
- Lots of \$ and scale in our urban areas, but are actually easier to get done than in rural areas because of lower \$/person and more willingness for collective action.
- The concept of engaging in water resources leadership at the local level, with ability to develop trust, really hit home with this session. The issue, or block, is how to engage in that leadership, through what avenue, and how to get going on that avenue. We should (we = Nebraska) lead the conversation for the future - maybe we can make use of big tech, but we need policy/practice to be in the driver's seat.
- Mud - the water treatment of Omaha and learned about all the different communities that it provides clean water too.
- I liked learning about the combined sewer/stormwater system & how the city is working to change it. All the big development projects agreed that slow timelines are frustrating, and I realized they're always working toward progress, so when it looks like a project has come to a halt there is likely something happening behind the scenes to make progress, so as a member of the public I can be patient & understanding & less frustrated.
- The overall water system (drinking & waste) in Omaha is incredibly complex.
- The main takeaway for me is how far we have come when it comes to water treatment over the past 100 years and how the future is changing.
- The tour was great. MUD was awesome!
- I think the aspect of leading change was my biggest take away. It isn't necessarily about making a change now but getting the ball rolling. Risk communication very important in my job. Taken course before.

### 9) List one specific skill or concept that you learned during this session, and describe how you will apply it in your work.

- One skill I learned was how to be a more effective leader.
- Use my "animal" likeness awareness to use best skills (management) to effectively lead and be a good team member.
- Thinking big is the best way to get even small things started
- Risk communication - I'll try to incorporate this idea
- The concept that existing governance of our water resources may not be the best it can be. I try to, and will continue to see the big picture and challenge the status quo, when appropriate
- Risk communicating principles will be incorporated into all of my communication opportunities: presentations, articles, flyers, etc.
- Strategic thinking/futuristic thinking is a strength of mine. I can, could, spend time thinking how I might put this to use in water leadership.
- Leadership - there are many different definitions for leadership. You don't have to be the one making the final decision but the one who helps get to the final decision.
- I liked the innovation/stretch your thinking session. In the future I'll try to think more outside the box.

- Risk communication - the 7 cardinal rules. Dealing with growers, being honest & open is something I've tried doing but I need to incorporate more sources to further my points.
- One specific skill that I learned is how things are changing and how rapidly they are changing. It is important to be open but also to dream big so we can solve the problems of the future.
- I try to lead innovation in my career to help develop programs and policy.
- More critical thinking of the issues and making a conscious effort to follow through.

**10) Suggestions to the Academy for Future Consideration (i.e. topics, presenters, activities, information to share, etc.)?**

- I would have liked to have been able to go through the entire sewer treatment plant & water plant, longer time at the tour spots.
- I've enjoyed the sessions - you've done a good job.
- How to build trust: recommend one of extension leaders trained in Trust Edge by David Horsager
- Thursday was a great day - very informative trips and presentations! Keep it! :) As mentioned above: I would like to see conversation/topic on avenues/how to get on a track, (where to go?) to make an impact. Thank you!!
- How to build trust & credibility when interacting with a new audience, especially if you're a new person entering or working with an established group.
- I really enjoyed the field trips and think that hands-on learning is important for the Water Leaders Academy.
- More time @ MUD. I thought Ann Bleed's presentation was somewhat negative towards the current water governing system. Pro DNR. Liked the info, not how it was presented. Keep bringing Steve Wolf Back! He's very good!
- In a city like Omaha maybe MS4 or Industrial stormwater.

# Nebraska Water Leaders Academy

July 18-19, 2019

Scottsbluff, NE

**16 Returned**

Please provide two responses for each statement below. In the section labeled “BEFORE this Session” circle the answer that best describes you BEFORE you participated in this session of the Water Leaders Academy.

Then, in the shaded section labeled “Now, at the END of the Session” circle the answer that best describes you NOW that we have finished the session.

BEFORE this Session						Now, at the END of the Session					End Mean	% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree		
1(2)	2(2)	3(7)	4(3)	5(2)	1) I understand the importance of natural resources to community development.	1(0)	2(0)	3(2)	4(9)	5(5)	4.19	37
1(2)	2(7)	3(4)	4(3)	5(0)	2) I understand the history of Nebraska’s irrigation and public power districts.	1(0)	2(0)	3(1)	4(13)	5(2)	4.06	63
1(4)	2(7)	3(4)	4(3)	5(0)	3) I understand the development of the integrated water system in the North Platte River Basin.	1(0)	2(0)	3(2)	4(12)	5(2)	4.00	52
1(9)	2(4)	3(2)	4(1)	5(0)	4) I understand water markets	1(0)	2(0)	3(5)	4(7)	5(4)	3.94	133
1(2)	2(5)	3(4)	4(3)	5(1)	5) I understand historical and current NRD programs and projects in the Nebraska panhandle.	1(0)	2(1)	3(2)	4(11)	5(1)	3.80	39
1(8)	2(3)	3(3)	4(1)	5(0)	6) I understand modeling projects that Thad Kuntz & Adaptive Resources have been involved with in the Panhandle.	1(0)	2(0)	3(3)	4(12)	5(0)	3.80	111

**(Please turn over)**

## Nebraska Water Leaders Academy Evaluation; Session 4, Scottsbluff, NE, July 18-19, 2019

### 7) What is Your Main Takeaway from this session?

- The irrigation issues for western NE are unique. Good to see the systems and how they are set up.
- ... that there is a threat of water scarcity in western NE that impacts so many people. The canal tunnel danger was very unfortunate but timely for our session to explore this concern.
- The importance of irrigation projects to settle western areas. There is also a lot of old infrastructure. Future financial needs will be very large!
- 1. I have a much better feel for and understanding of the history and operation, and structure, of the integrated water system in western Nebraska and the NRD's. 2. Water markets - I had no idea. What an eye opener! 3. There are young, intelligent, capable women coming into this area in positions which can drive the future - e.g., manager of the UNL Panhandle feedlot & Richael from Mammoth Trading!
- More knowledge of where our water comes from and how it is valued. General application water managers. Very interesting!
- North Platte river valley is 'fill and spill' with no groundwater connection, so relies on surface water.
- The Reservoir system and irrigation are vital/complicated issues that allow agriculture to exist and continue in the panhandle. Community leadership building alliances are also vital to small rural town vitality. Marketing 'innovations' and smart use and development of water is promising (banking, pooling, "trading") if governed well.
- I find it amazing how we get water to all the needs of the people. The water markets are very interesting.
- I learned what water markets are & how they work. I really liked the interactive activity.
- I was aware of the inefficiency of surface water irrigation, but I was not aware of the importance of this inefficiency on return flows.
- Continued networking w/WLA participants. Further understanding of unique water system in the Platte System.
- The main takeaway from this session would be the feedlot aspect. I didn't realize everything that they do to keep the nitrates down and how they use and reuse the water.
- How important irrigation is for western Nebraska.
- Irrigation water delivery systems in the western part of the state are much more complex compared to how our family farm gets irrigation water in NE Nebraska.
- Surface water is a large resource to be managed in the panhandle

### 8) List one specific skill or concept that you learned during this session, and describe how you will apply it in your work.

- I work regularly with NRDs. Seeing the issues the NRDs in the Panhandle face is beneficial in my job.
- I am thinking about how water markets can be used for establishing in-stream flows for aquatic species (where possible).
- I'm not really sure yet how what I learned this session will apply in my work; I will be processing on it. I know that awareness of integrated water management in western NE will enhance my total picture of the state.
- More knowledge of where our water comes from and how it is valued. General application water managers. Very interesting!
- Using social capitals framework for bringing together regional approached for water qual.



- More of a comment: The diversity of the W.C. group and its understanding of the irrigation reservoir and delivery system reminds me to be patient and help leaders that live in other areas of the state understand the groundwater/surface water concerns, and what that means to our economy, way of life
- The water market. I would like to take this back to find out how my Company does this I really like to see so many people working on the water issues.
- Good leadership is important for integrating groups & building strong communities
- I am reminded each session that knowledge is key. Some topics I 'thought' I had an informed opinion about - I now have a better understanding.
- Water markets are particularly interesting not sure I can apply to my work at this time. Community context, community capital framework/stages etc. was very educational, I believe I can use this daily in my work by keeping an open mind about different opportunities and long term planning, as well as continued leadership and networks across the state.
- Understanding the NRD's and what they do is something that will help me do my job better.
- Water markets: water transfers are something new I learned. Not sure how I will use it in my work, but I'll understand now if someone discusses this with me in my profession.
- Complexity of water markets and various steps needed to balance them

#### **9) Suggestions to the Academy for future consideration (i.e. topics, presenters, activities, information to share, etc.)?**

- The tours were great across the board. The irrigation tour was long. Would recommend going to the diversions and point out items along the travel. Extra stops for looking at the Canal didn't seem necessary. It seemed like info that could have been talked about while driving. There was a lot of similar info in many of the presentations. Maybe check with other entities
- Very good session!
- Impression that women in the field were featured in this session. Nice to see a balance.
- Hear from progressive growers about latest tools for irrigation, or from pivot manufacturer.
- I really like having hands on examples.
- It was difficult to hear Michael on the bus
- Further considerations that off channel holding ponds may be a viable alternative to take advantage of - high flows (SCV) or off season flows along w/the canal systems to fill GW aquifer and increase/maintain return flows to Platte system.
- I think it would be good to have WLA participants give a small presentation (~5 min or so) on their specific job duties/daily tasks
- Water for Food -
- UNL - I'd like to hear from students from other countries studying in water related areas. We had an intern from Rwanda this summer - it was so interesting
- ? - Someone that helps the group understand appropriations and allocations - water management tools by NRD

# Nebraska Water Leaders Academy

September 12-13, 2019

Valentine, NE

**13 Returned**

Please provide two responses for each statement below. In the section labeled “BEFORE this Session” circle the answer that best describes you BEFORE you participated in this session of the Water Leaders Academy.

Then, in the shaded section labeled “Now, at the END of the Session” circle the answer that best describes you NOW that we have finished the session.

BEFORE this Session						Now, at the END of the Session					End Mean	% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree		
1(2)	2(5)	3(4)	4(2)	5(0)	1) I understand the intersection of science and policy	1(0)	2(1)	3(4)	4(7)	5(1)	3.64	42
1(4)	2(4)	3(2)	4(2)	5(1)	2) I understand management issues associated with Niobrara River stakeholders (panel discussion)	1(0)	2(0)	3(5)	4(6)	5(2)	3.79	56
1(6)	2(5)	3(2)	4(0)	5(0)	3) I understand the Niobrara River Valley Geology	1(0)	2(0)	3(5)	4(6)	5(2)	3.79	121
1(4)	2(6)	3(1)	4(2)	5(0)	4) I understand the unique ecosystem of the middle Niobrara River	1(0)	2(1)	3(3)	4(7)	5(1)	3.79	83
1(8)	2(3)	3(1)	4(0)	5(1)	5) I understand the Bazile Groundwater Management Plan	1(0)	2(0)	3(7)	4(5)	5(1)	3.64	89
1(4)	2(6)	3(2)	4(1)	5(0)	6) I understand the NDEQ Wellhead Protection Program	1(0)	2(1)	3(4)	4(7)	5(1)	3.64	76

**(Please turn over)**

## Nebraska Water Leaders Academy Evaluation; Session 5, Valentine, NE, September 12-13, 2019

### 7) What is Your Main Takeaway from this session?

- Very important, if you want to address issues and improve those issues to work together - listen and respect others viewpoints.
- The Niobrara River is a bed rock river
- The Niobrara River is very dynamic and varies greatly from the headwaters to the confluence. Management of a basin is very complicated, there are many very important concerns or goals for the management within 1 river basin. These goals etc. do not always mesh together. It will take work and cooperation to reach good decisions.
- How different each River system is within Nebraska.
- Loved the Niobrara Geology instruction.
- The Niobrara River while still much less developed in some ways still faces its own set of unique challenges.
- Really the importance of protecting the natural water supply. I also really enjoyed Matt Joeckel' s talk. He is very informative.
- The Niobrara River is much more unique than I ever realized. I have a much better opinion & knowledge behind the river and its ecosystem.
- The diversity of geology & micro-climate along the Niobrara.
- The different types of geology that happens in the Niobrara River banks.
- My main takeaways from this session are.
  - It's easy to take an "us v. them" mentality, or focus on the disagreement, when we just think about our individual technical areas of work or expertise. But when we get to know each other as humans, and develop a relationship, then we have the chance to actually work out solutions together. I was reminded of this in this session.
  - Seeing and thinking about geological changes in the Niobrara, and the mechanisms which expose those, will help me look at & assess other streams in NE.

### 8) List one specific skill or concept that you learned during this session, and describe how you will apply it in your work.

- Paddling & kayak engineering.
- It was interesting to learn about the geology of the river & think about how it affects the use and behavior of the river.
- Increase communication efforts with colleagues and partners, by engaging everyone in efforts to understand all sides of an issue.
- Don't get in kayak without putting on a Life Jacket!
- Again the geology of the Niobrara.
- Figuring out how to reach different stakeholders through different means and options.
- After watching the panel discussion and the animosity I see between NRD and the Federal Government, I have learned we need to be better at seeing both sides of the issues.
- Using the Froude number to determine if a flow is sub/super critical or not.
- This session was a good reminder of the emotion vs. scientific aspects of water topics.
- Understanding nitrates, continue to understand how to learn about nitrates and how to educate people about nitrates.
- Polygonal ground - in NE history & in Arctic. I don't know yet what I'll do with this knowledge, but it is cool!

**9) Suggestions to the Academy for future consideration (i.e. topics, presenters, activities, information to share, etc.)?**

- This was a great session. Having Matt explain things along the river was really helpful.
- Putting a team in TAPS. CNPPID, Devin Brundage - The History of Lake Mac and the Tri-County System.
- There seemed to be lots of questions in the group about the Scenic River designation. Maybe a Parks Service speaker?
- Suggestion: give more time to Matt Joeckel - it felt like such a disappointment not to be able to hear all of his material & info. On the other hand, the science/policy did not have so much to offer and seemed disjointed. Also, I feel like a lot of presenters make large assumptions on the base knowledge of the audience, rather than laying groundwork of explaining what they do and their topic!

# Nebraska Water Leaders Academy

November 21-22, 2019

Nebraska City, NE

**14 Returned**

Please provide two responses for each statement below. In the sections labeled “BEFORE this Session” and “BEFORE the Academy” circle the answer that best describes you BEFORE you participated in this session of the Academy and the Water Leaders Academy. Then, in the sections labeled “Now, at the END of the Session” and “Now, at the END of the Academy” circle the answer that best describes you NOW that we have finished the session and the Academy.

***Congratulations on your accomplishment!***

BEFORE this Session						Now, at the END of the Session					End Mean	% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree		
1(1)	2	3(7)	4(6)	5	1) I understand the future of ag production and water use in Nebraska	1	2	3(1)	4(11)	5(2)	4.07	24
1(1)	2(4)	3(4)	4(4)	5(1)	2) I understand how to get involved with or serve on public boards or service organizations	1	2	3(5)	4(8)	5(1)	3.71	24
1(3)	2(6)	3(3)	4(2)	5	3) I understand Missouri River management past, present, and future	1	2	3	4(10)	5(4)	4.29	88
1(1)	2(2)	3(8)	4(3)	5	4) I understand the economics of water	1	2	3(6)	4(8)	5	3.57	22
1(1)	2(4)	3(2)	4(7)	5	5) I understand motivation to serve on public boards and/or service organizations	1	2(1)	3(3)	4(6)	5(4)	3.93	28
1(1)	2(1)	3(6)	4(5)	5(1)	6 ) I understand how to communicate science to the public	1	2	3(2)	4(8)	5(4)	4.14	26
1(1)	2(3)	3(7)	4(3)	5	7) I understand how to get involved in community leadership opportunities	1	2	3(5)	4(4)	5(5)	4.00	40
BEFORE the Academy						Now, at the END of the Academy						
1(1)	2(1)	3(7)	4(4)	5(1)	8) I use my understanding of personality types	1	2	3(1)	4(8)	5(5)	4.29	33
1(2)	2(4)	3(7)	4(1)	5	9) I use transformational leadership principles	1	2	3(3)	4(9)	5(2)	3.93	57
1(1)	2(1)	3(4)	4(5)	5(3)	10) I can participate well in conversations that include differing perspectives or viewpoints	1	2	3(2)	4(5)	5(7)	4.36	22
1(1)	2(4)	3(4)	4(3)	5(1)	11) I can lead personal or organizational innovation	1	2	3(3)	4(7)	5(3)	4.00	37
1(1)	2(4)	3(2)	4(4)	5(3)	12) I am involved in water policy issues	1	2(2)	3(2)	4(5)	5(5)	3.93	20
1(1)	2(4)	3(6)	4(2)	5(1)	13) I am a leader in the area of water	1	2	3(2)	4(7)	5(5)	4.21	48

**(Please turn over)**

## Water Leaders Academy Evaluation; Session 6, Nebraska City, NE, November 21-22, 2019

### 8) What is Your Main Takeaway from this session?

- Great venue!
- Get engaged and involved
- Get involved, communicate effectively
- Motivation and value to join a board or committee
- The different types of Boards that you can be on and what is required of a board
- How innovation and getting involved can help make changes
- Board service
- I learned much more about Boards of Directors and how they are formed and function
- There's always more than one!
  - A complete picture of the history of the Missouri River channelization - and that the USACE warned Congress of the flooding (& other) ramifications of the navigation/channelization projects
  - Really working on & sorting through where & how to get involved & serve from here
- Info NE Missouri River
- The importance of precision agriculture and marketing. I have family that farm and it could be beneficial for them.
- The necessity to work together is vital as we work towards a common goal of water management. Understand other perspectives. Board involvement and considerations for serving on a board.
- I really enjoyed the presentation on the history of the Missouri River. I also appreciated the practical tips for being on a board

### 9) List one specific skill or concept that you learned during this session, and describe how you will apply it in your life/work.

- Considering more public service. Started discussion on a possible 2026 State Senate run
- Apply motivation and persuasion to bring vision and leadership to projects at work
- Effective communication
- Communication through letters - when I have to respond to someone I will know what
- Innovation is the future and must be open to change
- Effective communication; adding more details/numbers, but don't overwhelm with info
- I'll take the breakdown of how to find the right place, breakdown the motivation to serve; and apply it to a plan/effort to serve
- Missouri River info. Very good, very informative, raise awareness
- Ann's talk was good with learning how to write to the general public correctly.
- Engage all participants or "stakeholders" in any issue that may arise. Frank conversations can occur w/out fighting, although you may not always come to an agreement.
- I hope to get involved w/the One Health initiative

### 9) What is Your Main Takeaway from the overall Nebraska Water Leaders Academy?

- Excellent program and info. Have recommended.
- 1. Nebraska has an amazing water resource system of management, built by a history of great leaders. It is our task to build on the shoulders of giants. 2. It empowered me to believe "I am a good leader".

- Be a leader and understand different perspectives
- People are very passionate about water in Nebraska and it takes creative collaboration to address the various issues and make positive progress for all
- The networking with people and the different aspects of water or water issues
- I have really enjoyed all aspects of this class. This class will help me go forward and start in leadership skills.
- Take a more involved role in water.
- Be more comfortable/confident in taking leadership roles and recognizing who can contribute & how to projects.
- Relationships with other leaders!
- Networking. All of the focus involved w/protecting & maintaining our water. The values of this important resource, water
- Great opportunity to network & become more rounded. Learned a lot about water topics I wasn't familiar with.
- Open mindedness is important. Understanding your personality along w/others is important in "seeing" various points of views and working together.
- I appreciated learning the many ways people work in water careers & meeting people who can answer my questions and collaborate on future projects.

#### **10) Suggestions to the Academy for Future Consideration (i.e. topics, presenters, activities, information to share, etc.)?**

- Go to a Wed/Thurs format. Could lessen the load on day 1 and go to 2 or 3 on day 2.
- Need a bit more communication about logistics (hotels, meals, etc.). Having a full syllabus at the beginning of the year would be nice.
- Have each member share exactly what they do at beginning
- Great class
- Tour of Lake Mac and the CNPPID & NPPD systems
- Lots of great sessions! One suggestion would be to have slightly longer breaks because the days are very full. Thank you.
- Could there be more specifics on boards/ways of guiding water management besides NRD's? What other water boards or even organizations related to water in the state, are there? NWBA? NWRA? Others?
  - I'd love to see more on floodplains & management
  - Could there be more focus/thought earlier on in the year on what/how we can be leaders in NE water?
  - Mostly - thank you for the thought, effort, and intention to this Academy experience!
- All slides in advance! Something to take notes on during the presentations. No need for shirts, jackets, etc.
- A lot of leadership talks were based on water it seemed like. Maybe some more general leadership with people. My wife is a mental health therapist and has done teaching and training on working with personalities and working with different demographics. She may be willing to do something. I would be happy to present in the future, maybe Scottsbluff (this is from Cay).
- Continue the great work! Really appreciated the presenters on personality types and leadership principles, please continue those. I would still like to participate in the Omaha area class if it works out next year (this is from Lynn)
- Consider asking presenters to not use traditional power points and encouraging them to find more engaging ways to teach their information. Sessions that are more engaging & discussion-based were more memorable & I learned more. Even taking time to interact w/the class & go around the room asking questions was nicer than simply passively listening to a power point presentation. Could also start panels by asking questions instead of waiting to the end because we always seemed to run out of time for them after panelists finish their introductions.
  - Idea for water leaders group project
    - Identify topics for policy briefs
    - Let large group self-select into topic
    - Output is a one- or two-page policy brief report that Water Leaders can brand & distribute/build a library of resources
    - Creates different level of engagement w/course speakers









