

Intern program impacts businesses & students

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Since 1985, MnTAP has been coordinating an intern program that places highly qualified students in facilities for up to three months. MnTAP began offering the program as a way to affect change in businesses. The goal of the program is to provide benefits to businesses and students while building MnTAP's knowledge base and extending our services to businesses.

Participating businesses receive, at low-cost, an intern who researches and provides solutions for pollution prevention and energy efficiency. These solutions are designed to be specific to the facility and reasonably feasible. Often, the savings realized from implementation far outweigh a company's cost-share.

Interns who have participated in the program have gained hands-on experience that they often credit for enhancing their

education and preparing them for careers. A number of past interns weighed in on the impact the program had on their education and future careers.

MnTAP has also benefitted from offering the program over the years. The staff members who have mentored the interns have not only learned about the recommended opportunities, but have been able to take that knowledge to other businesses to help them reduce waste, energy use, and costs.

In the 26 years since the program began, the experience has impacted Minnesota businesses, the interns, and MnTAP in many positive ways. This issue of the Source is dedicated to the intern program in an attempt to highlight the success stories from businesses and former interns. ■

Lou-Rich hosted an intern & identified \$89,000 in savings

Lou-Rich Inc. is a contract engineering and manufacturing company based in Albert Lea, Minnesota. Lou-Rich designs, fabricates, machines, paints, and assembles products for a variety of OEM companies.

Lou-Rich was in the final design phase of the installation of a new paint line system. Management's goals for the new paint line were numerous: move from mostly liquid paint application to powder coat, increase productivity, reduce energy consumption, reduce water usage, eliminate phosphates in

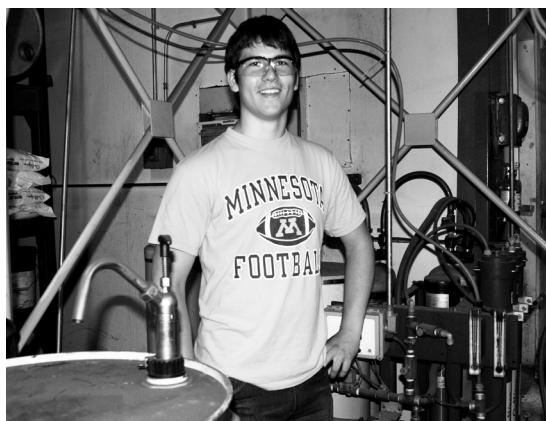
waste stream, and reduce zinc levels in the waste stream. Lou-Rich determined that a MnTAP intern would be a good addition to the team assembled for the new paint line installation.

The intern was assigned the tasks of finding the sources of the zinc in the waste stream, with the plan of reducing zinc in the waste stream of the new paint line. He was also assigned the task of working with the team on the new pre-treatment system and waste treatment.

Identifying Source of Zinc

The intern not only identified the sources of zinc in the facility, but also identified sampling changes that could lead to more consistent and accurate results.

Zinc oxide was found in one of the paints that the facility uses regularly. While the facility was separating the paint residue from the wastewater, it was not 100% effective and some zinc from this paint was found in the effluent. Additionally, some of the paint residue was found in the paint stripper tank. When the tank was changed, the residue and associated zinc would be found in the effluent as well. The intern recommended switching to a non-zinc paint to reduce these occurrences.



The intern at Lou-Rich, Inc. investigated a number of energy and cost saving opportunities in 2009.

Route:

- health and safety
- maintenance
- owner/president
- process engineer
- purchasing

see LOU-RICH page 4

Companies reap benefits from interns' work

Since MnTAP began offering the intern program in 1985, approximately 170 Minnesota companies have participated and reaped a number of benefits from hosting the interns. When asked about their experience with MnTAP interns, company supervisors tend to focus on some common themes. Here, three supervisors weigh in on what their interns provided them.

An Extra Set of Eyes

When asked why a company would invest time, money, and personnel to intern projects, many companies respond that they needed someone to address the project without having to commit current or new staff. The interns are able to work in facilities and focus on projects while not being pulled away to work on day-to-day activities such as production processes.

"We needed someone to focus on one issue and not be pulled in other directions. We also needed someone who had the training, knowledge and contacts to find a solution," said Mike Marturano, safety officer at St. Luke's Hospital in Duluth.

A Qualified, Independent Problem Solver

In addition to being able to devote one person solely to a project, participating companies have noted that their interns have been highly qualified and motivated. Using these traits, then interns have helped companies become better educated and more prepared to make changes in their facilities.

"Our experience with MnTAP interns has shown them to be of a high caliber and able to work independently," said Brad Gehring, energy specialist at Metropolitan Council Environmental Services.

Participating companies also have remarked that the interns are creative, energetic, and anxious to try out what they've learned in the classroom on a real world setting.

"Our intern managed to dig into areas we hadn't even considered and made us more knowledgeable about not just managing our hazardous waste, but rather stop it from entering our facility in the first place," Marturano said.

Valuable Links to MnTAP and Other Resources

MnTAP interns are guided and mentored by MnTAP's staff of engineers and scientists. Additionally, they call upon other technical resources including the University of Minnesota library system, past professors, industry experts, and vendors. All of these links to information help the interns provide companies with thoroughly researched solutions.

"I have supervised two interns and both have been terrific experiences. Karl DeWahl (MnTAP Senior Engineer), who guides the interns, is a strong contributor to this positive experience," Gehring said. "The support MnTAP provides, both technical and administrative, makes the program easy for us to participate in. This program is a win/win for everyone."

A Jump Start on Implementation

Quite often, MnTAP interns are given the opportunity to help companies with implementation while still on the job. This allows them see their solutions in action and leaves a lasting impression on the company and the intern. Following the internship, MnTAP staff members work with companies to continue the interns' momentum towards implementation.

"At this point, we are nearly complete with implementing the project," said Bayard Johnson, plant engineer at 3M Inc. The intern at 3M helped jump start a behavior change program in 2010 to reduce energy use in laboratories.

Positive, Unexpected Impacts on the Facility

While each MnTAP intern has a specific project to focus on, quite often companies have remarked that the interns' impacts on facilities have gone beyond their project.

"Our intern provided a great boost to the project team as well as other employees. He added credibility and a huge momentum to the project and its objectives," Johnson said.

"During her internship, our MnTAP intern was able to really open our eyes into the costs and waste that could be reduced. These were things we hadn't thought about before, but have focused on since the project," Marturano said. ■



Combining a highly qualified intern with a MnTAP advisor and company supervisor is a recipe for success in achieving waste and energy use reduction as well as cost savings.

Internships provide vital hands-on experience

Universities and colleges promote and encourage students to participate in internships to gain experience in their chosen area of study. Such experiences are beneficial to students when they prepare to enter the workforce.

MnTAP internships not only provide hands-on experience in a variety of facilities, but also provide students with the opportunity to manage a project, develop and test ideas, and often see their solutions implemented. When asked about their experiences, past interns credit the MnTAP intern program with providing a variety of opportunities. Past interns weighed in recently on what makes the MnTAP intern program unique.

Encourages Project Management Skills

As companies are chosen to participate in the intern program, MnTAP staff members work with each facility to develop a specific project. Once the intern is on-site, it is his/her job to manage that project from start to finish, with minimal supervision from the company with guidance from MnTAP.

"One of the major highlights of the internship was the ability to really take control of a project and follow it from inception to completion," said Cary Hayner. Hayner worked at Consolidated Precision Products (formerly Hitchcock Industries) in Bloomington in 2008. He is currently a Ph.D. student at Northwestern University in Evanston, Illinois.

"I really enjoyed the fact that during a summer I was able to research and define a problem, develop a solution, and see that solution implemented," said Zachary Zurbey. "It is very rewarding to see projects that I worked on be supported and be successful." Zurbey worked for two summers as a MnTAP intern: one at Johnson Screens in New Brighton and one at Consolidated Precision Products. He is currently a full-time engineer at Consolidated Precision Products.

Allows for Creativity and Independence

MnTAP interns are expected to research their projects and develop solutions in the course of one summer. This requires them to be creative, independent problem solvers. While they are building skills to address one particular problem, the skills are highly transferrable and sought-after by businesses.

"I enjoyed having the independence to push my project in the direction that I wanted. While I did have support from MnTAP, it was ultimately my choice on what to research and investigate on a daily basis. Being the only person on site challenged me to



MnTAP interns are given the opportunity to get hands-on experience and project management skills.

develop new leadership skills and think outside of my normal comfort zone," said Chris Iacono. Iacono was a MnTAP intern in 2009 at Roberts Automatic in Chanhassen. He currently is a measurement and verification specialist with the Weidt Group.

Provides Valuable Networking Opportunities

During their projects, MnTAP interns begin to develop a professional network that often helps with job leads and/or offers. In addition to the company personnel the interns interact with, they also work closely with vendors, energy service providers, and personnel at other facilities.

"A highlight of my internship was the access I had to business connections, which ultimately resulted in employment after graduation," said Kyle Dullinger. While working at McLean Cooling Technology in Champlin in 2007, Dullinger made connections that led to his current position as an R&D engineer with Pentair Filtration Solutions, McLean's parent company.

Preparation for the Future

As with many internships, the MnTAP intern program provides students with an experience that helps prepare them for their future careers. Past interns have attributed their experience in the MnTAP program to their future successes.

"I was so focused on my coursework that I didn't take time to think about what I would be doing after graduation, or what it would feel like to work in the field. The MnTAP internship gave me a new perspective on engineering and guided me to the environmental safety and health field," said Todd Loushine, Ph.D., P.E. In 1992 and 1993 Loushine worked as a MnTAP intern at Avecor Cardiovascular and ABS Cosines, respectively. He is now an assistant professor of occupational and environmental safety and health at the University of Wisconsin – Whitewater. ■

Intern helps company reduce waste and costs

LOU-RICH from page 1

Inconsistencies were also found in sampling methods that may have affected the reported zinc levels in the wastewater. One possible cause of the inconsistencies was where the testing occurred within the effluent system. To maintain consistency in sampling methods, the intern recommended that the facility keep the sampler in one location and clean the sampling pit regularly to avoid the accumulation of solids.

Identifying Energy Efficiency Opportunities

The facility's compressed air system contains three air-cooled rotary screw compressors at 100hp, 75hp, and 50hp. The system had valves installed to shut-off the air supply to unused areas; however, these valves were not being utilized.

Using an ultrasonic leak detector, the intern tested approximately 65% of the compressed air lines and found 33 leaks. He then estimated the energy loss from leaks in the entire compressed air system. Additionally, the intern tested and found leaks in the argon lines. By identifying and fixing leaks of argon, an expensive gas used in welding, the facility conserved over 6,300 pounds of argon and saved \$2,000 annually. A plan was implemented for using the shut-off valves for work areas with no demand and regularly checking for compressed air and argon leaks. Lou-Rich was awarded an OSHA safety grant to train employees and purchase gas leak detection equipment. Fixing the leaks and implementing the plan resulted in annual savings of over 99,000 kWh, over 6,300 pounds of argon, and \$12,600.

Optimizing the Paint Line

The intern also investigated opportunities to optimize the paint line at the facility. These included using reverse osmosis (RO) water for chemical baths, making changes to how wastewater was neutralized, and installing a separate parts washer for certain parts. The facility investigated the opportunities and implemented the recommendations when they purchased and installed the new powder coating system, which helped Lou-Rich save over \$76,000 annually.

Installing the new paint line enabled Lou-Rich to reduce the number of products that required liquid paints. Following customer approval of the parts, Lou-Rich anticipates that the facility will reduce the release of hazardous air pollutants by ten tons and volatile organic compounds by over 20 tons annually. A new non-phosphate conversion coating process was implemented and prevents nearly 700 pounds of phosphorus from going to the city's wastewater treatment plant.

Results and Benefits

As a result of the MnTAP intern project, Lou-Rich implemented recommendations that reduced zinc in the painting operations, increased air compressor efficiency, optimized the paint line, and reduced hazardous waste. The changes reduce almost 25,700 pounds of non-hazardous waste, over 17,500 pounds of hazardous waste, almost 140,000 kWh, over 15,700 therms, and 425,500 gallons of water per year. The company realizes a total annual savings of nearly \$89,000. ■

U.S. EPA Region 5 and the U.S. DOE provides funding for projects

MnTAP was recently notified of funding from the U.S. EPA Region 5 for an energy efficiency project with wastewater treatment plants; additionally, three more projects have been recently approved for funding, but are pending until the final paperwork has been completed. Each project is designed to help reduce waste and/or energy use and save money. Short descriptions of each project including contact information are included in this article.

Energy Efficiency in Wastewater Treatment Processes

Through this project, MnTAP will focus on providing energy efficiency solutions to wastewater treatment plants that have activated sludge processes, which can use a significant amount of energy. During the two-year project, MnTAP will work with treatment plants and partners to conduct ten energy audits, offer a Department of Energy training, coordinate

five demonstrations of efficient systems, and provide answers. For more information on the project including how to participate, contact Karl DeWahl at 612.624.4645 or dewah001@umn.edu.

Pending Projects

MnTAP has been notified of potential funding for three additional projects and is currently waiting on the final paperwork from the funding agencies.

- Reducing blue wrap waste in surgical centers (U.S. EPA Region 5)
- Managing and reducing food waste in event centers (U.S. EPA Region 5)
- Providing energy efficiency solutions to manufacturers (U.S. DOE)

For more information on the pending projects, contact Sarah Haas or Laura Babcock at 612.624.1300 or mntap@umn.edu. ■

Intern program reaches across Minnesota

From Thief River Falls and International Falls in the north to Albert Lea, Preston, and Jackson in the south, MnTAP interns have stretched across Minnesota. In fact, MnTAP interns have worked in facilities in 86 distinct communities; half of those communities are out-state, while the other half are in the Twin Cities Metro Area.

The interns' impact has reached far beyond the walls of their facilities; many of the solutions identified during the projects have been applied to other companies to increase the impact of the program. During the past 26 years, the MnTAP intern program has built a number of statistics and results.

Company Statistics & Results

Well over 150 companies have participated in the MnTAP program in the past 26 years. Interns have worked with companies as small as 12 employees and as large as over 1,000 employees. The average size of a company hosting a MnTAP intern is approximately 150 employees.

Participating companies have proven to be committed to making changes. Through follow-up, MnTAP encourages and supports intern companies to implement recommendations. Typically, 50% of the recommendations are implemented over time. The companies from 2006 have excelled and implemented nearly 80% of the recommended solutions.

Since 2006, MnTAP has been requesting that participating companies contribute a cost-share to further secure their commitment to making changes. Since that time, over \$100,000 has been collected in cost-share; participating companies, however, have cumulatively saved over \$1.5 million.

Could your company benefit from hosting a MnTAP intern?

Do you have a pollution prevention or energy efficiency project that you'd like to tackle, but are pressed for time? Would you like to help a science or engineering student advance their technical skills while providing them with a real-world opportunity to use their classroom knowledge? If so, consider hosting a MnTAP intern. Now's the time to start talking about developing a project and applying for a Summer 2012 intern.

To Qualify

To qualify for the MnTAP intern program, your company must be located in Minnesota, committed to reducing waste or energy use, willing to make operational or procedural

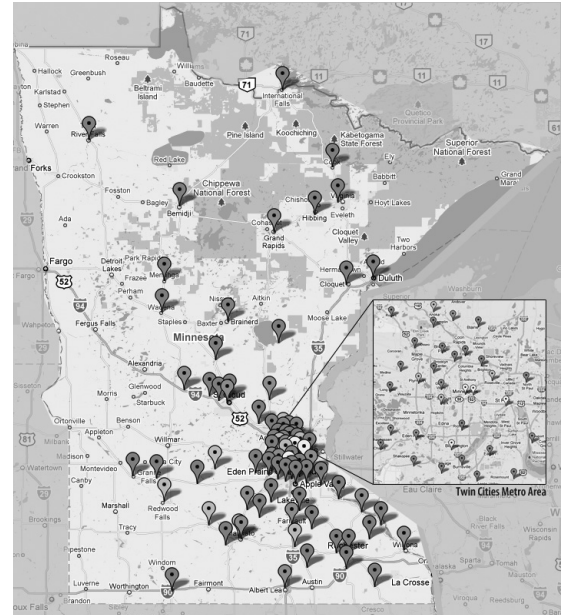
Student Statistics

The MnTAP intern program is also very popular with students. In 2011, over 100 students applied to the program to fill the seven positions available. In total, over 165 students have filled intern positions over the years.

Interns have represented 22 different majors and over 20 universities and colleges. Chemical engineering and mechanical engineering are the most popular majors, and the majority of the interns have studied at the University of Minnesota and the University of Minnesota-Duluth.

Implementation Results

Overall, no matter where a company is located or where their intern has studied, the MnTAP intern projects frequently result in significant solutions, saving money and reducing waste and energy use. Since 1985, companies that have implemented changes recommended by their interns reduced their waste by over 108 million pounds and water use by 107 million gallons, achieving over \$6.4 million in savings. Implemented projects have resulted in energy savings of over 14 million kWh and 600,000 therms. ■



To Apply

Applications are due by February 1, 2012. If you would like to discuss a potential intern project or would like a MnTAP staff member to help you with your application, call MnTAP at 612.624.1300 or 800.247.0015. Additional information is available online at <www.mntap.umn.edu>. ■

Interns will present their findings in August

On August 24, 2011, MnTAP's seven summer interns and one spring intern will present the findings from their pollution prevention and energy efficiency projects. These presentations will be held in the Maroon and Gold Room at the McNamara Alumni Center on the University of Minnesota campus from 1 p.m. to 4 p.m. This session, open to the public, offers the opportunity to learn what pollution prevention and energy efficiency options exist and to ask questions of the interns. The interns presenting have worked on the following projects:

- **August Schell Brewing Company, New Ulm.** The intern is identifying opportunities to recover waste heat from the brewing and pasteurizing processes and to reduce wastewater strength charges.
- **City of Rogers Wastewater Treatment Plant, Rogers.** The intern is identifying energy efficiency opportunities in the wastewater treatment process.
- **Ecolab Engineering Center, Eagan.** As part of his project, the intern is investigating opportunities to reduce energy use in the steam and compressed air systems.
- **Metropolitan Council Environmental Services, St. Paul.** The intern at the wastewater treatment plant spent the spring semester identifying energy efficiency opportunities.

- **Radisson Mall of America, Bloomington.** The intern is evaluating hotel and water park energy use and developing an environmental reduction plan.
- **Salo Manufacturing, Menahga.** To help the facility, the intern is validating the performance of low-styrene, soy-based, or no-styrene resin and gel-coats.
- **Truck Bodies and Equipment International, Lake Crystal.** The intern is identifying the potential to reduce energy use in painting, curing, ventilation, and dust collecting processes, as well as in compressed air systems.
- **Uponor, Inc., Apple Valley.** At this manufacturing facility, the intern is investigating opportunities to reduce energy use in various processes and throughout the facility.

The MnTAP intern program pairs facilities with a college student who researches and recommends energy efficiency and pollution prevention solutions. Since the program's inception in 1985, MnTAP interns have helped identify opportunities that are saving participating companies over \$6.2 million annually.

For more information on the intern program or the presentation event on August 24, 2011, contact MnTAP at mntap@umn.edu or 612.624.1300. ■

Intern projects educate and positively impact MnTAP staff members

MnTAP staff members devote significant hours to the intern program each year. In the summer, staff guide, mentor, and assist the interns; during the spring, fall, and winter, staff work closely with companies to develop future projects and follow-up on the implementation status of past projects.

Mick Jost, project coordinator at MnTAP, has advised more than ten students over the years. He has found that working with the students has taught him more about his industry-focus area of metal casting and provided him with a broader appreciation and understanding of manufacturing processes. "Advising interns has given me the opportunity to learn more about a facility in-depth by relying upon their knowledge and experiences," Jost said.

A recent intern whom Jost advised investigated a solution that can be applied to other similar facilities, which is one of MnTAP's goals for the intern program. "This intern put together well-developed and creative energy efficient motor frequency solutions that I can easily see suggesting to other facilities within my industry," Jost said. "That was a big reward for me and the intern's results."

Jost and other MnTAP staff members have found that advising the interns is not only educational, but also rewarding. "The students, in general, are mature, smart individuals. Sometimes they need a little guidance and prompting, but their end results are well-developed solutions that help the companies save money," Jost said.

Interactions with companies and corresponding utilities also benefits MnTAP staff members. "I always look forward to the continued interaction with companies that have hosted interns," Jost said. "It sometimes allows me to expand my role and work on other projects they need assistance with. Additionally, the utility companies that participate in the program have been helpful and make a real difference to the projects."

While MnTAP staff may spend up to eight hours or more each week advising their interns, they feel it is well worth the investment. The benefits the advisors see from mentoring young engineers and scientists as well as working closely with the facility make the intern program a highlight of many staff members' jobs. ■



Materials Exchange

The Minnesota Materials Exchange program lists one company's unwanted material and makes it available for use

by another company. For more information, call MnTAP at 612.624.1300 or 800.247.0015.

Follow @MN_Exchange on Twitter

The Materials Exchange program is posting daily featured listings on Twitter! Follow @MN_Exchange for Tweets to find items that may be useful to you.

Visit <http://twitter.com/MN_Exchange> to follow the Materials Exchange and view listings.

Coming Soon: New and Improved System



The Materials Exchange program and web-based system is being overhauled. The new system will be available this fall and will have a number of new features to help you facilitate your exchange of surplus or unwanted materials. In

the meantime, there may be periods of time that the current system is not working or has limited access. Please bear with us while we make changes to improve the system and make exchanging items even easier. We will be sending out more information via email over the next few months on how to use the new system. All existing accounts and listings will be transferred to the new system; however, you will need to confirm your account. Please contact mnexchange@umn.edu with any questions. ■

Reuse Alliance comes to Minnesota

Reuse Alliance MN is a state chapter of Reuse Alliance, a national nonprofit organization dedicated to promoting, connecting and supporting reuse initiatives and organizations around the country. Reuse Alliance envisions a world where people are actively engaged in the reuse movement; and as a result, have created a cleaner environment and a greener economy for their communities.

Reuse Alliance acts as a conduit building relationships between individuals and organizations interested in reuse. Reuse Alliance promotes reuse by communicating the triple bottom line, environmental, economic, and social, benefits of reuse. The

Alliance supports reuse by developing resources that increase public awareness and access to reuse sector services.

The Minnesota chapter of Reuse Alliance has been selected to work on a specific project, Measure Your Treasure, in partnership with the Minnesota Pollution Control Agency and the Institute for Local Self Reliance. This work will synthesize what impact data reuse organizations are currently measuring, or have the potential to measure (e.g. tons diverted from landfill, number of families assisted). From this basic data, we will be able to highlight the triple bottom line benefits of reuse. For example, if you incinerate 10,000 tons of materials you create one job; if you landfill it, you create six jobs; if you recycle it, you create 36 jobs; and if you reuse it, you create between 28 and 296 jobs (ILSR).

What does it mean to be a member?

As a team, Reuse Alliance members work together on research projects, share knowledge, and build ideas to expand the reuse sector in the state. Current members range from online reuse programs to for-profit thrift stores to creative reuse operations and building materials reuse centers.

Reuse Alliance MN has just begun work toward their goal of promoting, connecting, and supporting reuse initiatives across Minnesota. If you are interesting in joining the discussion, please contact Arielle Courtney, Chapter Coordinator, at arielle@reusealliance.org. ■

Workshop to focus on internal teams

On September 13, Dakota Valley Recycling, the shared municipal recycling department for the Cities of Burnsville, Eagan and Apple Valley, will be hosting a free workshop for businesses in the three cities that are looking for ways to reduce waste and energy use. The workshop will focus on internal green initiatives and staff green teams and will feature business leaders who have implemented energy- and waste-reducing initiatives through their employee green teams. Additionally, utility representatives and sustainability experts will be available to discuss the programs and assistance they offer for your organization.

Green Business Workshop

Tuesday, September 13, 2011, from 8:30 a.m. to 10:30 a.m.
Eagan Community Center, 1501 Central Parkway

Registration is open online; go to <www.DakotaValleyRecycling.org/ARROW> for more information and the online registration form. ■

Minnesota Technical Assistance Program

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MINNESOTA TECHNICAL ASSISTANCE PROGRAM

UNIVERSITY OF MINNESOTA

The Minnesota Technical Assistance Program (MnTAP) helps businesses and industries develop and implement industry-tailored solutions that maximize resource efficiency, prevent pollution and reduce costs and energy use to improve public health and the environment. As an outreach program at the University of Minnesota, MnTAP provides free technical assistance tailored to individual businesses. By reducing waste and increasing efficiency, companies save on disposal and raw-material costs and make working conditions healthier and safer for employees.

MnTAP is funded primarily by the Minnesota Pollution Control Agency's Prevention and Assistance Division and is located at the University of Minnesota in the School of Public Health, Division of Environmental Health Sciences. The University's mission, carried out on multiple campuses and throughout the state, is threefold: research and discovery, teaching and learning, and outreach and public service.

The University of Minnesota shall provide equal access to and opportunity in its programs, facilities, and employment without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression.



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Calendar

July 26-29 2011. **Minnesota Wastewater Operators Association 35th Annual Conference.** Timberlake Lodge Hotel in Grand Rapids, Minnesota. This conference will feature sessions about biosolids, collection systems, wastewater treatment, and operations and maintenance, and will feature vendor exhibits. Sixteen wastewater hours are available as are wastewater exams. For more information, visit www.mwoa.net/.

August 24, 2011. **MnTAP Intern Presentations.** 1:00 p.m. - 4:00 p.m. Maroon and Gold Room in the McNamara Alumni Center at the University of Minnesota in Minneapolis, Minnesota. Join MnTAP to hear the results of the 2011 intern projects. Students will speak about their experiences and pollution prevention and energy efficiency recommendations. RSVP to MnTAP at mntap@umn.edu or 612.624.1300.

September 15, 2011. **Hennepin County Hazardous Waste Training Class.** 9:00 a.m. - 3:30 p.m. Ridgedale Public Library, Minnetonka, Minnesota. Hennepin County offers free hazardous waste training classes throughout the year for hazardous waste generators of all sizes. The training is designed to give a general overview of the hazardous waste regulations. To register, call 612.348.3777.

September 15, 2011. **Webinar: How P2 Assistance Providers Can Effectively Use Social Media.** 1:00 p.m. - 2:30 p.m. The purpose of this webinar is to show how the use of social media and web 2.0 technologies can bring value to pollution prevention and assistance programs. Sponsored by the Northeast Waste Management Officials' Association (NEWMOA). Reserve your Webinar seat now at: <https://www1.gotomeeting.com/register/147024672>. For more information, contact Rachel Smith at 617.367.8558 x 304.

For more information, visit MnTAP's online calendar at mntap.umn.edu/resources/cal.htm.

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