

University of Nebraska - Lincoln
DigitalCommons@University of Nebraska - Lincoln

Conservation and Survey Division

Natural Resources, School of


1-1999

2018 Nebraska Water Leaders Academy - Final Report

Mark E. Burbach

University of Nebraska at Lincoln, mburbach1@unl.edu

Follow this and additional works at: <http://digitalcommons.unl.edu/conservationsurvey>

 Part of the [Geology Commons](#), [Geomorphology Commons](#), [Hydrology Commons](#), [Paleontology Commons](#), [Sedimentology Commons](#), [Soil Science Commons](#), and the [Stratigraphy Commons](#)

Burbach, Mark E., "2018 Nebraska Water Leaders Academy - Final Report" (1999). *Conservation and Survey Division*. 643.
<http://digitalcommons.unl.edu/conservationsurvey/643>

This Article is brought to you for free and open access by the Natural Resources, School of at DigitalCommons@University of Nebraska - Lincoln. It has been accepted for inclusion in Conservation and Survey Division by an authorized administrator of DigitalCommons@University of Nebraska - Lincoln.

2018 Nebraska Water Leaders Academy – Final Report

Dr. Mark E. Burbach

University of Nebraska–Lincoln
School of Natural Resources
Conservation & Survey Division

December 31, 2018

Open-File Report (OFR) 204

Nebraska Water Leaders Academy

Water Futures Partnership-Nebraska

waterleadersacademy.org

Partner

University of Nebraska-Lincoln *This work was supported by the USDA National Institute of Food and Agriculture, Hatch/Evans-Allen/McIntire Stennis project 1011420.*

Funding

Nebraska Environmental Trust

The Academy is funded through a grant from the Nebraska Environmental Trust. The Trust is funded by proceeds from the Nebraska Lottery and has awarded more than \$178 million to more than 1,300 conservation projects across the state of Nebraska since 1994.

2018 Sponsors

Platinum:

- Diamond Plastics Corporation

Gold:

- Central Nebraska Public Power & Irr. Dist.
- The Henry A. Koch Co.
- Lincoln Community Foundation
- Lindsay Corporation
- Nebraska Public Power District
- Nebraska State Irrigation Association
- Pathfinder Irrigation District
- Reinke Manufacturing Co., Inc.
- Valmont Industries, Inc.

Bronze:

- Ainsworth Irrigation District
- Ann Bleed
- Carol Jess, CJJ Communications
- Farmers Irrigation District
- Farwell Irrigation District
- Frenchman Cambridge Irrigation District
- Tom Knutson, Water Management Solutions
- Gering-Ft. Laramie Irrigation District
- Michael Jess, Water Res. Engr.
- North Loup Public Power & Irr. Dist.
- Lee & Rita Orton
- Roric Paulman, Paulman Farms
- Twin Loups Irrigation District

Contributing:

- Karen Amen & Jim Goeke
- Mark Burbach
- Jeff Fassett
- Flowserve
- John Heaston
- Mirage Flats Irrigation District
- North Platte NRD
- Sargent Irrigation District
- Simmons Olsen Law Firm
- Upper Big Blue NRD



Table of Contents

Introduction	1
Program Evaluation.....	4
Methodology	5
<i>Participants.....</i>	<i>5</i>
<i>Procedures</i>	<i>6</i>
<i>Measures</i>	<i>6</i>
Results from 2018 Nebraska Water Leaders Academy.....	9
Leadership Knowledge, Skills, and Behaviors – Participants’ Perspectives	9
Leadership Knowledge, Skills, and Behaviors – Raters’ Perspectives	11
2018 Session Evaluations.....	14
Cumulative Nebraska Water Leaders Academy Results	14
Leadership Knowledge, Skills, and Behaviors – Participants’ Perspectives.....	14
<i>Cumulative Participants</i>	<i>14</i>
Leadership Knowledge, Skills, and Behaviors – Raters’ Perspectives	17
<i>Cumulative Raters.....</i>	<i>17</i>
Discussion.....	20
Team Projects.....	20
<i>2018 Class Projects</i>	<i>20</i>
<i>Past Class Projects</i>	<i>21</i>
Academy Alumni.....	22
Future Plans	23
Summary.....	24
References.....	25
Appendix I.....	28
Appendix II.....	31

List of Tables

Table 1: Curriculum topics presented by experts at the 2017 Nebraska Water Leaders Academy (1 = Session).....	3
Table 2. Internal Reliabilities (α) for Academy Assessment Scales.....	8
Table 3. Results of Paired Samples <i>t</i> -Tests Comparing Participants' Transformational Leadership Behaviors Before and After the Academy (N = 19).....	9
Table 4. Results of Paired Samples <i>t</i> -Tests Comparing Participants' Champion of Innovation Behaviors Before and After the Academy (N = 19).....	10
Table 5. Results of Paired Samples <i>t</i> -Tests Comparing Participants' Nebraska Water Knowledge and Behavior Before and After the Academy (N = 19).....	10
Table 6. Results of Paired Samples <i>t</i> -Tests Comparing Participants' Civic Capacity Before and After the Academy (N = 19).....	11
Table 7. Results of Paired Samples <i>t</i> -Test Comparing Participants' Entrepreneurial Leadership Behavior Before and After the Academy (N = 19).....	11
Table 8. Results of Independent Samples <i>t</i> -Tests Comparing Raters' Perceptions of Participants' Transformational Leadership Behaviors Before and After the Academy.....	12
Table 9. Results of Independent Samples <i>t</i> -Tests Comparing Raters' Perceptions of Participants' Champion of Innovation Behaviors Before and After the Academy.....	12
Table 10. Results of Independent Samples <i>t</i> -Tests Comparing Raters' Perceptions of Participants' Nebraska Water Knowledge and Behavior Before and After the Academy.....	13
Table 11. Results of Independent Samples <i>t</i> -Tests Comparing Raters' Perceptions of Participants' Civic Capacity Before and After the Academy.....	13
Table 12. Results of Independent Samples <i>t</i> -Test Comparing Raters' Perceptions of Participants' Entrepreneurial Behavior Before and After the Academy.....	14
Table 13. Results of Paired Samples <i>t</i> -Tests Comparing Cumulative Participants' Transformational Leadership Behavior Before and After the Academy (N = 118).....	15
Table 14. Results of Paired Samples <i>t</i> -Tests Comparing Cumulative Participants' Champion of Innovation Behaviors Before and After the Academy (N = 118).....	16
Table 15. Results of Paired Samples <i>t</i> -Tests Comparing Cumulative Participants' Nebraska Water Knowledge and Behavior Before and After the Academy (N = 118).....	16
Table 16. Results of Paired Samples <i>t</i> -Tests Comparing Cumulative Participants' Civic Capacity Before and After the Academy (N = 54).....	17
Table 17. Results of Paired Samples <i>t</i> -Test Comparing Cumulative Participants' Entrepreneurial Leadership Behavior Before and After the Academy (N = 118).....	17
Table 18. Results of Independent Samples <i>t</i> -Tests Comparing Cumulative Raters' Perspectives of Participants' Transformational Leadership Behaviors Before and After the Academy.....	18
Table 19. Results of Independent Samples <i>t</i> -Tests Comparing Cumulative Raters' Perspective of Participants' Champion of Innovation Behaviors Before and After the Academy.....	18

Table 20. *Results of Independent Samples t-Tests Comparing Cumulative Raters' Perspective of Participants' Nebraska Water Knowledge and Behavior Before and After the Academy* 19

Table 21. *Results of Independent Samples t-Tests Comparing Cumulative Raters' Perspective of Participants' Civic Capacity Before and After the Academy* 19

Table 22. *Results of Independent Samples t-Test Comparing Cumulative Raters' Perspective of Participants' Entrepreneurial Leadership Behavior Before and After the Academy* 20

Table of Figures

Figure 1. Flow chart of the Nebraska Water Leaders Academy program evaluation..... 5



2018 Nebraska Water Leaders Academy class

Front Row (L to R): Matt Greenway, The Harry A. Koch Company, Lincoln; Marie Krausnick, Upper Big Blue NRD, York; Carla McCullough, Nebraska Department of Environmental Quality, Lincoln; Kate Gibson, Robert B. Daugherty Water for Food Global Institute, Lincoln; Brooke Stansberry, U.S. Fish & Wildlife Service, Wood River; Dan Egeland, Nebraska Department of Health and Human Services, Lincoln; Matthew Person, Lindsay Corporation, Omaha; Ansley Mick, Nebraska Farm Bureau Federation, Lincoln; David Potter, Lower Platte South NRD, Lincoln.

Back Row (L to R): Jeremy Gehle, Nebraska Department of Natural Resources, Lincoln; Adam Hoelsing, Simmons Olsen Law Firm, P.C., Scottsbluff; Patrick Farrell, Headwaters Corporation, Kearney; Andrew Pierson, National Audubon Society, Gibbon; Amos Lange, North Loup River Public Power and Irrigation District, Ord; Lance Philben, Ainsworth Irrigation District, Ainsworth; Jeff Henson, JEO Consulting Group, Inc., Lincoln; Travis Preston, North Platte NRD, Scottsbluff; Ross Montgomery, Bostwick Irrigation District, Red Cloud; Steve Osterbuhr, Central Nebraska Public Power and Irrigation District, Holdrege.

Acknowledgements

We are extremely grateful to the Nebraska Environmental Trust and our sponsors for their support of the Academy. We couldn't do it without you! We greatly appreciate the assistance of Jodi Delozier, Ann Briggs, and Dakota Staggs, Graduate Research Assistants at UNL, for assistance at each session. We thank Dr. Matt Joeckel, UNL Conservation and Survey Division, for reviewing the report and providing insightful comments and suggestions. We are indebted to all the Academy presenters listed in the Appendix who shared their time and wisdom. And, we thank Academy alumni who are truly water leaders!

Executive Summary

Nineteen participants completed the 2018 Water Leaders Academy bringing the total number of graduates to 120 since the inception of the program in 2011. Assessment of participants' transformational leadership skills, champion of innovation skills, water knowledge and engagement, civic capacity, and entrepreneurial leadership behaviors showed a significant increase over the course of the year, from both participants' and their raters' perspectives. Feedback from participants was highly positive and constructive. Participant concerns were addressed, and only minor changes are planned for the 2019 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 beyond.

2018 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 and Taylor, 2013).

The Nebraska State Irrigation Association (NSIA), the state's oldest water association, 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.

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 eight 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 120 participants with a wide range of professional, geographic, and water resources backgrounds. Nineteen individuals participated in the 2018 Academy. The 2018 Academy consisted of six two-day sessions held in different communities (Lincoln, Kearney, Valentine, Scottsbluff, Omaha, and Nebraska City). The leadership component of the Academy was developed by Dr. Mark E. Burbach and Dr. Connie Reimers-Hild with contributions from accomplished faculty and staff at UNL (See Appendix 1). Nebraska water policy, law, and resource topics were addressed by leading experts in their respective fields from UNL; federal, state, and local agencies; NGOs; and other entities. Table 1 lists the curriculum topics covered in the 2018 Academy.

Table 1: Curriculum topics presented by experts at the 2017 Nebraska Water Leaders Academy
(¹ = Session)

Leadership	Policy/Law	Resource
Transformational Leadership ^{1,2,5,6}	Water Law ¹	NE Climate/Weather ¹
Personality ¹	Nebraska Legislature ¹	NE Geology ¹
Etiquette and Public Presence ¹	South Loup Watershed Management Plan ²	NE Groundwater Hydrology ¹
Diversity & Conflict ²	Compacts & Decrees ²	Water Quality in Nebraska ¹
Leading Innovation ³	Central Platte Water Projects ²	Ecological Importance of the Central Platte Valley & Rainwater Basin ²
Common Pool Resource Management ³	NDEQ Financial Assistance Programs ³	Ecology & Environmental Awareness ²
Community Capital ⁴	Nebraska's Public Power & Irrigation Districts History ⁴	Ecotourism – Commercial and Environmental Perspectives ²
Intersection of science and policy ⁵	North Platte Reservoir Syst. ⁴	Omaha's Combined Sewer Separation Project ³
Niobrara River Valley, The Past, The Present, The Future ⁵	North Platte Basin Integrated Water System ⁴	Niobrara Geology and Ecosystem ⁵
Involvement in Public Boards & Service Orgs ⁶	Water Markets ⁵	Panhandle Groundwater Modeling Projects ⁴
Networking ⁶	Natural Resources Districts ⁴	Niobrara River Water Issues ⁵
Empowerment ⁶	Bazile Groundwater Mngt Plan ⁵	
Motivation ⁶	Wellhead Protection in Nebraska ⁵	Municipal Water Supply & Wastewater ⁵
Community Involvement & Leadership Opportunities ⁶	Niobrara National Scenic River ⁵	Omaha Metro Flood Control Projects ⁵
Next Steps – Leadership Opportunities ⁶	Water Economics ⁶	Future of Ag Production ⁶
	Nebraska Water Investment Issues ⁶	
	Missouri River-Past, Present, Future ⁶	

This report summarizes the evaluation of the 2018 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 ninth Academy class in 2019.

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 2018 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 the participants is also being used to plan the 2019 Academy.

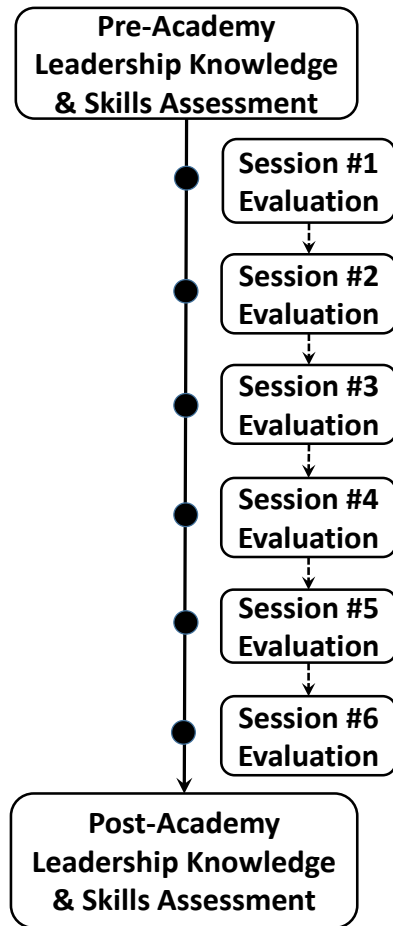


Figure 1. Flow chart of the Nebraska Water Leaders Academy program evaluation.

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 on-going and it includes cumulative results from all classes.

Methodology

Participants

All nineteen 2018 Academy participants completed the pre- and post-Academy

assessments of transformational leadership behaviors, champion of innovation behaviors, civic capacity, Nebraska water issues knowledge and behavior, and entrepreneurial leadership behaviors. There were five females and fourteen males. The participants' average age was 37.6 years with a range of 27 to 51.

Procedures

A research-based questionnaire was employed to assess changes in leadership skills among participants over the course of the Academy. Items were also developed to measure participants' Nebraska water issues knowledge and behavior. The survey was administered on-line using Qualtrics™ software. UNL Institutional Review Board (IRB) approval of the research was granted prior to beginning the assessment.

Academy participants were notified of the on-line questionnaire three weeks prior to the first Academy session in January 2018 and given instructions for the completion of the survey. The same process was repeated three weeks prior to the final session in November 2018. Participants were also asked to invite others with whom they have a professional relationship to rate their leadership behaviors. Participants sent raters an e-mail invitation that included the link to the on-line questionnaire.

Measures

The on-line questionnaire consisted of four research-based leadership assessments, and the questionnaire also has a section on participants Nebraska water knowledge and behavior. The first assessment was the Multifactor Leadership Questionnaire (MLQ-5) developed by Bass and Avolio (1995). The MLQ-5 (-leader and -rater) 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. The MLQ-5 has satisfactory reliability and validity (Bass and Avolio, 1995). 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 Champions of Innovation scale has satisfactory reliability and validity (Howell, et al. 2005). 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 the following dimensions:

Civic Drive: desire and motivation to be involved with social issues.

Civic Connections: social capital found in the leader's internal and external social networks that specifically enables and promotes the success of collaboration.

Civic Pragmatism: 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 behavior. 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. Internal reliabilities are reported in Table 2.

Table 2. *Internal Reliabilities (α) for Academy Assessment Scales*

	Transformational Leadership Pre-Academy	Transformational Leadership Post-Academy
Participant	.85	.84
Rater	.90	.88
Cumulative Participant	.89	.84
Cumulative Rater	.93	.90
	Innovation Pre-Academy	Innovation Post-Academy
Participant	.81	.87
Rater	.80	.87
Cumulative Participant	.86	.82
Cumulative Rater	.87	.88
	Awareness & Engagement Pre-Academy	Awareness & Engagement Post-Academy
Participant	.90	.93
Rater	.90	.89
Cumulative Participant	.89	.82
Cumulative Rater	.92	.92
	Civic Capacity Pre-Academy	Civic Capacity Post-Academy
Participant	.93	.94
Rater	.92	.95
Cumulative Participant	.91	.82
Cumulative Rater	.93	.95
	Entrepreneurial Leadership Pre-Academy	Entrepreneurial Leadership Post-Academy
Participant	.70	.78
Rater	.72	.76
Cumulative Participant	.70	.70
Cumulative Rater	.72	.76

Results from 2018 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 ($M = 2.81$, $SD = 0.39$) to post-Academy ($M = 3.08$, $SD = 0.33$); $t(18) = 3.46$, $p = 0.003$, $d = .75$. Results are summarized in Table 3. All four of the transformational leadership behaviors were greater at the end of the Academy.

Table 3. Results of Paired Samples *t*-Tests Comparing Participants’ Transformational Leadership Behaviors Before and After the Academy ($N = 19$)

Transformational Leadership Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen’s <i>d</i>
	M	SD	M	SD					
Idealized Influence	2.75	0.31	3.03	0.34	0.28	3.83	18	.001**	0.86
Inspirational Motivation	2.82	0.62	3.08	0.47	0.26	2.54	18	.021*	0.47
Intellectual Stimulation	2.71	0.54	3.08	0.44	0.37	3.44	18	.003**	0.75
Individual Consideration	2.95	0.40	3.14	0.39	0.19	2.28	18	.035*	0.48
Total Trans. Leadership	2.81	0.39	3.08	0.33	0.27	3.46	18	.003**	0.75

* $p < .05$, ** $p < .01$.

A paired-samples *t*-test also compared 2018 participants’ pre-Academy and post-Academy champion of innovation behaviors. Participants’ innovation behavior scores significantly increased from pre-Academy ($M = 3.05$, $SD = 0.44$) to post-Academy ($M = 3.30$, $SD = 0.45$); $t(18) = 3.77$, $p = 0.001$, $d = .56$. Results are summarized in Table 4. There was a significant increase in all three champions of innovation dimensions.

Table 4. Results of Paired Samples *t*-Tests Comparing Participants' Champion of Innovation Behaviors Before and After the Academy (*N* = 19)

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	2.74	0.65	3.13	0.61	0.39	3.53	18	.002**	0.62
Persistence under Adversity	3.12	0.50	3.26	0.50	0.14	2.39	18	.028*	0.28
Get Right People Involved	3.30	0.54	3.51	0.52	0.21	2.36	18	.030**	0.40
Total Champ. of Innov.	3.05	0.44	3.30	0.45	0.25	3.77	18	.001**	0.56

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

A paired-samples *t*-test was conducted to compare 2018 participants' pre-Academy and post-Academy Nebraska water issues knowledge and behavior. Participants' awareness of water issues significantly increased from pre-Academy ($M = 2.53$, $SD = 0.82$) to post-Academy ($M = 3.26$, $SD = 0.64$; $t(18) = 5.32$, $p = 0.000$, $d = .99$). Results are summarized in Table 5. There was a significant increase in participants engagement in water policy issues from pre-Academy ($M = 2.53$, $SD = 0.87$) to post-Academy ($M = 3.12$, $SD = 0.70$); $t(18) = 5.22$, $p = 0.000$, $d = .75$.

Table 5. Results of Paired Samples *t*-Tests Comparing Participants' Nebraska Water Knowledge and Behavior Before and After the Academy (*N* = 19)

Water Knowledge & Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Awareness	2.53	0.82	3.26	0.64	0.73	5.32	18	.000***	0.99
Engagement	2.53	0.87	3.12	0.70	0.59	5.22	18	.000***	0.75

*** $p < .001$.

A paired-samples *t*-test was conducted to compare 2018 participants' pre-Academy and post-Academy civic capacity. Participants' civic capacity significantly increased from pre-Academy ($M = 2.21$, $SD = 0.88$) to post-Academy ($M = 2.78$, $SD = 0.71$; $t(18) = 4.34$, $p = 0.000$, $d = .71$). Results are summarized in Table 6. There was a significant increase in all three dimensions of civic capacity.

Table 6. Results of Paired Samples *t*-Tests Comparing Participants' Civic Capacity Before and After the Academy ($N = 19$)

Civic Capacity	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's
	M	SD	M	SD					<i>d</i>
Drive	2.21	0.98	2.72	0.83	0.51	3.56	18	.002**	0.56
Connections	2.25	0.93	2.94	0.70	0.69	4.36	18	.000***	0.84
Pragmatism	2.18	1.03	2.67	0.85	0.49	3.20	18	.005**	0.52
Total Civic Capacity	2.21	0.88	2.78	0.71	0.57	4.34	20	.000***	0.71

** $p < .01$. *** $p < .001$.

A paired-samples *t*-test was conducted to compare 2018 participants' pre-Academy and post-Academy entrepreneurial leadership behavior. Participants' entrepreneurial leadership behavior significantly increased from pre-Academy ($M = 2.59$, $SD = 0.63$) to post-Academy ($M = 2.97$, $SD = 0.58$; $t(18) = 3.78$, $p = 0.001$, $d = 0.63$). Results are summarized in Table 7.

Table 7. Results of Paired Samples *t*-Test Comparing Participants' Entrepreneurial Leadership Behavior Before and After the Academy ($N = 19$)

	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's
	M	SD	M	SD					<i>d</i>
Entrepreneurial Behav.	2.59	0.63	2.97	0.58	0.38	3.78	18	.001**	0.63

** $p < .01$.

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). Multi-rater feedback 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. Fifty-two raters responded to invitations from 2018 Academy participants to rate their leadership behaviors prior to the Academy. Thirty-three raters responded to invitations from 2018 Academy participants to rate their leadership behaviors after the Academy.

An independent samples *t*-test comparing raters' perspectives on participants' transformational leadership showed a significant increase from pre-Academy ($M = 3.15$, $SD = 0.48$) to post-Academy ($M = 3.44$, $SD = 0.38$); $t(83) = 2.92$, $p = 0.005$, $d = .67$. Results are summarized in Table 8. There was a significant increase in three of the four transformational leadership behaviors from the raters' perspective.

Table 8. *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	52	3.10	.49	2.89	83	.005**	0.63
Idealized Influence - Post Academy	33	3.38	.39				
Inspirational Motivation - Pre Academy	52	3.28	.57	1.82	83	.07	0.41
Inspirational Motivation - Post Academy	33	3.49	.45				
Intellectual Stimulation – Pre Academy	52	3.07	.60	3.51	83	.001**	0.81
Intellectual Stimulation – Post Academy	33	3.49	.42				
Individual Consideration – Pre Academy	52	3.17	.54	2.04	83	.045*	0.46
Individual Consideration – Post Academy	33	3.40	.45				
Total Trans. Leadership – Pre Academy	52	3.15	.48	2.92	83	.005***	0.67
Total Trans. Leadership – Post Academy	33	3.44	.38				

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

An independent samples *t*-test comparing raters' perspectives on participants' champion of innovation behavior showed a significant increase from pre-Academy ($M = 3.26$, $SD = 0.51$) to post-Academy ($M = 3.59$, $SD = 0.36$); $t(82) = 3.27$, $p = 0.002$, $d = .69$. Results are summarized in Table 9. All three champions of innovation dimensions showed a significant increase from pre-Academy to post-Academy from the raters' perspective.

Table 9. *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	51	3.13	.69	2.07	82	.003**	0.48
Enthusiasm & Confidence – Post Academy	33	3.42	.49				
Persistence – Pre Academy	51	3.28	.56	3.40	82	.007**	0.79
Persistence – Post Academy	33	3.68	.44				
Right People Involved – Pre Academy	51	3.37	.53	3.01	82	.000***	0.71
Right People Involved – Post Academy	33	3.69	.35				
Total Champ. of Innovation – Pre Acad.	51	3.26	.39	3.27	82	.000***	0.69
Total Champ. of Innovation – Post Acad.	33	3.54	.42				

** $p < .01$. *** $p < .001$.

An independent samples *t*-test comparing raters' perspectives on participants' awareness of water issues in Nebraska from pre-Academy ($M = 3.26$, $SD = 0.60$) to post-Academy ($M = 3.54$, $SD = 0.48$); $t(82) = 2.24$, $p = 0.028$, $d = 0.52$. There was also a significant increase in

participants' engagement in Nebraska water issues from pre-Academy ($M = 3.17$, $SD = 0.69$) to post-Academy ($M = 3.52$, $SD = 0.56$); $t(82) = 2.45$, $p = 0.016$, $d = .56$ from the raters' perspectives. Results are summarized in Table 10.

Table 10. *Results of Independent Samples t-Tests Comparing Raters' Perceptions of Participants' Nebraska Water Knowledge and Behavior Before and After the Academy*

Water Knowledge & Behavior	N	M	SD	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Awareness – Pre Academy	51	3.26	.60	2.24	82	.028*	0.52
Awareness – Post Academy	33	3.54	.48				
Engagement – Pre Academy	51	3.17	.69	2.45	82	.016*	0.56
Engagement – Post Academy	33	3.52	.56				

* $p < .05$.

An independent samples *t*-test comparing raters' perspectives on participants' civic capacity showed a significant increase from pre-Academy ($M = 3.16$, $SD = 0.51$) to post-Academy ($M = 3.44$, $SD = 0.44$); $t(82) = 2.61$, $p = 0.011$, $d = 0.59$. Results are summarized in Table 11. Two of the three dimensions of civic capacity showed a significant increase from pre-Academy to post-Academy from the raters' perspective.

Table 11. *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	51	3.16	.59	1.61	82	.111	0.35
Drive – Post Academy	33	3.36	.54				
Connections – Pre Academy	51	3.15	.56	2.99	82	.004**	0.68
Connections – Post Academy	33	3.49	.43				
Pragmatism – Pre Academy	51	3.18	.49	2.73	82	.008**	0.61
Pragmatism – Post Academy	33	3.47	.46				
Total Civic Capacity – Pre Academy	51	3.16	.51	2.61	82	.011**	0.59
Total Civic Capacity – Post Academy	33	3.44	.44				

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

An independent samples *t*-test comparing raters' perspectives on participants' entrepreneurial leadership behavior showed a significant increase from pre-Academy ($M = 3.30$, $SD = 0.52$) to post-Academy ($M = 3.51$, $SD = 0.37$); $t(81) = 2.07$, $p = 0.042$, $d = 0.59$. Results are summarized in Table 12.

Table 12. *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	50	3.30	.52	2.07	81	.042*	0.59
Entrepreneurial Behavior – Post Academy	33	3.51	.37				

* $p < .05$.

Results of the 2018 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. Results also indicate that the curriculum is meeting Academy objectives.

2018 Session Evaluations

Session evaluations covered the specific topics addressed during each session. Participants believed 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 Q&A.

The participants' feedback is used to plan the 2019 Academy. Presenters that were commended by participants are being retained and other presenters will be invited. Some new leadership and water related topics are being investigated. Field trip destinations, presenters, group projects, and recruitment are being adjusted.

Session evaluations are a valuable tool for the entire program. 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 eighteen of the 120 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. There have been

26 females and 92 males complete the pre- and post-assessment (27 females and 93 males have completed the Academy). Respondents' average age was 38.4 years with a range of 21 to 61.

A paired-samples *t*-tests showed there has been a significant increase in the cumulative participants' transformational leadership behaviors from pre-Academy ($M = 2.75$, $SD = 0.46$) to post-Academy ($M = 3.06$ $SD = 0.38$); $t(117) = 10.97$, $p = 0.000$, $d = .73$. Results are summarized in Table 13. There has been a significant increase in all four transformational leadership behaviors for Academy participants of eight classes of the Academy from pre-Academy to post-Academy.

Table 13. *Results of Paired Samples t-Tests Comparing Cumulative Participants' Transformational Leadership Behavior Before and After the Academy (N = 118)*

Transformational Leadership Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Idealized Influence	2.69	0.49	3.00	0.41	0.31	8.68	117	.000***	0.69
Inspirational Motivation	2.74	0.60	3.07	0.51	0.33	8.40	117	.000***	0.59
Intellectual Stimulation	2.74	0.59	3.10	0.50	0.36	9.59	117	.000***	0.66
Individual Consideration	2.84	0.54	3.10	0.39	0.26	6.77	117	.000***	0.55
Total Trans. Leadership	2.75	0.46	3.06	0.38	0.31	10.97	117	.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 ($M = 3.01$, $SD = 0.49$) to post-Academy ($M = 3.29$, $SD = 0.39$); $t(117) = 9.29$ $p = 0.000$, $d = .63$. Results are summarized in Table 14. Eight classes of Academy participants have demonstrated a significant increase in all three dimensions of innovation from pre-Academy to post-Academy.

Table 14. Results of Paired Samples *t*-Tests Comparing Cumulative Participants' Champion of Innovation Behaviors Before and After the Academy ($N = 118$)

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	2.95	0.65	3.25	0.50	0.30	7.15	117	.000***	0.52
Persistence under Adversity	2.97	0.55	3.24	0.46	0.27	6.92	117	.000***	0.53
Get Right People Involved	3.10	0.59	3.37	0.51	0.27	7.28	117	.000***	0.49
Total Champ. of Innov.	3.01	0.49	3.29	0.39	0.28	9.29	117	.000***	0.63

*** $p < .001$.

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 ($M = 2.84$, $SD = 0.74$) to post-Academy ($M = 3.46$, $SD = 0.50$; $t(117) = 9.88$, $p = 0.000$, $d = .98$). 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 ($M = 2.59$, $SD = 0.86$) to post-Academy ($M = 3.14$, $SD = 0.66$); $t(117) = 8.94$, $p = 0.000$, $d = .72$.

Table 15. Results of Paired Samples *t*-Tests Comparing Cumulative Participants' Nebraska Water Knowledge and Behavior Before and After the Academy ($N = 118$)

Water Knowledge & Behavior	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Awareness	2.84	0.74	3.46	0.50	0.62	9.88	117	.000***	0.98
Engagement	2.59	0.86	3.14	0.66	0.55	8.94	117	.000***	0.72

*** $p < .001$.

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 ($M = 2.39$, $SD = 0.73$) to post-Academy ($M = 2.88$, $SD = 0.56$); $t(53) = 7.59$, $p = 0.000$, $d = .75$. Results are summarized in Table 16. There was a significant increase in all three civic capacity dimensions from pre-Academy to post-Academy.

Table 16. Results of Paired Samples *t*-Tests Comparing Cumulative Participants' Civic Capacity Before and After the Academy ($N = 54$)

Civic Capacity	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Drive	2.48	0.89	2.86	0.72	0.38	5.26	53	.000***	0.47
Connections	2.51	0.80	3.11	0.58	0.60	7.58	53	.000***	0.86
Pragmatism	2.17	0.83	2.66	0.69	0.49	5.80	53	.000***	0.64
Total Civic Capacity	2.39	0.73	2.88	0.56	0.49	7.59	53	.000***	0.75

*** $p < .001$.

A paired-samples *t*-test of entrepreneurial leadership behavior showed there has been a significant increase in eight Academy classes from pre-Academy ($M = 2.68$, $SD = 0.72$) to post-Academy ($M = 3.02$, $SD = 0.60$; $t(117) = 7.32$, $p = 0.000$, $d = 0.51$). Results are summarized in Table 17.

Table 17. Results of Paired Samples *t*-Test Comparing Cumulative Participants' Entrepreneurial Leadership Behavior Before and After the Academy ($N = 118$)

Entrepreneurial Behav.	Pre-Academy		Post-Academy		Diff.	<i>t</i>	df	Sig.	Cohen's <i>d</i>
	M	SD	M	SD					
Entrepreneurial Behav.	2.68	0.72	3.02	0.60	0.34	7.32	117	.000***	0.51

*** $p < .001$.

Leadership Knowledge, Skills, and Behaviors – Raters' Perspectives

Cumulative Raters

A series of independent samples *t*-tests were conducted to compare the cumulative Academy participants' pre-Academy and post-Academy transformational leadership behaviors from raters' perspectives. Three hundred twelve raters have completed pre-Academy assessments and 277 raters have completed post-Academy assessments. Results showed a significant increase in cumulative participants' transformational leadership from pre-Academy ($M = 3.01$, $SD = 0.52$) to post-Academy ($M = 3.28$, $SD = 0.42$); $t(587) = 6.75$, $p = 0.000$, $d = .57$ from the raters' perspective. Results are summarized in Table 18. All four transformational leadership behaviors significantly increased from pre-Academy to post-Academy from the cumulative raters' perspective.

Table 18. *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	312	3.03	.55	6.31	587	.000***	0.52
Idealized Influence – Post Academy	277	3.29	.44				
Inspirational Motivation – Pre Academy	312	3.07	.59	5.39	587	.000***	0.44
Inspirational Motivation – Post Academy	277	3.31	.49				
Intellectual Stimulation – Pre Academy	312	2.96	.59	6.54	587	.000***	0.55
Intellectual Stimulation – Post Academy	277	3.26	.50				
Individual Consideration – Pre Academy	312	2.99	.61	5.41	587	.000***	0.44
Individual Consideration – Post Academy	277	3.24	.51				
Total Trans. Leadership – Pre Academy	312	3.01	.52	6.75	587	.000***	0.57
Total Trans. Leadership – Post Academy	277	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 ($M = 3.48$, $SD = 0.43$); $t(586) = 7.50$, $p = 0.000$, $d = .61$. Results are summarized in Table 19. There was a significant increase in all three champions of innovation behaviors from pre-Academy to post-Academy from the cumulative raters' perspective.

Table 19. *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	<i>t</i>	df	Sig.	Cohen's <i>d</i>
Enthusiasm & Confidence – Pre Academy	311	3.10	.62	5.77	586	.000***	0.47
Enthusiasm & Confidence – Post Academy	277	3.37	.53				
Persistence – Pre Academy	311	3.24	.51	6.28	586	.000***	0.51
Persistence – Post Academy	277	3.50	.50				
Right People Involved – Pre Academy	311	3.27	.51	7.87	586	.000***	0.66
Right People Involved – Post Academy	277	3.58	.43				
Total Champ. of Innov. – Pre Academy	311	3.20	.48	7.50	586	.000***	0.61
Total Champ. of Innov. – Post Academy	277	3.48	.43				

*** $p < .001$.

An independent samples *t*-test comparing raters' perspectives on water issues knowledge showed a significant increase pre-Academy ($M = 3.26$, $SD = 0.62$) to post-Academy ($M = 3.58$, $SD = 0.49$); $t(587) = 6.98$, $p = 0.000$, $d = .57$. Results are summarized in Table 20. Results

showed a significant increase in cumulative participants' engagement with Nebraska water policy issues from pre-Academy ($M = 3.05$, $SD = 0.75$) to post-Academy ($M = 3.44$, $SD = 0.60$); $t(587) = 7.05$, $p = 0.000$, $d = .57$ from the raters' perspective.

Table 20. *Results of Independent Samples t-Tests Comparing Cumulative Raters' Perspective of Participants' Nebraska Water Knowledge and Behavior Before and After the Academy*

Water Knowledge & Behavior	N	M	SD	t	df	Sig.	Cohen's d
Awareness – Pre Academy	312	3.26	.62	6.98	587	.000***	0.57
Awareness – Post Academy	277	3.58	.49				
Engagement – Pre Academy	312	3.05	.75	7.05	587	.000***	0.57
Engagement – Post Academy	277	3.44	.60				

*** $p < .001$.

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 cumulative participants' civic capacity from pre-Academy ($M = 3.02$, $SD = 0.60$) to post-Academy ($M = 3.38$, $SD = 0.57$); $t(291) = 5.13$, $p = 0.000$, $d = .62$. Results are summarized in Table 21. There was a significant increase in all three dimensions of civic capacity from pre-Academy to post-Academy from the cumulative raters' perspective.

Table 21. *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	157	3.02	.66	4.40	291	.000***	0.54
Drive – Post Academy	136	3.37	.63				
Connections – Pre Academy	157	3.02	.64	5.41	291	.000***	0.64
Connections – Post Academy	136	3.41	.58				
Pragmatism – Pre Academy	157	3.01	.62	4.72	291	.000***	0.58
Pragmatism – Post Academy	136	3.35	.58				
Total Civic Capacity – Pre Academy	157	3.02	.60	5.13	291	.000***	0.62
Total Civic Capacity. – Post Academy	136	3.38	.57				

*** $p < .001$.

An independent-samples t -test comparing cumulative raters' perspectives of participants' entrepreneurial leadership behavior showed a significant increase from pre-Academy ($M = 3.15$,

$SD = 0.59$) to post-Academy ($M = 3.38$ $SD = 0.60$; $t(585) = 4.76$, $p = 0.000$, $d = 0.39$). Results are summarized in Table 22.

Table 22. *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 <i>d</i>
Pre Academy	310	3.15	.59	4.76	585	.000***	0.39
Post Academy	277	3.38	.60				

*** $p < .001$.

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 leaders in the water arena. Academy participants demonstrated a significant increase in their leadership knowledge, skills, and behaviors. Feedback from participants was constructive and highly positive. Participant concerns were addressed in subsequent sessions, and minor changes are planned for the 2019 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 2018 participants' leadership knowledge, skills, and behaviors were statistically significant. Moreover, results from the cumulative raters' perspective of all seven Academy classes were statistically significant.

Team Projects

2018 Class Projects

Academy participants were divided into four teams. Each team is required to create and complete a project that increases the impact of the Academy. One team did an infographic of Nebraska water facts and posted it on the Nebraska Water Leaders Academy Facebook page. The team then used Facebook analytics to track how people interacted with the information over the span of a week and to assess the promotion the Academy. After one week the infographic reached 7,234 people, had 177 likes or other reactions, generated 13 comments, been shared 64 times, and led to 240 clicks to other content on the page. Prior to the post, the most people ever reached on an Academy Facebook post was 550. A second team did a survey of the water usage of major cities in Nebraska; determining that there is high variability in the willingness of

communities to share such data and in the type of data that they collect. A third team did a review of funding strategies supporting water projects. A fourth team created a Google Earth project that identifies water quality and quantity management areas within Natural Resources Districts.

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 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 in the form of a poster with residential water use in Nebraska. The map is targeted to K-12 students and was made available to K-12 teachers. The map includes 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 on how rivers work. 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. 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.

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 their local water basin 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 member
- 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

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. A couple alumni apply leadership behaviors learned in the Academy to their cooperative extension programming. And yet another alumnus has begun volunteering at her local elementary school and their Science Fair. One Academy alumnus is even 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 is evidence that the Academy is both achieving its specified goals and helping participants realize theirs. 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 locally and globally. 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.

In 2018, a second Academy alumni reunion was held. Olsson Associates in Lincoln hosted the event sponsored by Central Nebraska Public Power & Irrigation District, HDR, Nebraska State Irrigation Association, and CJJ Communications. Several alumni from multiple classes organized a reception and dinner followed by a breakfast and Husker baseball game the next day. Sixteen alumni and 15 guests attended the event. Jennifer Schellpeper from the Nebraska Department of Natural Resources spoke to the group during breakfast about current and future water projects in Nebraska. T-shirts were printed commemorating the event and worn to the baseball game.

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. 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 also presented at Academy sessions and are following Academy activities on-line. Alumni are also giving presentations to citizen groups on water issues in Nebraska, and some are now serving on water governance boards. 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 will be invited to attend each session in 2018. The success of the 2015 alumni reunion and alumni feedback indicates that alumni reunions are attractive and more should be planned. Discussion of an alumni reunion is on-going.

Summary

Nineteen participants successfully completed the 2018 Academy bringing the total number of graduates to 120 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 eight 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.

References

- Antonakis, J., Avolio, B. J., & Sivasubramaniam, N. (2003). Context and leadership: An examination of the nine-factor full-range leadership theory using the Multifactor Leadership Questionnaire. *Leadership Quarterly*, *14*, 261-295.
[http://dx.doi.org/10.1016/S1048-9843\(03\)00030-4](http://dx.doi.org/10.1016/S1048-9843(03)00030-4)
- Barbuto, J. E., & Etling, A. W. (2002). Leadership development training in extension: A research-based curriculum design. *Proceedings of the 18th Annual Conference of the Association for International Agricultural and Extension Education*, Durban, South Africa, pp. 21-28.
- Bass, B. M., & Avolio, B. J. (1995). *Multifactor leadership questionnaire: Technical report*. Redwood City, CA: Mind Garden.
- Brasier, K. J., Lee, B., Stedman, R., & Weigle, J. (2011). Local champions speak out: Pennsylvania's Community Watershed Organizations. In L. W. Morton & S. S. Brown (Eds.), *Pathways for getting to better water quality: The citizen effect* (pp. 133-144). New York: Springer. http://dx.doi.org/10.1007/978-1-4419-7282-8_11
- Burbach, M. E., Floress, K., & Kaufman, E. K. (2015). Are water-related leadership development programs designed to be effective? An exploratory study. *Journal of Leadership Education*, *14*(1), 107-123.
- Cramer, J. S. (2015). *Civic capacity and integrative public leadership: A case study of the Nebraska Water Leaders Academy* (Unpublished master's thesis). University of Nebraska, Lincoln, NE. Retrieved from <http://digitalcommons.unl.edu>
- Donaldson, S. I., & Grant-Vallone, E. J. (2002). Understanding self report bias on organizational behavior research. *Journal of Business and Psychology*, *17*(2), 245-260.
<http://dx.doi.org/10.1023/A:1019637632584>
- Geller, E. S. (1992). Solving environmental problems: A behavior change perspective. In S. Staub & P. Green (Eds.), *In our hands: Psychology, peace, and social responsibility* (pp. 248-268). New York: New York University Press.
- Howell, J. M. (2005). The right stuff: Identifying and developing effective champions of innovation. *Academy of Management Executive*, *19*, 108-119.
<http://dx.doi.org/10.5465/AME.2005.16965104>
- Howell, J. M., Shea, C. M., & Higgins, C. A. (2005). Champions of product innovations: Defining, developing and validating a measure of champion behavior. *Journal of Business Venturing*, *20*, 641-661. <http://dx.doi.org/10.1016/j.jbusvent.2004.06.001>
- Lincklaen Arriëns, W., & Wehn de Montalvo, U. (2013). Exploring water leadership. *Water Policy*, *15*(Suppl.2), 15-41. <http://dx.doi.org/10.2166/wp.2013.010>
- McCauley, C. D., Van Velsor, E., & Ruderman, M. N. (2010). Introduction: Our viewpoint of leadership development. In: E. Van Velsor, C.D. McCauley, & M.N. Ruderman (Eds.), *The Center for Creative Leadership handbook of leadership development* (pp. 1-26). San Francisco: Wiley.

- McIntosh, B. S., & Taylor, A. (2013). Developing t-shaped water professionals: Reflections on a framework for building capacity for innovation through collaboration, learning and leadership. *Water Policy*, 15, 42-60. <http://dx.doi.org/10.2166/wp.2013.011>
- Millennium Ecosystem Assessment. (2005). *Ecosystems and human well-being: Synthesis*. Washington, DC: Island Press and World Resources Institute.
- Morton, L. W., & Brown, S. (2011). Pathways for getting to better water quality: The citizen effect. New York: Springer. <http://dx.doi.org/10.1007/978-1-4419-7282-8>
- Morton, L. W., Selfa, T., & Becerra, T. A. (2011). Shared leadership for watershed management. In L. W. Morton & S. S. Brown (Eds.), *Pathways for getting to better water quality: The citizen effect* (pp. 29-39). New York: Springer. http://dx.doi.org/10.1007/978-1-4419-7282-8_3
- Newman, P., Bruyere, B. L., & Beh, A. (2007). Service-learning and natural resource leadership. *Journal of Experiential Education*, 30, 54-69. <http://dx.doi.org/10.5193/JEE.30.1.54>
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York: McGraw-Hill.
- Pahl-Wostl, C., Conca, K., Kramer, A., Maestu, J., & Schmidt, F. (2013). Missing links in global water governance: a processes-oriented analysis. *Ecology and Society*, 18(2), 33. <http://dx.doi.org/10.5751/ES-05554-180233>
- Pahl-Wostl, C., Nilsson, C., Gupta, J., & Tockner, K. (2011). Societal learning needed to face the water challenge. *Ambio*, 40, 549-553. <http://dx.doi.org/10.1007/s13280-011-0149-1>
- Pittock, J., Hanson, L., & Abell, R. (2008). Running dry: Freshwater biodiversity, protected areas and climate change. *Biodiversity*, 9(3 & 4), 30-38. <http://dx.doi.org/10.1080/14888386.2008.9712905>
- Pittock, J., Hussey, K., & McGlennon, S. (2013). Australian climate, energy and water policies: Conflicts and synergies. *Australian Geographer*, 44(1), 3-22. <http://dx.doi.org/10.1080/00049182.2013.765345>
- Popper, M., & Mayseless, O. (2007). The building blocks of leadership development: A psychological conceptual framework. *Leadership & Organizational Development*, 28, 664-668. <http://dx.doi.org/10.1108/01437730710823905>
- Redekop, B. W. (Ed.). 2010. *Leadership for environmental sustainability*. New York: Routledge.
- Renko, M., El Tarabishy, A., Carsrud, A., & Brännback, M. (2015). Understanding and measuring entrepreneurial leadership. *Journal of Small Business Management*, 53(1), 54-74.
- Rockström J., Steffen, W., Noone, K., Persson, A., Chapin, F. S., Lambin, E. F., . . . Foley, J. A. (2009). A safe operating space for humanity. *Nature*, 461, 472-475. <http://dx.doi.org/10.1038/461472a>
- Sun, P., & Anderson, M. (2012). Civic capacity: Building on transformational leadership to explain successful integrative public leadership. *The Leadership Quarterly*, 23(3), 309-323.

Taylor, A., Cocklin, C., & Brown, R. (2012). Fostering environmental champions: A process to build their capacity to drive change. *Journal of Environmental Management*, 98, 84-97. <http://dx.doi.org/10.1016/j.jenvman.2011.12.001>

U.S. Army Corps of Engineers (USACE). (2010). *Building strong collaborative relationships for a sustainable water resources future*. National Report: Responding to National Water Resources Challenges. Washington, DC: U.S. Army Corps of Engineers.

Appendix I

Contributors to the 2018 Nebraska Water Leaders Academy

Instructor	Organization	Program Title	Session
Jessica Jones	Nebraska Extension, Southeast Research & Extension Center (SREC)	Personality and Leadership Assessments and Potentials	#1, Lincoln
Carol Jess	CJJ Communications	Communication Expectations	#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
Laura Johnson	Nebraska Department of Environmental Quality (NDEQ)	Water Quality in Nebraska	#1, Lincoln
David Miesbach	NDEQ	Water Quality in Nebraska	#1, Lincoln
John Bender	NDEQ	Water Quality in Nebraska	#1, Lincoln
Erik Prenosil	NDEQ	Water Quality in Nebraska	#1, Lincoln
Mary Bomberger Brown	UNL, SNR	Ecological Importance of the Central Platte Valley	#2, Kearney
Gina Matkin	UNL Department of Agricultural Leadership, Education and Communication (ALEC)	Diversity and Conflict	#2, Kearney
J. Michael Jess	Water Resources Engineer (former director NDNR)	River Basin Compacts & Decrees: Nebraska Obligations	#2, Kearney
Jesse Bradley	NDNR	Panel - Central Platte Water Issues	#2, Kearney
Jack Russell	Middle Republican NRD	Panel - Central Platte Water Issues	#2, Kearney
Jason Farnsworth	Platte River Recovery Implementation Project	Panel - Central Platte Water Issues	#2, Kearney
Andy Bishop	Rainwater Basin Joint Venture	Panel - Central Platte Water Issues	#2, Kearney
John Heaston	Nebraska Water Balance Alliance	Ecology and Environmental Awareness	#2, Kearney
Sarah Focke	Kearney Convention Bureau	Eco-Tourism from the Commercial Perspective	#2, Kearney
Andrew Pierson	Audobon Rowe Sanctuary	Eco-Tourism from the Environmental Perspective	#2, Kearney
John Heaston	Heaston Consulting	The Intersection of Science and Policy	#3, Valentine
Adam Rupe	JEO Consulting	South Loup Watershed Management Plan	#2, Kearney
Laura Johnson	NDEQ	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
Michael Arends	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
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
Ann Bleed	Engineer (former director NDNR)	Applying the Elinor Ostrom Principles of Common Pool Resources Management	#3, Omaha
Cheryl Burkhart-Kriesel	Nebraska Extension, Panhandle Research & Extension Center (PREC)	Understanding the Community Context	#4, Scottsbluff
Lee Orton	NSIA	Nebraska's Public Power & Irrigation Districts	#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
Ryan Reisdorf	South Platte NRD	Nebraska's Natural Resources Districts – A History and Examination of Programs and Projects	#4, Scottsbluff
John Berge	North Platte NRD	Nebraska's Natural Resources Districts – A History and Examination of Programs and Projects	#4, Scottsbluff
Pat O'Brien	Upper Niobrara-White NRD	Nebraska's Natural Resources Districts – A History and Examination of Programs and Projects	#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
Steve Thede	National Park Service, Niobrara National Scenic River	Panel - The Niobrara River Valley, The Past, The Present, The Future	#5, Valentine
John Heaston	Heaston Consulting	The Intersection of Science and Policy	#5, Valentine
Matt Joeckel	UNL SNR CSD	Geology of Nebraska	#5, Valentine
Mark Burbach	UNL SNR CSD	Personal Empowerment	#6 Nebraska City
Mark Burbach	UNL SNR CSD	Post-Academy Leadership Assessment	#6 Nebraska City
Steve Masters	Nebraska Water Balance Alliance	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
Kim Robak	Mueller Robak LLC	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
Lee Orton	NSIA	Water Resources - Nebraska's Investment, Yesterday, Today and Future	#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 25 & 26, 2018

Lincoln, NE

16 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	2(1)	3(4)	4(3)	5(8)	1) I understand the importance of professional etiquette	1	2	3(1)	4(5)	5(10)	11
1	2(1)	3(5)	4(9)	5(1)	2) I understand how preferences based on personality type may affect leadership	1	2	3	4(6)	5(10)	35
1	2(3)	3(5)	4(8)	5	3) I can effectively use my knowledge of personality to improve my leadership skills	1	2	3	4(11)	5(5)	31
1(4)	2(6)	3(4)	4(1)	5(1)	4) I understand the concept of Transactional Leadership	1	2	3(5)	4(7)	5(4)	70
1(4)	2(6)	3(4)	4(1)	5(1)	5) I understand the concept of Transformational Leadership	1	2	3(3)	4(9)	5(4)	76
1(4)	2(4)	3(5)	4(2)	5(1)	6) I understand how Full Range Leadership can strengthen my leadership skills	1	2	3(3)	4(7)	5(5)	63
1(1)	2(6)	3(7)	4(1)	5(1)	7) I understand Nebraska’s water laws	1	2	3(10)	4(5)	5(1)	28
1(1)	2(2)	3(10)	4(1)	5(2)	8) I understand Nebraska’s climate and weather	1	2	3(3)	4(10)	5(3)	31
1(1)	2(5)	3(6)	4(4)	5	9) I understand Nebraska’s geology	1	2	3(2)	4(9)	5(5)	49
1(1)	2(4)	3(7)	4(4)	5	10) I understand Nebraska’s groundwater hydrology	1	2	3(2)	4(10)	5(4)	44
1(1)	2(5)	3(8)	4(1)	5(1)	11) I understand major water quality issues in Nebraska	1	2	3(3)	4(10)	5(3)	46

(Please turn over...)

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

- Bigger picture of Nebraska water law and how it fits in with DNR, etc... I know we've just scratched the surface!
- Water law is very complicated and I didn't know how old some of the laws were.
- Complexities that are all interrelated with Nebraska's water.
- Understanding how to deal with different personalities. The importance of water conservation and management. I gained a better understanding of common terminology in the water community.
- That is much to learn and there are many areas that pertain to the protection of our groundwater.
- Legal and technical presentations are long but interesting. Very nice to hear directly from folks dealing in this arena on a daily basis.
- Very good job of broad overview as we approach the next five sessions. Good job of personality discussions as ice breakers.
- Transformational leadership is an essential skill to being a leader. Transformational leadership is multi-faceted. It's not limited to motivating others - it also includes getting ideas from others, tackling questions, and listening to and considering needs of others.
- Great to meet everyone, realize diverse stakeholders. Water law/policy, NDEQ was most foreign to me. "Water is a people issue"
- The explanations of water law and policy.
- There is a diverse need of water resources throughout the state and many factors (policy, science, economics) go into how water resources are utilized for many purposes.
- My perception of my leadership skills and how I am perceived by my peers are very different.
- It was very good. I think my main takeaway is that I have a lot to learn about water. I liked the water laws.
- There are a lot of great people in this session. I'm looking forward to getting to know them all.

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

- It was fun. I liked it.
- I truly enjoyed the BGTI test. I have never done that before. I also enjoyed Leroy's primer on water law. I have seen him at different events but never spoken to him. He has an interesting sense of humor. Definitely keep him in the program as long as you can.
- A lot of quality information over a broad topic range. Very helpful for my own knowledge base.
- It may be tough to schedule, but try to make the trip to capital more relevant to discussion and worthwhile for time.
- The etiquette stuff was somewhat unnecessary; at least too long/detailed.
- More hands-on examples.
- Include meeting etiquette/how to hold-facilitate meetings. Maybe include an intro presentation that discusses the presenters/upcoming discussions/goals for the day's topics.

Nebraska Water Leaders Academy

March 22-23, 2018

Kearney, NE

17 responses (16 for #11)

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 WLA Session						Now, at the END of this WLA Session					% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree	
1	2(7)	3(5)	4(4)	5(1)	1) I understand the ecological significance of the Central Platte valley & Rainwater Basin	1	2	3	4(12)	5(5)	49
1	2(5)	3(11)	4(1)	5	2) I understand how to participate in or facilitate conversations that include differing perspectives or viewpoints	1	2	3(2)	4(12)	5(3)	47
1(2)	2(6)	3(8)	4(1)	5	3) I understand Nebraska’s compacts and decrees	1	2	3(5)	4(10)	5(2)	55
1(3)	2(5)	3(4)	4(4)	5(1)	4) I understand the status of NDNR basin planning	1	2(1)	3(8)	4(6)	5(2)	30
1(2)	2(7)	3(2)	4(5)	5(1)	5) I understand Republican River augmentation projects	1	2(2)	3(5)	4(8)	5(2)	30
1(1)	2(6)	3(7)	4(3)	5	6) I understand Platte River inter-basin projects	1	2(2)	3(7)	4(8)	5(1)	30
1(2)	2(7)	3(4)	4(2)	5(2)	7) I understand wetland enhancement projects in the Rainwater Basin	1	2	3(3)	4(10)	5(4)	50
1(1)	2(3)	3(9)	4(3)	5(1)	8) I understand issues related to ecological and environmental awareness	1	2	3(6)	4(8)	5(3)	28
1(1)	2(2)	3(10)	4(4)	5	9) I understand eco-tourism from the commercial perspective	1	2	3(4)	4(10)	5(3)	31
1(2)	2(4)	3(6)	4(4)	5(1)	10) I understand eco-tourism from the environmental perspective	1	2	3(7)	4(5)	5(5)	35
1(3)	2(7)	3(2)	4(3)	5(1)	11) I understand the South Loup Watershed Mngt Plan	1	2(1)	3(4)	4(8)	5(3)	53

(Please turn over...)

12) What is Your Main Takeaway from this session?

- Cooperation and outreach a necessity to funding and developing the eco-friendly projects.
- The way we use water here has an effect on the whole US, not just in irrigation.
- I enjoyed the diversity and conflict presentation and gained some new perspective on that topic. The panel discussion was great, well facilitated and I appreciated their candor. I could listen to Andy B. talk all day – he’s so knowledgeable. Great field trip – Rowe appreciates the Academy bringing the group out to the blinds.
- I enjoyed the panel discussion the most. Didn’t think about all that it took to do those types of projects.
- Balance surface water quality and land use; balance tourism revenues without disturbing wildlife; balance wildlife habitat with landowner willingness to participate and wildlife needs; balance water consumption with compacts and decrees.
- People. Perception is reality, Diversity is the key to success. Science is the answer, but not just one correct answer.
- Charismatic species contribute to many aspects of local and regional areas. Water availability is critical for many of these species and without water habitat availability at the right time of year, global ecological impacts could occur.
- CRANES ARE COOL.
- Love the session on diversity and hearing opinions that vary from my own. Great speakers and met some great people.
- Understand more about the fly way and importance of water to the migration. Better understanding of water agreements.
- Importance of water resources to wildlife. Importance of partnerships and diversity.
- Balancing act required for water projects between agencies and public.
- Perceptions matter!

13) Additional Ideas, Comments, Questions:

- I liked all of it; got a lot from this.
- Getting to experience the people coming to and working at Rowe Sanctuary was invaluable to understanding motives and results of eco-tourism.
- Great speakers! Nice Job.
- Seeing the Whooping Cranes was awesome.

Nebraska Water Leaders Academy

May 17-18, 2018

Omaha, NE

16 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 WLA Session						Now, at the END of this WLA Session					% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree	
1(7)	2(5)	3(2)	4(2)	5	1) I understand Papio-Missouri NRD flood control projects in the Omaha metro area	1	2(1)	3(3)	4(8)	5(4)	103
1(7)	2(7)	3(2)	4	5	2) I understand Metropolitan Utilities District (MUD) water and wastewater treatment projects in Omaha	1	2(1)	3(4)	4(8)	5(3)	126
1(1)	2(10)	3(3)	4(2)	5	3) I understand how to lead innovation for personal and organizational change	1	2	3(4)	4(10)	5(2)	75
1(8)	2(5)	3(3)	4	5	4) I understand Omaha’s sewer separation project (i.e. CSO, combined sewer overflow)	1	2(1)	3(6)	4(6)	5(3)	103
1(5)	2(6)	3(3)	4(2)	5	5) I understand the State Revolving Fund Program	1	2(1)	3(6)	4(6)	5(3)	74
1(7)	2(7)	3	4(2)	5	6) I understand Ostrom’s principles of common pool resource management	1	2	3(4)	4(10)	5(2)	114

(Please turn over)

7) What is Your Main Takeaway from this session?

- Learned a lot on the municipal water tour. A lot of information I knew nothing about. Eye opening dollar amounts at every tour stops. Good to see the integrated approach to each project.
- Omaha metro grew by 100k people in ten years and will likely grow about same rate. Water demands for people will continue to grow.
- Complicated, amazing Omaha projects.
- Good session. Gained a lot of insight into municipal issues and problems with large residency.
- WE need to come up with a plan on how to share our water. The tour was great!
- Watershed management. CSO.
- It takes a group effort to improve water conditions in the state from flood prevention to sewage and wastewater.
- Treatment of water is important.
- Understanding of large municipal water processes.
- It takes a lot of dollars, time, and collaboration and outreach to manage resources in an urban environment. Also translates to innovation and leadership!
- As concentrations of population continues to grow, unique and expensive water issues must be addressed for community benefit.
- Just what it takes to keep a city working and protect is awe inspiring. I had no idea.

8) Additional Ideas, Comments, Questions:

- Water poker wasn't explained well; I'd skip this or explain better. Great tours.
- Would like a more broad-scope intro. and discussion of PMNRD control projects. Tough to do that by driving around without stopping or discussing.
- Field trip sites were especially helpful examples and provided visual examples of magnitude.
- Overall, excellent! Presentation at wastewater treatment at Spring Lake might have been more helpful after the CSO presentation. Wastewater treatment tour felt a little confusing (hard to grasp how whole system works). CSO presentation and Connie were highlights. MUD was also excellent. In talking about collaboration and communication, it would be amazing to have some tips/a session on facilitating meetings/discussion and bringing diverse groups to the table.

Nebraska Water Leaders Academy

July 12-13, 2018

Scottsbluff, 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 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 this WLA Session					% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree	
1	2(4)	3(7)	4(4)	5	1) I understand the importance of context when engaging with communities.	1	2	3(1)	4(9)	5(5)	42
1(1)	2(5)	3(7)	4(2)	5	2) I understand the history of Nebraska’s irrigation and public power districts.	1	2	3(3)	4(8)	5(4)	53
1(3)	2(6)	3(3)	4(3)	5	3) I understand the development of the integrated water system in the North Platte River Basin.	1	2	3(3)	4(10)	5(2)	64
1(6)	2(6)	3(2)	4(1)	5	4) I understand water markets	1	2(1)	3(3)	4(10)	5(1)	100
1(1)	2(6)	3(4)	4(4)	5	5) I understand historical and current NRD programs and projects in the Nebraska panhandle.	1	2	3(2)	4(9)	5(4)	51
1(7)	2(7)	3	4(1)	5	6) I understand modeling projects that Thad Kuntz & Adaptive Resources have been involved with in the Panhandle.	1(1)	2(1)	3(2)	4(10)	5(1)	93

(Please turn over)

7) What is Your Main Takeaway from this session?

- Development/the impact of efficiency on return flows on groundwater levels.
- History of irrigation and NRDs. How different irrigation districts manage their canals. I've never heard of water markets.
- It is nice to see surface and ground water districts work so well together.
- I got a lot of this. I liked the field trips and how diversion dam works a lot different than mine do. The water markets lesson was all new to me.
- Surface water usage and issues with it.
- A long and somewhat complicated history of water development in the North Platte Basin has had both successes and failures as a system but mostly successes from a user stand point.
- That the irrigation districts should have been a part of the NRD system when it was created.
- In western NE surface water is vital to the economy of the area.
- North Platte Basin (valley) water use/history.

7) Additional Ideas, Comments, Questions:

- This was the best session for me so far. Thank You.
- Pat, Ryan and John did a great job.
- Tour was very good.
- Operations of NRDs was especially helpful to see through NRD presentations.
- Carlie Ronca from USBR would have been a good speaker.

Nebraska Water Leaders Academy

September 13-14, 2018

Valentine, NE

12/13 responses

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					% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree	
1(1)	2(3)	3(5)	4(1)	5(2)	1) I understand the intersection of science and policy	1	2	3(6)	4(4)	5(2)	22
1(5)	2(5)	3(1)	4(2)	5	2) I understand management issues associated with Niobrara River stakeholders (panel discussion)	1	2(1)	3(2)	4(8)	5(2)	92
1(6)	2(7)	3	4	5	3) I understand the Niobrara River Valley Geology	1	2(1)	3(5)	4(6)	5(1)	130
1(5)	2(4)	3(2)	4(2)	5	4) I understand the unique ecosystem of the middle Niobrara River	1	2	3(7)	4(5)	5(1)	70
1(5)	2(2)	3(4)	4(2)	5	5) I understand the Bazile Groundwater Management Project	1	2	3(5)	4(6)	5(2)	69
1	2(5)	3(6)	4(2)	5	6) I understand the NDEQ Wellhead Protection Program	1	2(1)	3(4)	4(6)	5(2)	33
1(3)	2(5)	3(1)	4(2)	5	7) I understand Water Project Funding through the Nebraska Natural Resources Commission	1	2(3)	3(2)	4(5)	5	37

(Please turn over...)

8) What is Your Main Takeaway from this session?

- How much the river can change in a short time.
- Again, water is contentious! Stakeholders of the Niobrara include recreationists from across the state, even though they don't live and work in the community. Really enjoyed learning about the Niobrara geology, and learned tons from DEQ about the Bazile project. From Bazile presentation, appreciated their message about Who's the best messenger - this is something we've been thinking about for awhile so it was nice to see.
- Great lesson on local management and control.
- The understanding of who the stakeholders are for the Niobrara and challenges of management.
- Very concerned about ground water contamination.
- What a unique treasure the Niobrara basin is and learned a lot about its geology.
- Many parties involved with the Niobrara River.
- Protection of Niobrara River is important.

9) Additional Ideas, Comments, Questions:

- This is not something I would do on my own. I really liked it and had fun. Matt was good to have on the trip.
- Encourage participants to bring their own water on the canoe trip.
- Needed to provide more information on the float trip. Over half the group did not bring water or anything to drink because they figured there was going to be something supplied at the drop-in site. A special thanks to the outfitter that provided us with a case of water at the first available stopping area. There would have been a lot of thirsty people if that did not happen.

Nebraska Water Leaders Academy

November 15-16, 2018

Nebraska City, NE

16 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 this 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 this Session					% Change
Strongly Disagree				Strongly Agree		Strongly Disagree				Strongly Agree	
1	2(1)	3(5)	4(9)	5	1) I understand the future of ag production and water use in Nebraska	1	2	3(1)	4(8)	5(6)	23
1	2(5)	3(5)	4(5)	5(1)	2) I understand how to get involved with or serve on public boards or service organizations	1	2	3(1)	4(12)	5(4)	42
1(3)	2(6)	3(4)	4(3)	5	3) I understand Missouri River management past, present, and future	1	2	3(4)	4(8)	5(4)	64
1(2)	2(3)	3(9)	4(3)	5	4) I understand the economics of water	1	2	3(4)	4(10)	5(2)	32
1(1)	2(4)	3(6)	4(5)	5	5) I understand motivation to service on public boards and/or service organizations	1	2	3(2)	4(8)	5(6)	45
1(1)	2(3)	3(9)	4(3)	5	6) I understand the history of Nebraska’s investment in water resources	1	2	3(2)	4(10)	5(4)	43
1(1)	2(3)	3(6)	4(5)	5(1)	7) I understand how to get involved in community leadership opportunities	1	2	3(1)	4(10)	5(5)	41
BEFORE the Academy						Now, at the END of the Academy					
1(2)	2(5)	3(2)	4(7)	5	8) I use my understanding of personality types	1	2	3	4(11)	5(5)	50
1(2)	2(6)	3(4)	4(4)	5	9) I use transformational leadership principles	1	2	3(1)	4(11)	5(1)	60
1(1)	2(1)	3(7)	4(7)	5	10) I can participate well in conversations that include differing perspectives or viewpoints	1	2	3	4(5)	5(11)	44
1(2)	2(1)	3(8)	4(5)	5	11) I can lead personal or organizational innovation	1	2	3(2)	4(8)	5(6)	42
1	2(6)	3(3)	4(4)	5(3)	12) I am involved in water policy issues	1	2	3(3)	4(9)	5(4)	27
1	2(5)	3(7)	4(3)	5(1)	13) I am a leader in the area of water	1	2	3(3)	4(7)	5(6)	40

(Please turn over)

14) What is Your Main Takeaway from this session?

- I have a much better understanding of my strengths based on my personality type and knowledge. Our group is ready to step up to future water issues.
- Communication among diverse individuals is critical for the future of water resource management in Nebraska.
- Serving on boards is important and I should be involved.
- Understanding different levels of motivations to serving on boards and making a difference, how to get your boards more involved.
- The Missouri river has been mismanaged...
- Liked the mo river history and discussion!
- Motivation/engagement
- The importance of relationship building for professional development.
- Water is so important and it is our duty to get involved.
- Leadership opportunities/(suggestions)
- Put yourself out there! I loved the insight from Kim & Karen about getting engaged with public boards & organizations. While not pertinent to my work, the presentation by Gerald was incredibly fascinating. I learned a ton! This session in particular had a wonderful line of presenters who were so enjoyable to listen to.

15) What is Your Main Takeaway from the Nebraska Water Leaders Academy?

- Although participants come from a variety of backgrounds, there are many commonalities that link everyone that can serve as positive engagement for Nebraska water resources.
- Be open to other peoples opinions and values, while expressing your own without being confrontational or rude.
- Perspective is important. My water involvement is just a part of the puzzle.
- Education of water issues, how to be a more effective leader and more empowered, more networking with folks of differing backgrounds.
- I enjoyed meeting many diverse people who share an interest in water, understanding their perspectives will be invaluable to my future endeavors.
- Great to meet people involved. Very broad range of information provided, i.e., municipal, quality, quantity, irrigation, conservation, recreation, etc.
- Basic understanding of Nebraska's natural resources and specific water issues. Importance of collaboration/inclusion of diverse thought & stakeholders.
- How crucial networking is to get things (big things) done.

- NE water policy & management - more detailed understanding
- It is so important to keep an open mind and meet people where they are. This is easier to do if you understand yourself - how you lead, what you value, etc. It's been a tremendous experience to be exposed to more knowledge of Nebraska's water resources while learning from peers and gaining leadership skills.

13) Additional Ideas, Comments, Suggestions:

- Thanks to everyone who took the time & effort to make this year so rewarding for me.
- Adding additional viewpoint variety (industry) would enhance the experience for especially natural resource personnel involved in the Academy.
- Maybe could be done in 4 sessions if some of the presentations are pushed together. Lincoln + Nebraska City, for instance, were not "tours" and may be subject to being combined.
- Maybe make "fun" stuff optional, looking forward to alumni activities
- It would be awesome to have more growers and, as some groups mentioned, industry folks participate. It was a wonderful opportunity that I've so appreciated. I loved hearing different perspectives and being encouraged to think outside of the box. I will keep in touch with this network and am motivated to find new ways to engage in my community.

