



# Florida American Industrial Hygiene Association

## 2005 – 2006 OFFICERS

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## President's Message

Throughout our lives we have numerous opportunities. Opportunities to choose our friends. Opportunities to decide our profession. Opportunities to change our lives. Today we have numerous opportunities. Are we going to give aid to individuals suffering in Louisiana, Mississippi, Texas and Florida? Having just recovered from the effects of the 2004 storms we, more than most, can relate to the hardships our neighbors are enduring. Let us not miss this opportunity to give back to those who helped us and now need our support. Opportunities also exist to support your profession. The AIHA Foundation has the ability to protect and foster the ideals of a better and safer world. By providing scholarships for students going into our profession, we will be able to maintain trained and knowledgeable professionals. Give to the Foundation – any amount will assist in assuring the future of the profession. Let us not look back years from now and say “I had the opportunity and let it slip away”. Giving has many benefits. First it helps those in need, Second it helps our society and third it helps us by making us feel good. Why are we industrial hygienists? Basically we help people. We try and prevent illness and promote well being. There is no better way than to give to those in need. I pray that in the future we had not missed this important opportunity. Give to those in need and to secure the future for our profession.

## Flow Calibration by David J. Silver, CIH

Reducing uncertainty of the exposure measurement data we generate in the field is paramount to providing accurate results to our clients. Unfortunately, many industrial hygienists take flow calibration for granted.

Instruments requiring accurate flow calibration are air sampling pumps, field calibrators, rotometers, particle counters and direct reading gas instrument. These instruments require continuous calibration. Mechanical parts and environmental conditions are often unstable and cause a deviation from the observed airflow and true airflow.

Typical field instrumentation for calibrating air samplers includes manual soap bubble meters, electronic soap bubble meters, dry piston meters, wet test meters, orifices and precision rotometers. Accuracy of these meters range from 0.5-5 percent. When applying confidence limits to laboratory results or direct read measurements, the accuracy of the volume intake relies on accurate calibration of the field calibrator.

The National Institute of Standards Technology (NIST) is the primary calibration laboratory for the U.S.. NIST is one of the nation's oldest and largest science and technology laboratories. The U.S. Congress created NIST about 100 years ago when there were as many as eight different "standard" gallons and 4 different "standard" one foot lengths.

NIST creates and maintains all the U.S. primary standards. Primary standards are the standard that all other "standards" are measured against. These standards include length, time, temperature, light intensity, pressure, volume, hardness, particle size, flow rates, radiation, electric current, angles, chemical amounts, and magnetic forces.

NIST Provides calibration services for gas flow meters using three pressure, volume, temperature, and time (PVTt) systems with collection tanks of 34 L, 677 L, and 26 m<sup>3</sup>; and a Working Gas Flow Standard (WGFS). The three

PVTt standards cover flow ranges of (1) 1 L/min to 100 L/min, (2) 10 L/min to 2000 L/min, and (3) 900 L/min to 78,000 L/min respectively. The uncertainty of the 34 L and 677 L PVTt standards is between 0.02% and 0.05%, depending on the gas and flow that is tested. The 26 m<sup>3</sup> standard uses dry air and has a flow uncertainty of 0.13%. The expense of this equipment is such that it is usually only available in national standards laboratories. Equipment calibrated directly by NIST costs several thousand dollars per instrument and NIST calibrations are typically directed towards primary metrology laboratories.

Many primary laboratories maintain a variety of primary flow devices that include a bell prover, piston prover and sonic flow standards. Japan and Hungary maintain wet test meters as their primary flow device.

The bell prover consists of a hollow, inverted, metal cylinder suspended over a bath containing a light oil. The air volume in the cylinder above the oil is connected via a tube and valve to the flowmeter being calibrated. Air flow through the meter is created by allowing the cylinder to fall downwards into the bath, thus displacing the air contained within it. The flow rate is measured by timing the rate of fall of the cylinder.

Piston provers are designed especially for calibrating flowmeters or other flow devices with inert gases. The calibrating range of these precision gas collecting devices is from 1 to approximately 24,000 ml/min., depending on sample collection time. Accurate collection of the volume of gas is made by a piston which moves in a precision bore, borosilicate glass cylinder combined with photo-electric switches. The seal between the piston and the cylinder is formed by a mercury o-ring which allows for frictionless movement of the piston. The flow calibration laboratory at CIH Equipment Company maintains a Brooks volumetric piston calibrator with an uncertainty of 0.20%.



Critical flow nozzles, also called sonic chokes, have been used to maintain stable gas flow rates in systems where maintaining stable, accurate gas flow rates is essential to overall system performance. By establishing a shock wave in the venturi, the sonic choke establishes fixed flow rates unaffected by pressure or any fluctuations, surges, or changes in downstream pressure. With no moving parts, sonic chokes provide the simplest and most reliable way to regulate gas flows. This is particularly true when high pressure, high temperature, cryogenic, explosive, or high purity gasses need to be regulated.

Wet-test gas meters function upon the principle of positive displacement. The sample gas stream rotates a measuring drum within a packing fluid, usually water or low viscous "white" (clear) oil. A needle-dial and counting mechanism, coupled to the rotating drum, records the volume of gas flow as it sequentially fills and empties from the drum's rigid, fixed volume measuring chambers. Some manufacturers claim that an uncertainty of 0.2% can be reached.

## Our Role in Disasters

As industrial hygienists, we have a duty to provide our expertise on matters that concern public and occupational safety. Manmade and natural disasters occur frequently. Hurricanes, tsunamis, flooding and terrorist bombings have created biological hazards, chemical releases and environmental conditions promoting disease. Disaster mitigation involves first responders, incident commanders, volunteers, firefighters, public safety officials and contract workers, many of whom do not have the knowledge or equipment to adequately protect themselves or the public.

Traditionally, industrial hygienists have focused on workplace safety. We have applied our basic recognition, evaluation and control techniques to reduce chemical and physical stressors to workers so

that they may comfortably toil in industry and manufacturing. Through the years, we have accumulated knowledge in toxicology, airborne hazards, radiation, measurement and controls. We have assisted with the World Trade Center disaster of 911, FEMA projects and other disasters.

The services we can provide include disaster worker protection, recommendation of measurement equipment at security zones, recognition of health effects in disasters, prioritizing hazards, tracking worker exposures, recommend safe work practices, engineering controls, advise on personal protective equipment and provide worker training.

Making us available when a disaster hits is not just a service, it is a duty.



## Hispanic Workers in the United States: Employment Distributions, Fatal Occupational Injuries, and Non-fatal Occupational Injuries and Illnesses

Scott Richardson, John Ruser, Peggy Suarez, Bureau of Labor Statistics

Who do you see cutting lawns, installing wallboard, erecting roofs and providing manual labor in your Florida town?

The United States Census Bureau predicts that by the year 2050 Hispanics will represent one out of every four persons in the United States, up from about one in eight in 2000.

The results from the 2000 Census of Fatal Occupational Injuries (CFOI) program show higher fatal work injury rates for Hispanic workers than for other racial/ethnic groups—rates that appear to be increasing even as fatal work injury rates for most other United States workers are declining. Non-fatal occupational injury and illness rates are also higher among Hispanic workers.

Employment distributions tell us that Hispanic workers tend to be more heavily represented in

higher-risk industries and occupations than non-Hispanic whites and other racial/ethnic groups. The question becomes to what extent are these higher fatality rates explained by this disproportionate representation of Hispanics in higher-risk industries and occupations. Also, what differences can be seen between the experience of foreign-born Hispanic workers and native-born workers in the occupational injury and illness data?

National data also tell us that the challenges in occupational safety and health are not limited to those states traditionally associated with large Hispanic populations, such as California or Texas but will impact numerous other states not traditionally known for large Hispanic

populations. Hispanic communities are growing rapidly in states such as North Carolina, Arkansas, and Georgia. Moreover, the nature of the occupational injuries and illnesses differs from State-to-State and is largely determined by the industries within each state.



# Upcoming FLAIHA Meetings

Spring Conference at the Embassy Suites, Tampa Florida; Thursday, March 23 and Friday, March 24, 2006.

3705 Spectrum Blvd, Tampa, Florida, 33612-9412  
Tel: +1-813-977-7066 Fax: +1-813-977-7933

## Professional Development Courses

**Title:** TBA

The Program will be finalized soon with a special e-mail sent to everyone. For more information please contact :

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4545 James Road  
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(321) 631-5739

[Karen.terry@universolorlando.com](mailto:Karen.terry@universolorlando.com)

## Conference Agenda for Friday, March 24, 2006

7:30 am - 8:00 am

7:30 am - 8:00 am

8:00 am - 8:05 am

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8:05 am - 9:00 am

9:00 am - 9:55 am

9:55 am - 10:35 am

10:35 am - 11:30 am

11:30 am - 11:45 am

11:45 am - 1:15 pm

1:15 pm - 1:45 pm

1:45 pm - 2:40 pm

2:40 pm - 3:35 pm

3:35 pm - 4:05 pm

4:05 pm - 5:00 pm

5:00 pm - 5:05 pm

### Registration and Continental Breakfast

#### Vendor Displays

#### Welcome

Allan Schreiber, CIH – President, Hygeia Health Safety Services, Inc.

President, AIHA – Florida Section

**TBA**

**TBA**

#### Break and Vendor Displays

**TBA**

**TBA**

#### Luncheon and Business Meeting

#### Vendor Displays

**TBA**

**TBA**

#### Break

**TBA**

#### Closing Remarks

Sherri Nickell

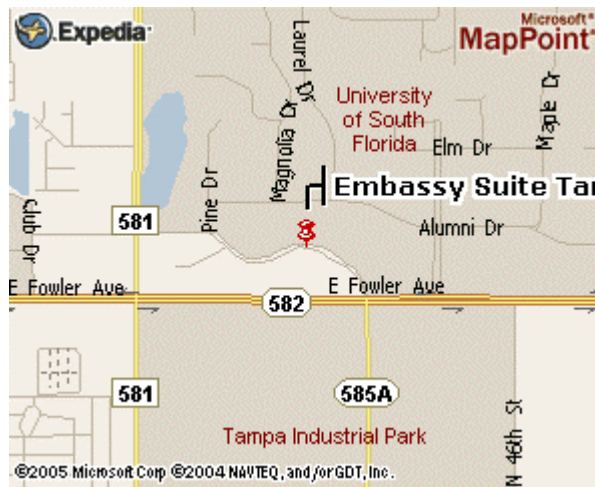
President-Elect, AIHA – Florida Section

The Program will be finalized soon with a special e-mail sent to everyone. For more information please contact :

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## Embassy Suites Hotel Tampa-USF/Near Busch Gardens

3705 Spectrum Blvd, Tampa, Florida, United States 33612-9412  
Tel: +1-813-977-7066 Fax: +1-813-977-7933



### Directions to Embassy Suites Hotel

From I-275 traveling north (from Tampa International Airport) or traveling south, exit on number 51 (old exit 34) Fowler Ave. Travel east 2 miles. Hotel is on the left after the intersection of Fowler and 30th street. From I-75 traveling north (from Sarasota/Ft. Myers/Naples) or traveling south (from Gainesville/Ocala) to exit 265 (old exit 54) Fowler Ave. Travel west 4 miles. Hotel is on the right after the main entrance to University of South Florida. From Orlando take I-4 West to I-75 North and exit 265 (old exit 54) Fowler Avenue and follow directions above.

## WHAT WOULD YOU DO?

### NIMBY – “Not in my backyard”

#### STAUFFER CHEMICAL COMPANY/TARPON SPRINGS

The Tarpon Springs Stauffer Chemical Company cleanup site has been in litigation for several decades now and is yet to be fully mitigated. The Stauffer Chemical Co. (Tarpon Springs Plant) site is located northwest of the city of Tarpon Springs, Pinellas County, Florida. The site is in a mixed residential/light industrial area along the Anclote River.

Elemental phosphorus was extracted from phosphate ore at the plant from 1947 to 1981.

Soil, sediment, groundwater and surface water are contaminated. When the plant was in operation there was community concern about noxious fumes coming from the site. The community is currently concerned about airborne dust transporting contaminants from the site. Contaminants of concern at the site are antimony, arsenic, beryllium, boron, cadmium, chromium, fluoride, lead, thallium, vanadium, radon, radium and sulfur dioxide.

Residents near the site are concerned that contaminants may have caused brain cancer, lung cancer or emphysema. Four of the contaminants of concern--arsenic, beryllium, cadmium and chromium--are known or suspected lung carcinogens. None of the contaminants of concern is known to cause brain cancer. Workers on the site and residents within about one-half mile may have been exposed to sulfur dioxide and phosphorus pentoxide from the plant while it was operating. However, we do not have any information to estimate the health risk from exposure to the sulfur dioxide and phosphorus pentoxide.

The 160-acre facility was operated by Victor Chemical Works from 1947 to 1960 when it was purchased by Stauffer Chemical Co. Stauffer operated the plant until it closed in 1981 (NUS Corp. 1989, 1991). The facility's ownership has changed several times since then and is currently the Stauffer Management Co., a subsidiary of Zeneca, Inc. (formerly ICI Americas) (McNeice 1993).

Residents of Tarpon Springs, which borders the site, have expressed a number of health concerns. Public meetings and interviews have been very emotional as these community members have expressed their outrage.

1. Can contaminants from the site cause brain cancer in people living close to the site?
2. Are contaminants leaching into the groundwater from the site and entering nearby private and public wells?
3. Were radioactive materials produced when the plant was operating and do they continue to contaminate the site?
4. Can dust blowing from the site carry contamination into the community or the nearby river?
5. Have children at the elementary school north of the site been exposed to contamination from the site?
6. When the plant was in operation, people living near the plant or using the river frequently reported being exposed to clouds of white fumes which produced respiratory distress. What other adverse health effects could occur from this exposure?
7. What has happened to the 900 drums of calcined phosphate sand buried on the site and what hazard do they represent?
8. Can exposure to contaminants in the air produce emphysema or lung cancer in workers at the plant?

How would you handle the public during meetings setup by Zeneca and the EPA so that the public could express their concerns? In other words, what would you do?

# Job Opportunities

## Florida State University

**Posting Title:** Senior Environmental Health & Safety Specialist

**Department:** Environmental Health & Safety

**Location:** Mendenhall A - 0124

**Pay Grade** USPS 25

**Job Requisition/Reference #:** 3435

**Salary Range:** Anticipate hiring at or near the minimum of the pay range. Minimum = \$28,463.00

Bachelor's degree in industrial hygiene, occupational health and safety or directly related science field, engineering, environmental or public health discipline and two years of progressively responsible relevant experience; a high school diploma and six years of progressively responsible relevant experience; or an equivalent combination of relevant education and experience. Appropriate directly related experience can be substituted for the degree requirement.

Candidate should possess a working knowledge of OSHA regulations and be able to assist with inspections and investigations for compliance. Have ability to prepare written reports outlining deficiencies and recommendations for their resolution. Skill in working with diverse groups, faculty/staff/tradesmen to help incorporate safe work practices into standard operating procedures. Experience with workplace health & safety training preferred. State of Florida Class E driver's license required (please put number on application). This position requires a police background check. Post employment and annual medical exams required. Must be able to move about freely and carry up to 50 pounds; must be able to wear respiratory protection and use ladders.

**Schedule:** 40 hours per week. Some overtime possible.

### **Responsibilities:**

This position participates in the campus wide industrial hygiene program to ensure the safety and health of the students, faculty and staff. It will involve health and safety inspections, monitoring, report generation for general industrial hygiene and safety, ergonomics, accident prevention, indoor air quality, and incident/exposures. Uses industrial hygiene survey instrumentation for environmental monitoring. Provides oversight of necessary corrective activities. Responds to emergency situations involving hazardous materials or conditions. Assist with the development of training programs. Conducts health and safety training.

How to Apply: If qualified and interested, apply to Florida State University at <https://jobs.fsu.edu>

## Certified Industrial Hygienist

Tentative Start Date: January 13, 2006

An Equal Opportunity/Access/Affirmative Action Employer

Personable and motivated mid-level (6 to 10 years) Certified Industrial Hygienist (CIH) is needed to lead the occupational health and safety practice within our growing Tampa environmental services division. Because of SCS Engineers' reputation for providing quality services, our existing client base is asking SCS Engineers to provide increased industrial hygiene and safety services. This position is an opportunity to quickly build a successful industrial hygiene and safety practice, help our existing clients solve their occupational health and safety problems, and help SCS Engineers expand its reputation and client base in central Florida. Qualified candidates will have an engineering or science bachelors degree, or a masters in an industrial hygiene-related discipline; will be able to demonstrate outstanding written communication skills; and show varied industrial hygiene and safety project experience. Preferred candidates will have strong project management experience and business development skills. This position calls for approximately 10% to 15% travel depending on the support requirements of our national clients. Salary is negotiable and will be based on qualifications and experience. SCS Engineers is an employee-owned company with profit sharing (distributions based on office and personal success), 401K, and medical benefits. Send resume to: Mark Tumlin, SCS Engineers, 3012 US Highway 301 North, Suite 700, Tampa, FL 33619 or email to: [mtumlin@scsengineers.com](mailto:mtumlin@scsengineers.com)

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Striving for Excellence

FLAIHA Newsletter

The FLAIHA is a non-profit organization dedicated to the enrichment and success of it's members.

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**AIHA EMLAP # 102977**



*50 New Members by  
2006*

## FLORIDA AIHA WEBSITE

<http://www.aiha.org/LocalSections/html/florida/florida.htm>

We now have a website

