
North Dakota State University
American Water Works Association
Water Environment Federation
Student Chapter



Annual Report 2006-2007



Table of Contents

Introduction	3
Membership	3
Officers	4
Meetings/Speakers	4
WEFTEC® Student Design Competition.....	5
Volunteer Activities	5
Budget	7
Future Plans	8

Introduction

The past year has been extremely successful for North Dakota State University American Water Works Association / Water Environment Federation (NDSU AWWA/WEF) Student Chapter in all aspects of the organization. While the organization has been in existence since 1995, it has not seen the growth and activity present during the 2006-2007 academic year.

Membership has increased over 400% since last year. The intellectual support given by the local engineering firms and municipalities has been astounding, particularly in providing a number of fantastic guest speakers. The ambitious members of NDSU AWWA/WEF competed once again in the WEFTEC® Student Design Competition, placing 3rd. In addition, the organization has participated in a number of community activities to promote the education of youths and the community regarding water and environmental issues.

NDSU AWWA/WEF has established documentation and leadership to ensure the future success of the organization. During the past academic year NDSU AWWA/WEF has created a constitution and bylaws in accordance with the State and national levels of AWWA and WEF, as well as requirements by NDSU (See Appendix A). Our organization is structured with a president, vice president, secretary, treasurer, public relations officer, and activities coordinators. We also have two fantastic faculty advisors, Dr. Wei Lin and Dr. Eakalak Khan.

Membership

NDSU AWWA/WEF during the past academic year has placed a great deal of time and effort to increase student membership. Due to this effort our organization has seen tremendous growth during the 2006-2007 academic year. The name of renewal members and new members are found below.

Renewal (7)

Christopher Hill
Zachary Maruska
Haley Watson
Matt Baker
Corey Bjornberg
Thunyalux Ratpukdi
Sreerama Kasi Somayajula

New (25)

Marja Ekola
Celia Norgaard
Matthew Neppl
Aaron Fisk
Darin Lindblom
Lorin Mislán
Melissa Mistelski
Daniel Portlock
Jay Forthun
Jared Hoerner
Dustin Dale
Adam Wilson
Jennifer Vad
Maria Mandoza
Benjamin Jilk
Taylor Amiot
Dustin Schultz
Chang Qigang
JacobKuntz
Sudipta Pramanik
Sumana Siripattanakul
Kristen Karnick
Shrestha Suman
Sita Krajangpan
Chris Saxton

Officers

NDSU AWWA/WEF prides their selves on sound leadership. Our officers are in charge of guiding the organization by making ethical and intelligent decisions. The officers for the 2006-2007 academic year were very successful leaders and provided the foundation for the future of the organization. We recently held officer elections and have high expectations for the upcoming leaders.

Officers	2006-2007	2007-2008
President	Haley Watson	Corey Bjornberg
Vice President	Corey Bjornberg	Jared Hoerner
Treasurer	Christopher Hill	Dustin Dale
Secretary	Matt Baker	Lorin Mislán
Public Relations	Zach Maruska	Zach Maruska
Activity Coords.	Taylor Amiot Ben Julson	Daniel Portlock Marja Ekola Celia Norgaard

Meetings/Speakers

Each month we held an organization meeting as well as an officer meeting. The purpose of the officer meeting was to make sure everyone was on the same page, and that everything for the upcoming meeting was taken care of. Often times we would write our agenda, send an email to the entire group, and print posters to hang around the school. Each organization meeting included any signups for upcoming events, new business that needed to be attended to, as well as a guest speaker. Our speakers were generally engineers from the community speaking on issues relevant to our group and to engineering students as a whole.

Our speakers and topics covered at this year's meetings include:

- Eric Dodds, PE
Advanced Engineering and Environmental Services, Inc. (AE2S)
City of Fargo Wastewater Collection System Master Plan
- Tom Welle, PE
Ulteig Engineers, Inc
Sanitary Sewer Overflow Inspection and Investigation
- Eric Dodds, PE; Russ Sorenson, PE; Cory Chorne, PE
AE2S
Engineering Process
- Bob Zimmerman, Ph D, PE
City of Moorhead
Moorhead Wastewater Treatment Facility
- Troy Hall
City of Moorhead
Moorhead Water Treatment Plant: Automation
- Dr. Wei Lin
North Dakota State University
TMDL Research
- Dr. Achintya N. Bezbaruah

WEFTEC® Student Design Competition

WEFTEC® is the single most powerful driving force for our organization. The conference provides NDSU AWWA/WEF members to compete on a national level, network, attend technical lectures, view state of the art technologies, and most important have FUN! We have used past experiences as a successful marketing tool to recruit new members.

NDSU AWWA/WEF has participated in the WEFTEC® Student Design Competition for the past four years. For WEFTEC06®, the NDSU Student Chapter selected, with the help of ND WEA, “Sanitary Sewer Overflow Management System for Fargo, ND” as our design topic. In order to become familiar with the topic, we obtained several reports from local engineering firms regarding the issue. We educated ourselves with the subject and chose three possible solutions to research and design: conveyance, storage, and treatment. Seven students traveled to Dallas for WEFTEC06®.

During WEFTEC®06 we receive 3rd place out of seven teams from around the country. Our project provided our chapter with national recognition (See Appendix C for full report). In addition, our members found the experience very educational and great preparation for the engineering consulting world. After returning from WEFTEC®06, our *Environmental Design Team* conducted two additional presentations of our design to NDSU Civil Engineering Graduate Seminar and City of Fargo.

NDSU AWWA/WEF strongly feels our large student attendance at WEFTEC® promotes ND WEA. We hope to maintain a strong presence at WEFTEC®, not only for North Dakota State University, but for North Dakota as a state!

Volunteer Activities

The AWWA/WEF student members spent a significant amount of time not only educating themselves but others as well. Most of the time, we were teaching the area’s youth about the importance of water and the environment. We used labs to incorporate hands-on learning. The time in the classroom was also used to educate students about the possibilities in engineering and science after high school. This organization feels it is very important to encourage young people to consider engineering as a field of study. This year, the activities that the AWWA/WEF student members have participated in, include:

- Graduate-Student-University-School (GraSUS)
- World Water Monitoring Day
- Sunday Academy
- Science Fairs
- Science Olympiad

- Marketplace for Kids
- Expanding Your Horizons

A summary of each of these events will be provided in this report.

GraSUS

According to the NDSU GraSUS website,

GraSUS - II is a program dedicated to increasing the quality of science and mathematics education in Grades 6-12 through the direct involvement of science, mathematics, and engineering graduate and undergraduate students and through enhanced professional development of science and mathematics teachers. GraSUS - II is a GK-12 program supported by National Science Foundation Project DGE-0338128 and by North Dakota State University.

The program is used to increase the implementation of technology and engineering in junior high and high school. Haley Watson, NDSU AWWA/WEF President, received a fellowship with the GraSUS program during the 2006-2007 academic year. NDSU AWWA/WEF identified a unique opportunity for our chapter to reach out to high school student through Haley's fellowship. Therefore, a number of our members created and implemented a water quality lab for students at Fargo South High School. The lab consisted of providing an introductory presentation to water quality and a hands-on lab. The students tested various characteristics of water including pH, turbidity, and temperature. They were also educated on the importance of water quality and other various lab tests that we were unable to reproduce in a high school setting.

World Water Monitoring Day is an annual event promoting clean water. Our student group chose a day in October to test the waters of the Red River of the North, in Fargo, ND. Nine students ventured out to test the pH, turbidity, temperature, and dissolved oxygen of the river. Because this was the first time we have participated in this event, we kept it small. There have been discussions of making it a larger, community event in the future. This would be something that we could invite local students (as young as elementary age) out with their families to teach them about water quality, and help them test the water. It is a fun way to educate our community.

Sunday Academy is part of the Nurturing American Tribal Undergraduate Research and Education (NATURE) Program, sponsored by EPSCoR. A number of our members participated in the once a month event. Our contribution to the program consisted of traveling to reservation, implementing the lesson plan, and promoting engineering.

North Dakota Science Fairs serve a very important role in the development of future engineers, which is why during the 2006-2007 academic year members of NDSU AWWA/WEF volunteered to judge at all levels of the event. Our organization was relied on heavily for judging at these various events.

Science Olympiad is another opportunity for aspiring engineers to be challenged through healthy competition. NDSU AWWA/WEF and six members facilitated the Amazing Aquifer competition for Science Olympiad.

Marketplace for Kids promotes science, mathematics, and engineering while molding young entrepreneurs. Seven NDSU AWWA/WEF members developed and conducted a hands-on lab focusing on Reduce, Reuse, and Recycle. Approximately 200 4th - 6th grade students participated in the 3R's lab with a great deal of enthusiasm.

Expanding Your Horizons is used to inspire young women to pursue further education in science, mathematics, and engineering. This year NDSU AWWA/WEF members volunteered to facilitate two hands-on labs, focused on environmental engineering, for the Expanding Your Horizons program: Water Quality and Water Filtration.

Budget

NDSU AWWA/WEF Student Chapter could not exist without the financial support of ND AWWA and WEA professional chapters, as well as benevolent corporations. A summary of our income and expenses can be seen below.

Income	
ND Section of AWWA	\$ 1,499.76
Ulteig Engineers	\$ 750.00
Kadmas, Lee & Jackson	\$ 750.00
WEFTEC06 Winnings	\$ 750.00
ND WEA	\$ 500.00
Peak Oilfield Services	\$ 500.00
AE2S	\$ 250.00
NDSU	\$ 720.36
Total Income	\$5,720.12

Expenses	
WEFTEC06 Airfare/Taxi (7 students)	\$ 2,186.32
WEFTEC06 Hotel (Quality Inn 2 rooms, 5 nights)	\$ 527.20
WEFTEC06 Supplies/Shirts	\$ 553.68
ND AWWA Conference 06 Hotel (Holiday Inn 1 room 2 nights)	\$ 202.02
ND AWWA Conference 06 Travel (579 mile @ \$.30/mile)	\$ 173.70
Meeting Expenses/Refreshments	\$ 811.35
Total Expense	\$ 4,454.27

Future Plans

NDSU AWWA/WEF has built up a great deal of momentum during the 2006-2007 academic year. We plan to utilize this momentum to drive further growth and success in our organization. Our ambitious members and spectacular leadership provide a foundation for the future. The chapter has developed several short term and long term for the future.

Currently, NDSU AWWA/WEF and University of Manitoba WEF (UMWEF) Student Chapters are organizing a seminar between our two institutions. The focus of the seminar is water and environmental research. This will be a two-part seminar between NDSU AWWA/WEF and UMWEF taking place over two years. The first part will take place at the University of Manitoba; the tentative dates set for the seminar are August 1 - 3, 2007. The second session of the seminar will be conducted at NDSU in 2008.

In addition to developing a relationship with UMWEF, our organization will be working to become more active with our professional counterparts: the NDAWWA and ND WEA. NDSU AWWA/WEF has already committed to organizing the poster session for the 2008 Surface Water Treatment Workshop to be held in April 2008. In addition, we hope to be involved in the planning and organization of the North Dakota Water Pollution Control Conference scheduled for October 24th - 26th. Our student chapter feels a closer relationship with our professional counterparts will be beneficial to all parties.

Once again, NDSU AWWA/WEF Student Chapter will be participating in the WEFTEC®07 Student Design Competition. This year's design project is titled "Design for the Future: Upgrading an Existing HPOAS Process." The project consists of the design of an integrated fixed film activated sludge (IFAS) process to replace the current high purity oxygen activated sludge (HPOAS) process at the Moorhead Wastewater Treatment Facility. Currently, there are 20 individuals working on the project. We have seen a great deal of progress thus far on the project and are looking forward to the competition.

NDSU AWWA/WEF Student Chapter had a wonderful 2006-2007 academic year. We are confident the 2007-2008 academic year will be even better. Once again, the success of our organization is directly correlated with the moral and financial support given to NDSU AWWA/WEF by benevolent organizations, companies, and consulting firms.