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One World One Water Center for Urban Water Education and Stewardship

*Sandra Haynes[1] and Thomas V. Cech[2]

[1]*Dean, College of Professional Studies, Metropolitan State University of Denver, Denver, Colorado*
[2]*Director, One World One Water Center for Urban Water Education and Stewardship, Metropolitan State University of Denver, Denver, Colorado*
**Corresponding Author*

Abstract: The One World One Water Center for Urban Water Education and Stewardship (O'WOW Center) at Metropolitan State University of Denver is an innovative program designed to educate students and others about the important role of water in Colorado's economy and environment. The Center was created in 2011 with a $1 million donation to develop "urban water stewards" from diverse backgrounds and a wide range of disciplines. Students who study hydrology, history, politics, biology, water law, psychology, theater, art, geography, environmental science, chemistry, conflict resolution and negotiation, and other disciplines will be guided toward internships, careers, and volunteer opportunities to help shape new solutions for local and statewide water issues. To date, approximately 6,000 people have been directly reached by the O'WOW Center during the first four years of operation with potentially thousands of others reached indirectly. Outreach activities have included water festivals, water summits, author talks, seminars, media events and field trips. This paper illustrates the need for the O'WOW Center and presents information regarding MSU Denver, the Pilot Project and how the Center was created. The new Water Studies minor and Water Studies Certificate, fundraising and other current projects of O'WOW are described. Finally, the paper explores successes and challenges experienced by the faculty and staff of the O'WOW Center.

Keywords: *OWOW, water education, water minor, Denver, Metropolitan State*

Water is a central issue in Colorado, home to the headwaters of five primary river systems – the Arkansas, Colorado, South Platte, Rio Grande and White/Yampa. However, this resource is being threatened on many fronts:

Population Growth. Colorado's population is expected to increase by 1.4 million, or 25 percent, by 2030 (Colorado Water Conservation Board 2010).

Climate Change. Currently, 80 percent of Colorado's surface water supply originates as snow. A predicted 2.5-degree temperature increase by 2025, and 4-degree increase by 2050, could mean less snow in the Rocky Mountains, or an earlier springtime runoff. Warmer temperatures would require Colorado to adopt long-term strategies for using and sharing water among competing constituencies. Hydrologic forecasts predict protracted drought in the Southwest imposing ever greater demands on an already over-allocated Colorado River (Colorado Water Conservation Board 2015).

Resource Management Conflicts. The Colorado, South Platte, Arkansas and Rio Grande Rivers originate in Colorado and supply water to 19 Western states. Interstate compacts require that Colorado allow significant amounts of water to leave the state for downstream uses. In addition, four major groundwater aquifers supply Colorado, and 18 percent of the state's total water supply comes from groundwater,

portions of which are being rapidly depleted (Colorado Watershed Assembly 2015).

Economic Shifts. Early water-use regulation was created in the 1800s primarily for agriculture and mining. Newer industries including energy development, tourism and recreation also depend on water, and are very prominent in Colorado's economy. Much of the state's growing population is calling for changes in the water management system, while those who depend on senior water rights insist on preservation of the centuries-old system of water allocation.

Environmental Protection. Almost 850,000 lbs of toxic chemicals from industrial sources were deposited into Colorado waterways in recent years. Acid mine drainage dating back to the heyday of Colorado's mining industry affects more than 1,300 miles of streams. Debate continues regarding the water quality impacts of runoff from irrigation sources (such as lawns, golf courses, and agriculture) and use of hydraulic fracturing fluids in oil and gas production. Additionally, proposed inter-basin water transfer projects require expensive capital investment and carry unknown long-term environmental costs (Denver Post, June 24, 2014).

Water stewardship and sustainability are clearly important and responsible education topics in Denver's urban environment. Metropolitan State University of Denver (MSU Denver), located on the Auraria Campus in downtown Denver, is uniquely positioned to offer a water curriculum that promotes water stewardship and sustainability for the region. MSU Denver is a large (>20,000 students) urban campus adjacent to a major headwater river, the South Platte. The institution educates a large percentage of underserved/ disadvantaged populations, and has the largest number of students of color of any institution in the state. Notably, MSU Denver has alumni who largely stay in Colorado and the Denver Metro area, thereby empowering and affecting change in our region. In addition, our urban university has as part of its mission, a mandate to help the public solve community-related issues such as water management.

Water both unites and divides our state and its varied regions and industries. Understanding this precious natural resource is critical to laying a foundation for economic development and stability, as well as for environmental protection. To address these concerns on campus, MSU Denver created the One World One Water Center for Urban Water Education and Stewardship (O'WOW Center). Through the O'WOW Center, students and communities learn how water issues intersect with important economic and environmental factors via in-class learning and participation in water-related community outreach efforts. These activities correspond to MSU Denver's "urban land grant mission" by helping to create an educated, empowered, solution-oriented, Colorado citizenry that protects and preserves our water resources. Water use and management have played a fundamental role in Colorado history and will continue to shape our future. The mission of the One World One Water Center for Urban Water Education and Stewardship is to transform our community's knowledge of and encourage active participation in Colorado's critical water issues.

One of the first accomplishments of the O'WOW Center was the creation of a Water Studies minor for all academic majors at the university, accompanied by extra-curricular and community activities. The distinctiveness of the minor and the additional activities is that they focus on creating water stewards and not simply water scientists, lawyers, engineers or other stereotypical career paths for those interested in water. The classes and activities focus on the tough issues facing water users in the West, such as water shortages, population growth, conflicting water management efforts, public education, and outreach. O'WOW curricula and programs are designed to create water stewards regardless of major or selected career.

O'WOW Center Development

The project began during the fall of 2010 when MSU Denver was challenged to develop the concept of what water education could look like for the university as a condition of a gift of the bronze, One World, One Water sculpture (See Figure 1). Research on current efforts at Colorado State University, the University of Colorado, and



Figure 1. "One World, One Water," a bronze by Rik Sargent, is located in front of the Student Success Building at Metropolitan State University in Denver.

the University of Denver indicated that an "urban" focus on water resources education was needed. In addition, it became clear that students in the arts and humanities needed opportunities to participate as well, since not all water issues are purely science, legal or policy oriented. This ultimately led to the creation of water-related courses and activities in all colleges at MSU Denver – College of Professional Studies, College of Letters, Arts & Sciences, College of Business, and the School of Education. The work was facilitated by an anonymous gift of $1 million over a five-year period.

Development of the funding criteria, course development strategy, and student marketing requirements occurred during the first half of 2011. Funds were earmarked for staff salaries, office space, on- and off-campus events, training, course development, and student scholarships. This process occurred in collaboration with a university-wide advisory group that included faculty from Earth & Atmospheric Sciences, Business, Industrial Design, Art, History, Deans from the Colleges of Professional Studies, Business, and Letters, Arts & Sciences, and the Provost.

The cornerstone of the campus outreach, and impetus for the program, is Rik Sargent's bronze called One World, One Water. The O'WOW Center installed and dedicated the One World, One Water sculpture at a campus entryway in front of MSU Denver's new Student Success Building. Engraved in the entryway walkway are numerous quotes about the value of water, reminders literally set in concrete to bring awareness about the topic of water. The sculpture was donated by local philanthropist, Valerie Gates. It is a 3000-pound, 12-foot-high, 8-foot-deep, 10-foot-wide educational sculpture in an infinity form shaped as a single drop of water, weaving together watersheds and eco-systems (See Figure 1). It was designed by the sculptor as a unity symbol, combining art, science and education, and honors water education at MSU Denver and around the world. The National Sculpture Society, the oldest organization of professional sculptors in the United States, accepted One World, One Water into its annual juried show in 2012. A 24-inch maquette traveled across the eastern United States, representing the piece.

The MSU institutional mission statement, "Transforming Lives," was our guiding principle as we developed the Vision and Mission Statements for the O'WOW Center. This led to development of a Strategic Five-Year Plan which identified goals and objectives, fundraising targets, student recruitment, and community outreach. It was important that these efforts were inclusive, collaborative, and sustainable. According to Hinton,

> *The impact of institutional culture on strategic planning cannot be overestimated. In fact, if you gave the same strategic plan to ten different institutions, those institutions would each interpret the plan differently and develop ten different implementation plans. These differences are usually the result of at least three critical factors: the institution's unique environment (including the institutional mission and history of the organization); the structure and competence of the administrative staff of the institution; and, the development of staff commitment to planning* (Hinton 2012, 23).

This observation was apparent throughout our strategic planning process in that the "culture" of MSU Denver was embedded within the final goals and objectives. "Transforming Lives" meant providing opportunities for students to have access to relevant water-related courses on campus, to identify and provide meaningful internships in water-related professions, and to allow our students to have a voice in water policy conversations. This has occurred numerous times through hosting of state water plan meetings on campus, linking students with internships at local, state and federal water agencies, and providing opportunities for students to voice their opinions and perspectives in relevant water conversations across the state.

The donor agreement was signed in August 2011, and a program director was hired in December 2011. Work began in earnest at that time, and with the hiring of a half-time Assistant Director in February 2012, water-related events on campus flourished. Course development and creation of the pilot Water Studies minor occurred during the winter and spring of 2012, and the first water courses for the minor were offered during fall semester of 2012.

The One World One Water Center was created and housed within the College of Professional Studies at MSU Denver, and not placed within an academic department. There were several reasons for this organizational placement at the university. First, it was vital that the O'WOW Center was not perceived as focusing on only one academic program at the university, i.e., Earth Sciences or Political Policy or Pre-Law. It was important that all faculty and students felt included in the outreach of the program, and that the O'WOW Center was not strictly a one-dimensional academic unit.

Second, having the O'WOW Center as a separate entity at the university provided vast opportunities for dialogue, engagement and collaboration. Part of the challenge (and success) of the program was creating interest in and support for the new effort toward water stewardship education on campus with faculty and administrators. As with many other colleges or universities, new programs too often come and go, but the focus on water was an intriguing and widely supported topic of conversation and engagement at MSU Denver.

Third, it has been critical to have the Dean of the College of Professional Studies as the leader of this effort to help converge and connect with other academic and administrative units at the university. Academic institutions, by nature, are often silo-encased, rigidly administered institutions which can hinder cross-department (both academic and administrative) collaboration. It was vital to have the O'WOW Center part of the College of Professional Studies, with the Director reporting directly to the College Dean, Dr. Sandra Haynes. This provided a passionate internal advocate to open doors to various administrative departments on campus, as well as high level access to other Deans, Vice-Presidents, and the Provost's Office at MSU Denver.

As alluded, the Center has three major functions designed to deepen students' understanding of water as a critical resource that must be sustained and conserved for all:

1. To offer an interdisciplinary Water Studies minor to complement a wide variety of majors.
2. To provide enriching co-curricular activities.
3. To enhance water stewardship on and beyond campus by promoting experiential opportunities on and beyond the Auraria Campus.

Thus, the O'WOW Center has formal, curricular, and informal, co- and extra-curricular, education components. The enriching co-curricular activities and experiential opportunities were included to provide real world, hands-on settings for students to apply knowledge obtained in the classroom. These methods of learning are widely accepted and encouraged since "the importance of promoting retention of college students lies not merely in maintaining their numbers for the sake of retention statistics, but more in providing students with value-added experiences that will benefit them upon their leaving college." (Tan et al. 2015, 2). These components were developed by the university-wide advisory group described above. Early on, it was determined that a Water Studies minor at MSU Denver would be the primary way to create water stewards on and beyond the campus, and will be described in more detail below.

Formal Education

The Water Studies Minor

Although some courses in water were taught at MSU Denver prior to the implementation of the Water Studies minor, they were relegated to specific departments such as Earth and Atmospheric Sciences, Biology, and Chemistry and no degree programs existed in water-related areas. An 18-credit hour curriculum was developed – with input from faculty familiar with water studies topics and an industry advisory council – to facilitate education of students from a wide range of disciplines including sciences, humanities, arts, and professional. The Water Studies minor includes three core courses: Water Essentials, Colorado Water Law and Water Rights Administration, and Water Conflict: Applied Leadership Communication.

It was widely agreed that a basic "Water 101" course would be needed to introduce the topic of water to students not familiar with the topic. A faculty member from the Department of Earth and Atmospheric Sciences offered to create "Water Essentials", a freshman-sophomore level introductory water class that covers topics of ancient water history, surface and groundwater hydrology, water quality, irrigation and municipal water uses, dams, water law, environmental issues, conservation, wastewater treatment, and future conflicts – from Colorado, U.S. and world perspectives.

The second core course is "Colorado Water Law and Water Rights Administration." Colorado has the most legally rigid method of water administration in the U.S., and must be understood by water stewards if they are effectively going to understand and engage in water resources issues and opportunities. The course is taught by a practicing water attorney, but is geared for non-technical students. It is hugely popular with class participants.

The third core course, "Water Conflict: Applied Leadership Communication," is in the Department of Communications Arts and Sciences. The advisory group determined there was a need for a core class in water conflict resolution, since conflict over water is common in Colorado and the West. We were not aware of a similar class like this at other universities, so it was identified as a great opportunity to develop an innovative course for the new Water Studies minor.

To complete the minor, two other elective courses selected from water-related courses from departments across campus are required, as well as completion of a senior internship or capstone project. The electives include, for example, land use and water quality courses in the Earth & Atmospheric Sciences Department, senior seminar course in the Theatre Department, survey and marketing class in the Business College, and a social documentary course in the Journalism Department. Academic majors showing initial interest are Geography, Environmental Science, Biology, Earth Sciences, Psychology, English, Industrial Design, Anthropology, Sociology, Teacher Education, History, Business, Art, and even Theatre. Faculty from across the MSU Denver campus offer water-related courses in disciplines including Earth and Atmospheric Sciences, Environmental Science, Management, Journalism, Industrial Design, Women's Studies, the Arts and more. Students gain an understanding of the importance of water and how to integrate that focus within other academic and career interests.

Internship work occurs generally at a water resources organization or agency, but many non-profits (involved in environmental protection, water quality, and water policy) have provided internships for students in the Water Studies minor. Internships follow a prescribed syllabus with specific learning objectives. The internship requirement has been a popular and very important part of the Water Studies minor for several reasons. Internships have provided students with real world experiences in areas of water resources. The experience has helped some students begin their careers after graduation at these same water industries, and in a few cases has exposed students to other areas of water resources not considered previously.

The internships have generated much interest with water-related groups in the area, and have allowed the O'WOW Center to partner with these groups on other collaboration opportunities – such as class and lunch speakers on campus, partnering on field trips, funding for water-related programs

on and off campus, and helping to identify industry needs of recent graduates. Internships are a major resource for helping students find entry-level jobs in water resources (Korn 2013).

Capstone projects could be performed individually or by a team, and are identified through collaboration of an academic department and the O'WOW Center. Students must have a faculty advisor for a capstone project, and learning goals are determined by the faculty and the academic department. Projects can be done individually or in a group, determined by the nature of the project. A goal is to include industry in the selection of a capstone project, as well as the growing undergraduate research program at MSU Denver. The value of capstone projects cannot be over emphasized. "Companies report that 69 percent of summer interns who applied for full-time positions received offers, according to a recent survey from the Graduate Management Admission Council, with even higher conversion rates in consulting, finance and accounting" (Edgar et al. 2011, 21).

Electives are selected with assistance and approval from the O'WOW Center staff or from the student's academic department major. A partial list of classes are provided to students, although a very wide range of courses can be utilized as an elective, depending upon the student's major.

Water Studies Certificate

A Water Studies Certificate was created in Fall of 2015 to provide opportunities for students to complete the same program of study as the Water Studies minor. The certificate program allows a student to "double count" courses for their non-water academic major or minor and the Water Studies Certificate; this is typically not allowed for a major and minor. Many students were very interested in completing the Water Studies minor, but learned about the program too near graduation to take the extra courses or were in declared majors that overlapped with the Water Studies electives. The certificate will allow these students to complete the program of study while still graduating on schedule. In addition, the certificate can be taken by non-degree seeking students – a popular idea with working water professionals and others who are interested in gaining a broader perspective of water resources issues.

Informal Education

Providing enriching co-curricular activities

Water Studies students are encouraged, but not required, to engage in a variety of optional activities on and beyond the Auraria Campus in downtown Denver. Students have created the Water Association of Student Stewards Urban Program (WASSUP) Club, and meet several times each month to plan and participate in activities such as Lunch and Learn events, cleanup of nearby Cherry Creek, tours of water-related facilities in Denver and along the Front Range of Colorado, and to host speakers on campus. It is important that students engage in "real life" impacts of water resources in Colorado via conversations with those stakeholders directly affected by and involved with water policy. Face-to-face meetings are essential for students to facilitate their understanding of the issues and to practice conflict resolution skills.

Enhancing water stewardship on and beyond campus by promoting effective use of water resources

The creation of the O'WOW Center has helped immerse MSU Denver students in water issues, and also creates visibility and education about water stewardship for the students at the Community College of Denver and the University of Colorado, Denver, who also share the Auraria Campus. Students have adopted a one-mile reach of Cherry Creek (located near the campus) and conduct semi-monthly trash clean-up efforts facilitated by the student water club and the Department of Earth and Atmospheric Sciences at MSU Denver. In addition, students have assisted with note-taking at state water planning meetings, conducted campus-wide water audits, and have given presentations to small groups regarding the state water plan and its implications for future population growth in the region. In addition, students have participated in a wide range of internships off campus – ranging from summer positions at Trout Unlimited and the Colorado Water Trust, to state agency work at the Colorado Department of Public Health and Environment, and the Colorado Archives. Each experience has provided students with a broader understanding of water resources issues in Colorado, the ability

to contribute toward water stewardship efforts of various organizations, and allowed students to engage in broader discussions on water in the state.

Advisory Council

An important part of community engagement was the establishment of the O'WOW Center Advisory Council (21 members). The council is comprised of leaders in water from around the state. The board is designed to advise on curriculum issues, assist with community outreach, and with fundraising. Through the advisory council and other efforts, the O'WOW Center has established partnerships/relationships with key people in the water community including water representatives from the Colorado Water Conservation Board, Colorado Foundation for Water Education, Denver Botanic Gardens, Tri-County Water Agency, Colorado Water Institute, Colorado Water Archives at Colorado State University, Colorado Water Congress, Nuestro Rio, U.S. Bureau of Reclamation, Denver Water, Colorado Department of Public Health and the Environment, Aurora Water, City of Boulder, Colorado Water 2012 Committee, the Greenway Foundation, History Colorado, Project WET trainers in Colorado, South Metro Water Authority, American Water Works Association, American Water Resources Association, Central Colorado Water Conservancy District, and the Colorado Archives. With these relationships, the O'WOW Center has developed internships, funding opportunities, and other partnerships with some of the most important agencies in water in the state.

Current Status

The project is in its fourth year of implementation and has already made a tangible impact on the campus and region. The Water Studies minor courses at MSU Denver have over 100 students currently enrolled, and are providing a great resource for students to learn more about water in the region, discover career opportunities, and to become water stewards. Over 50 students have signed up for the two-year old Water Studies minor, and 12 students have graduated with the minor.

The O'WOW Center has provided many co-curricular enrichment activities for the entire Auraria Campus. Hosting water-related authors as guest speakers has generated the most interest, with over 100 people attending each of these events. Classroom speakers provide the next best forum, and numbers range from 20-30 students in attendance. Topical speakers (water managers, climate experts, etc.) can have a wide range of participation depending upon time/day of week, placement during the semester, and even weather, and has ranged from 10-30 students in attendance. Internships have also been a popular method of engagement for students, and to-date over 25 students have worked at water-related organizations in the area in the past two years.

The library on campus serves MSU Denver, the University of Colorado, Denver, and the Community College of Denver, as well as visitors. It is an ideal location for permanent and non-permanent education materials. Working with the Director of the Auraria Library, the O'WOW Center helped place a large digital display system (called the Discovery Wall) in the library to include interviews, TED talks, information on the new Water Studies minor, water news, short features, and other presentations. The Center also places banners, brochures, water-topic books, and other water-related items in the library.

The O'WOW Center placed banners in the Tivoli Student Union, Science Classroom Building, Administration Building, and other appropriate locations on campus and has worked with the on-campus coffee shop to place table tents offering free coffee to "like" the O'WOW Center's Facebook page. Additionally, the O'WOW Center has a dedicated webpage and social media presence via Facebook, Twitter, and Instagram.

Community engagement occurs both on and off campus, and occurs through the support and through the coordination of the O'WOW Center. Numerous speaking events, open to both students and the community, have been sponsored by the O'WOW Center including Brad Udall, Western Water Assessment, Carly Jerla, U.S. Bureau of Reclamation, Jorge Figureroa, Western Resource Advocates, authors Paolo Bacigalupi and Kevin Fedarko, and acequia expert Dr. Devon Pena.

These and other speakers presented on topics as diverse as fracking, acequias (Spanish irrigation systems), global climate change, Colorado's state water plan, endangered whooping crane migration, and water careers. MSU Denver was very pleased to be the first university to host the Metro Water Basin Roundtable annual meeting – a water resources information/planning event for the Denver metro region which brought about 80 people to the campus.

Co-curricular activities hosted by the O'WOW Center are sometimes limited to students, but are often open to the public. Field trips that provide hands on learning are an important part of the O'WOW Center. Field trips have been conducted in the following locations:

- Colorado River on the western slope of Colorado to view irrigation diversion structures, visit an organic irrigated farm, and to learn about crop production issues;
- San Luis, Colorado, for a class from the Department of Chicana/o Studies, to learn about acequia irrigation systems;
- Central Nebraska for a photo journalism class to view the Sandhill crane migration and to write magazine-style articles regarding their perceptions of the migration;
- A water diplomat program in downtown Denver for university students from across Colorado.

Each of these field trips included 10-30 students, and provided students with opportunities to visit with local water managers, learn about local water issues, and see first-hand the complexities of water management in semi-arid regions of the U.S.

The Center provided an O'WOW Center Award of $100 at the Undergraduate Research Conference at MSU Denver for the best water-related research to encourage participation in water education across campus and support high-impact educational practices. A similar award was also provided for the annual MSU Denver speech competition called the "Spectacular Vernacular." Last year 12 students (primarily Speech majors) developed persuasive and/or informative speeches related to the topic of water, and successfully engaged a new academic department with the topic of water.

MSU Denver has a unique decision theater called the Center for Advanced Visualization and Experiential Analysis (CAVEA). The purpose of a decision theater is to visually display data in a variety of formats to assist participants with a decision making process. CAVEA combines a multi-room facility, with advanced technology to support users in making better decisions through visualization and collaborative problem-solving. It will be used for a variety of water resources efforts with students, faculty, and regional water agencies. The O'WOW Center and the CAVEA Director are presently working with the Colorado Water Conservation Board to assess various data-driven scenarios, such as watershed restoration issues, population growth and water supply alternatives, and impaired water quality locations, for improved water management on the South Platte River and other river basins across Colorado. The CAVEA will allow stakeholders to view complex data sets as overlays on land use maps, within geologic formations, through time lapse photography, and a host of other visual applications. Two adjacent breakout rooms can be used by groups to reevaluate legal or policy positions to seek compromise on contentious water resource issues. A facilitator would also be engaged for such situations. Water policy experts and water resources planners would benefit greatly from this discussion, and scenarios developed through this process could be used by river basin planning roundtables located throughout Colorado.

In 2014, the Center organized, hosted, and sponsored the first ever University Water Festival on campus. Over 800 middle school students and their teachers participated, and exhibitors included Denver Water, Central Colorado Water Conservancy District, Northern Colorado Water Conservancy District, Aurora Water, Denver Zoo, O'WOW Center, Auraria Library.

The Center helped coordinate and assisted with Roadrunners Give Back/Comcast Cares/ Greenway Foundation Volunteer Day. This day was organized by campus in conjunction with two community organizations to clean up around campus and several miles along the South Platter River. Our proximity to the river (located just a

block from campus) provides opportunities for collaboration with groups such as the Colorado Foundation for Water Education Urban Bike Tours along the South Platte. These tours provide valuable hands-on education experiences regarding specific urban water resource issues.

The O'WOW Center has also worked with the Auraria Higher Education Corporation (AHEC) to create an edible garden on campus, and hosted a "Wine & Water" event with the Colorado Supreme Court Library and the University of Denver. Other examples of collaboration included hosting discussions of ancient water systems such as Machu Picchu, organizing a "Water and the Arts" event in 2013, helping to organize "Family Water History" events with History Colorado, and hosting the French Consulate's seminar on Climate Change and Public Health on campus in June 2015.

Conclusion

Seven new courses have been developed for the Water Studies minor. The One World, One Water sculpture was installed and dedicated at a campus entryway in front of MSU Denver's new Student Success Building. A dedicated website and social media outlets have been developed. Numerous water-related events have been held on the Auraria Campus. Many student internships have been completed, and recent graduates are beginning careers in water resources fields.

The following valuable lessons have been learned during this pilot process, and have been identified through formal and informal assessments:

1. University administration support has been essential to the development of the O'WOW Center, and will continue to be crucial to its success. The donor provided $1M over five years to start the project, but the University Board of Trustees, through the support of the President, also provided over $400,000 over that same time period. The Provost's Office, College Deans, and various administrative department leaders have all provided assistance with student outreach, assistance in curriculum development – and in many cases financial support. These university-wide efforts helped encourage students to register for the water studies classes, assisted the O'WOW staff in navigating the complex issues related to curriculum approval processes, academic advising challenges, and greater engagement of faculty members – generally the gate keepers of student engagement.
2. Hiring people who have experience with water education, higher education, and the water community is crucial to O'WOW outreach efforts. O'WOW staff and administration must be "connectors," and have a passion for water education, students, and other faculty and staff. Without employees interested in establishing connections among water professionals and the campus community, the number of internships offered and grants secured thus far would have been impossible (Pertuze et al. 2010).
3. Marketing to students and the community requires person-to-person contact, good relationships with faculty, and coordination with career services, academic advisors, and recruiters off campus. MSU Denver is a commuter campus, with most of the 22,000 undergraduate students traveling to campus by car, bus and light rail. In addition, 89 percent of the students work part- or full-time, and many have families (the average age of students is 25). Therefore, connecting and engaging students has been a major challenge, and it has been found that most students learn of the O'WOW Center and the Water Studies minor through classroom presentations and recommendations from academic advisors. Positive relationships and awareness building, with faculty and advisors, has played a major role in student recruitment. This has been confirmed through informal surveys of students and faculty regarding how they heard of the O'WOW Center, and what methods of program information delivery works best for them.
4. In order to keep students engaged it is important to show them how the new minor can help with future job opportunities. One

of the very first questions that students ask about the Water Studies minor is "What types of jobs will be available if I take these courses?" Water career information is not readily available to many students, possibly because students do not conduct enough individual research, or perhaps because the water community does not have strong connections with undergraduate students who are seeking careers in non-scientific disciplines. Connecting and engaging students and future employers has been a rewarding aspect of this program, generally through internships and entry-level job opportunities. An example is a psychology major with an interest in behavioral change toward water conservation. She worked at a water trust organization to change perceptions toward environmental protection.

5. Selection of a high profile industry and community advisory council is important because they can provide invaluable connections, perspectives, and insight sometimes overlooked by educational efforts. The advisory council initially met face-to-face four times per year, and now has created a committee structure to reduce meetings to twice annually. Separate committees take responsibility for the areas of internships, fundraising, student success surveys, and off-campus programming activities. This assistance is critical to add credibility to a new program, and identify potential collaborations. Other areas of support were identification of internships, fundraising opportunities, and recommendations regarding implementation of the strategic plan and attention to "mission creep."

A significant element of the O'WOW Center's programs is "How is it relevant to the needs of the water community?" Are we teaching the proper courses, providing appropriate field trip opportunities, and connecting students with internships that help them find fulfilling careers, and to become water stewards? This will be determined by placement of graduates, involvement in local water issues, general improved awareness of water issues in the region, and the extent of involvement in voluntary and non-profit water related activities. This will be measured by alumni and water industry surveys (created by our Advisory Council), review of core curriculum content by members of the water/environmental community, and continuous outreach and feedback from current and potential employers.

According to MIT Sloan Management Review, best practices for creating university/industry partnerships include:

- Building strong communication linkage with the university team.
- Building broad awareness of the project within the company (industry)
- Investing in long-term relationships
- Selecting boundary spanning project managers (Pertuze et al. 2010)

In retrospect, connecting industry leaders sooner with faculty members could have paid more immediate dividends (in terms of internships and undergraduate research opportunities). However, building relationships takes time, and rushing into partnerships is not necessarily a wise move. Concurrently, the O'WOW Center staff could have spent more time recruiting students into the Water Studies minor, to the detriment of other phases of the program. However, the Water Studies courses must prove relevant and worthwhile to be attractive to undecided students. The challenge has been where best to focus the time and energy of only two full-time staff members.

Each institution is unique, and new programs will be developed to fit the needs and culture of the organization. The One World One World Center at MSU Denver has benefited greatly by following the best practices described above, having a very supportive faculty and administration on campus, and engaging industry in program development.

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Author Bio and Contact Information

Sandra D. Haynes, Ph.D, has served as Dean of the College of Professional Studies of Metropolitan State University of Denver since 2003. Haynes's collaborative

approach helped obtain approval for a new Hotel and Hotel Learning Center, athletics complex, and Aerospace Engineering Sciences Building. Dr. Haynes helped secure a $9.5 million Teacher Quality Enhancement Grant, and a $3.8 million Title III Grant to improve advising college-wide and establish a School of Education. Haynes was the primary person responsible for obtaining the "One World, One Water" sculpture and the $1 million grant to create the Water Studies program. She was a 2010-11 American Council on Education Fellow, received the 2009 Metro State President's Award for Distinguished Service, and 2004 Outstanding Woman's Award for the Advancement of Education for Woman. In 2014, Haynes was awarded an honorary doctorate and professorship by the University of Pecs in Hungary for her work in developing international partnerships. Dr. Haynes may be reached at hayness@msudenver.edu.

Tom Cech was born and raised on a farm near Clarkson, Nebraska, graduated from Kearney State College with a Bachelor of Science Degree in Math Education, and later received a Master's Degree in Community and Regional Planning from the University of Nebraska, Lincoln. He was Executive Director of the Central Colorado Water Conservancy District in Greeley, taught undergraduate and graduate level water resources courses at the University of Northern Colorado and Colorado State University, and is now the Director of the One World One Water (O'WOW) Center for Urban Water Education and Stewardship at Metropolitan State University of Denver. Tom wrote *Principles of Water Resources: History, Development, Management and Policy*, published by John Wiley & Sons – currently in its 3rd edition. Tom also published *Introduction to Water Resources and Environmental Issues,* (co-author Dr. Karrie Pennington) with Cambridge University Press, and *Colorado Water Law for Non-Lawyers*, (co-author P. Andrew Jones) with the University Press of Colorado. He may be contacted at tcech@msudenver.edu.

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