



Illinois
Environmental Protection Agency



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Office of Pollution Prevention

- The mission of the Office of Pollution Prevention (OPP) is to promote pollution prevention (P2) as the preferred strategy for environmental protection. Reducing or eliminating pollution at the source is preferable to treating or managing it after the fact. P2 not only can help businesses and others achieve better environmental protection, but it can also help them save money, improve efficiency and ease regulatory concerns.
- Website: <http://www.epa.state.il.us/p2/>



Office of Pollution Prevention

**The Office of Pollution Prevention
conducts...**

- **Educational Outreach**
- **Technical Assistance**

And coordinates the...

- **Pollution Prevention (P2) Internship
Program - Now includes P2 and E2**



P2 Internship Program

- Each year, Illinois EPA's Office of Pollution Prevention recruits upper-level university students to work on pollution prevention (P2) projects during the summer. While students have been placed primarily at manufacturing facilities, they have also worked at small business development centers, trade associations, local government facilities, environmental groups and military installations.
- The purpose of the program is to help facilities identify, research and pilot P2 technologies and practices.



Pollution Prevention Internship Program

In 1988...

The Illinois Chamber of Commerce made initial request to the IEPA for assistance.

In 1989...

The Agency responded by placing two interns at two separate electroplating facilities in Chicago.



P2 Internship Program

In 1989, there were 2 interns...

In 1997, 27

In 2006, 20

In 2007, 15

In 2008, 17



SALARY

The salary is under consideration for being increased. Presently we are paying:

Undergrads - \$2,100/month and w/relocation + \$400/month

Grad. Students - \$2,300 / month and w/relocation + \$400/month



Salaries are paid by...

First requests..... IEPA 100%

SecondCompany 50% : IEPA 50%

ThirdCompany 75% : IEPA 25%

Fourth, on.....Company 100% : IEPA 0%



Participating Schools

- **IIT, Chicago**
- **U of I, Chicago**
- **U of I, Urbana-Champaign**
- **Bradley, Peoria**
- **SIU, Carbondale**
- **SIU, Edwardsville**
- **Northern Illinois University, DeKalb**
- **Northwestern University, Evanston**



Time Frames for the Summer of 2009

October 24th, 2008

- Student applications due
- On-campus interviews will be conducted by the end of Fall Semester

December 1st, 2008

- Company applications due along with a P2/E2 project or both

January 15th through May 15th

- Student selection; notify companies
- Conduct site visits
- Establish contracts for payment to students



Time Frames (Continued)

May 18th – May 22nd (week prior to Memorial Day)

- Training is conducted

May 26th (the day after Memorial Day)

- Intern starts working at the host company

August 10th

- Last day of the Internship



Actual Internships

One (1) week of training
+ Eleven (11) weeks at facility

Total = Twelve (12) weeks



P2 Intern Training

Pollution Prevention topics include:

- What is P2 ? Process Efficiency ?
- Process Mapping
- Waste Auditing
- P2 Internship 101
- Intern ethics and requirements
- General safety guidelines



P2 Intern Training

Energy Efficiency topics include:

- Energy auditing
- Lighting
- Air Compressor systems
- Boilers, steam traps, condensate
- Motors, VFDs
- HVAC, refrigeration, chillers



P2 Intern Training

Training includes a...

- Facility on-site waste and energy audit at a nearby facility
- Brainstorming session on recommendations for that specific facility

Training concludes with...

- Each intern making presentations on the specifics of his/her project



P2 Internship Resources

Instruments available to interns...

- Ultrasonic leak detector (2)
- Thermal imaging gun
- I/R temperature guns
- Lumen meters
- Windvane anemometer
- Ballast checker, Sylvania flicker checker
- Fluke clamp-on power meter

Instruments that we may purchase...

- Data Loggers



IEPA Responsibilities include.....

- **Recruiting and training students**
- **Attending initial on-site visit with student**
- **Establishing contracts**
- **Researching project beforehand**



Intern Responsibilities include.....

- **Attending Training**
- **Working normal hours at facility**
- **Submitting semiweekly progress reports**
- **Writing a final written report**
- **Attending final presentations**



Company Responsibilities include providing

- **Workers compensation insurance coverage for student while on-site**
- **An on-site assigned supervisor**
- **Facility specific safety training**
- **Any miscellaneous expenses**



Company Benefits Include:

- **Fresh perspective with focus on a specific P2 or E2 project**
- **Low cost resource**
- **Reduced releases & liabilities**
- **\$\$\$ Savings \$\$\$, reduced overhead costs**
- **Greenhouse gas emission reduction**



Intern Success Stories

Mattoon Precision Manufacturing Inc.

- **Mattoon Precision Manufacturing (MPMI)** is a high precision machining plant that produces brake rotors, lower control arms, damper forks, spindles, exhaust flanges and other products for automotive industry. MPMI was founded in 1989 and currently employs 140 employees.
- The intern project focused on opportunities to minimize waste and increase energy efficiency.



Intern Success Stories

The intern made the following recommendations:

- **Establish a program to repair compressed air leaks. This project would save over \$1,200 annually.**
- **Recommended that the inlet air for the air compressor come from the outside during the cooler months of the year. This project could save over \$500 per year.**
- **Replace a trim compressor with a smaller unit capable of efficient partial loading. This project could save \$9,600 a year, with a payback period of 2.9 years.**
- **Switch four production lines from a semi-synthetic coolant to a cheaper, longer-lasting full synthetic coolant. This project could save \$2,400 a year, with a payback period of seven months.**



Intern Success Stories

Mueller Company, Decatur, Illinois

- **Mueller Co. was founded in 1857 and has been at its current location in Decatur since 1895. The Decatur facility produces brass parts for the company's water products division. These parts include valves, pipe tapping machines and pipe repair kits.**
- **The intern focused on the facility's lighting and steam production system.**



Intern Success Stories

The intern made the following recommendations:

- **De-lamp lighting fixtures and replace T12 lamp fixtures with T5 fixtures with electronic ballasts. This project has the potential to save \$26,000 a year. With a utility rebate, the project would have a 2-year payback.**
- **Evaluated the facility's boiler system, which consists of two boilers. The newer boiler is rated at 700 boiler horsepower (bhp) and the other backup boiler is rated at 600 bhp. The steam load is separated into the summer load and the winter load.**
 - **The summer load consists of three pieces of equipment including a 5,000 gallon heated hot water heater, a parts washer, and a water evaporator. The equipment is used all year with only 6.3% of the boiler's capacity being utilized. It was determined that a 100-gallon natural gas hot water heater should replace the old one. Two electric on demand hot water heaters should be used to retrofit the parts washer, and a new evaporator should be purchased to replace the old one. These projects have the potential to save \$52,000 a year, with a payback of 2.2 years.**
 - **During the winter season, only 31% of the capacity of the boiler is used. Two new 90 bhp boilers should be purchased, which has the potential to save over \$106,000 per year, with a payback of 1.5 years.**



P2 Internship Program

COORDINATOR

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How do I apply?

The application form to host a student is posted year-round. The Website is :
www.epa.state.il.us/p2/internships