

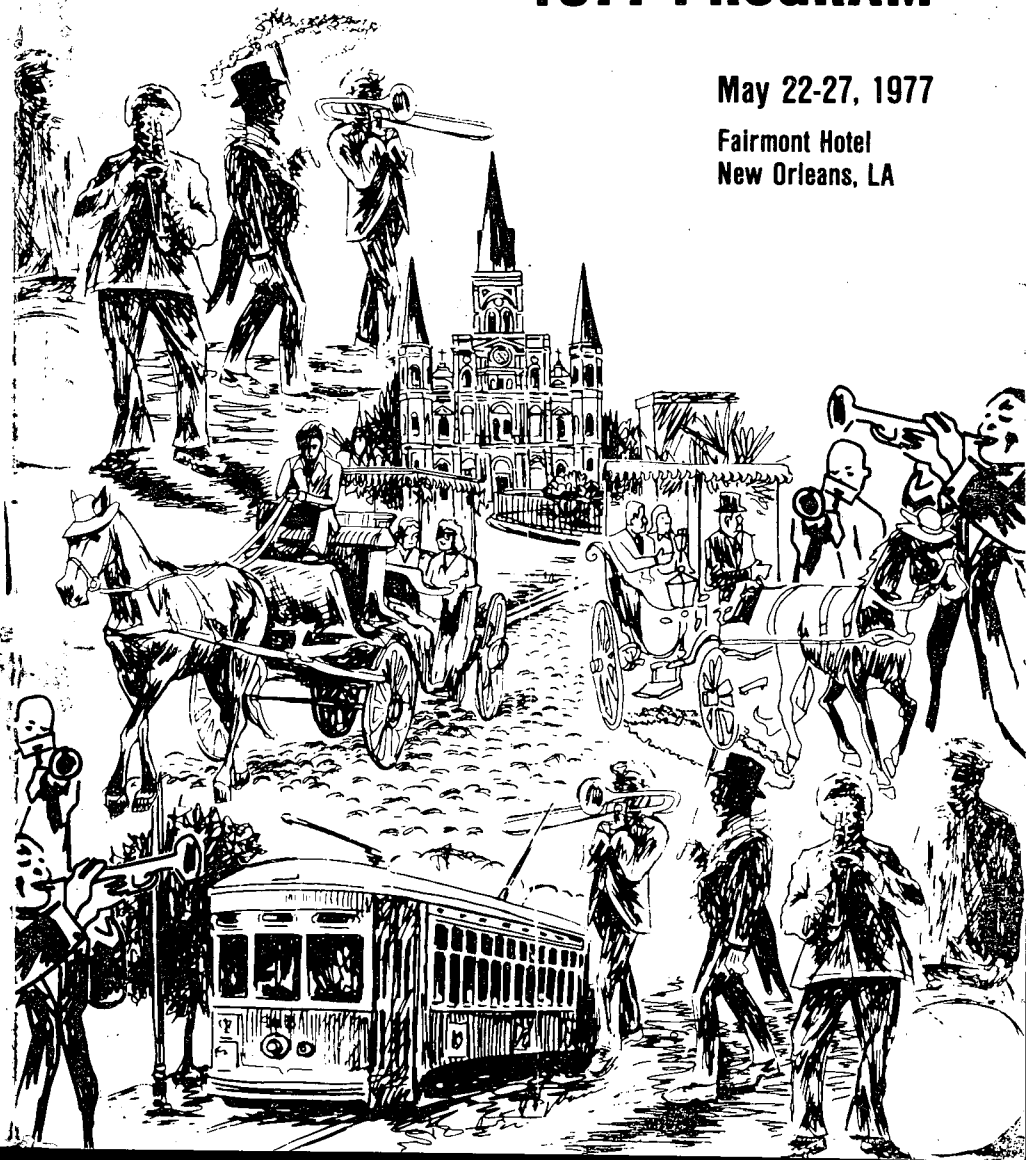
*Glaser*

# AMERICAN INDUSTRIAL HYGIENE CONFERENCE

## 1977 PROGRAM

May 22-27, 1977

Fairmont Hotel  
New Orleans, LA



**AIHA Business Meeting**  
**Wednesday - May 25**  
**10:30 — 12:00**  
**International Ballroom**

**ACGIH Business Meeting**  
**Tuesday - May 24**  
**10:30 — 12:00**  
**International Ballroom**

## AMERICAN INDUSTRIAL HYGIENE CONFERENCE

Fairmont Hotel — New Orleans, LA

May 22-27, 1977

The American Industrial Hygiene Association and American Conference of Governmental Industrial Hygienists again present the American Industrial Hygiene Conference — the Seventeenth. We cordially invite your attendance.

### CONFERENCE REGISTRATION

	AIHA or ACGIH Member*	Non- Member
Full Week — (Includes Banquet Ticket) .....	\$53	\$78
Per day — (No Banquet Ticket) .....	\$11	\$16
Extra Banquet Ticket .....	\$18	\$18
Spouse Registration .....	\$ 5	\$ 5

### HOTEL ACCOMMODATIONS

Fairmont Hotel will be Conference headquarters. Additional guest rooms as needed will be available at three other closely adjacent hotels. All hotels with their guaranteed rates are listed below.

	Single	Double	Twin
Fairmont Hotel .....	\$26-34	\$36-44	\$36-44
Downtown Howard Johnson's .....	28-33	36-38	33-36
International .....	26-34	36-44	36-44
LePavillon .....	24-34	36-44	44

\*SPECIAL RATE FOR NATIONAL MEMBERS OF ACGIH OR AIHA. THESE RATES ALSO APPLY TO REPRESENTATIVES OF AIHA SUSTAINING MEMBER ORGANIZATIONS.

### EMPLOYMENT SERVICE

The AIHA Employment Service will be located in the Tulane/Loyola Rooms, and again will be under the direction of Marshall LaNier. Also a desk in the Conference Registration area will be available all day Monday, May 23 for obtaining forms and information.

### OPEN FORUM — 8:30 P.M., TUESDAY GRAND BALLROOM

JOHN MARTONIK, USDOL/OSHA, WASHINGTON, D.C., WILL LEAD AN INFORMAL DISCUSSION ON "GUIDELINES FOR ABATEMENT PLANS — SUGGESTED APPROACH AND SOLICITATION IDEAS". COME TO THIS IMPORTANT MEETING PREPARED TO NOT ONLY LISTEN BUT COMMENT.

## **1976-77 OFFICERS AND DIRECTORS**

### **AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS**

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## 1977 CONFERENCE COMMITTEES

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### REFRESHER COURSES

Samuel A. Kaplan, Chairman

### REGISTRATION COMMITTEE

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Bobby Craft, Ph.D., Chairman for ACGIH

Robert J. Barghini, Sr. — Respiratory Protective Devices

Ernest M. Dixon, M.D., Sc.D. — Occupational Medicine

James O. Jackson, Ph.D. — Analytical Chemistry

Thomas E. Kreichelt — Personal Protective Devices

Daniel Lillian, Ph.D. — Air Pollution

Donald R. McFee, Sc.D. — Noise

William E. Murray — Non-Ionizing Radiation

Jerry L. Purswell, Ph.D. — Ergonomics

Frank M. Renshaw, Ph.D. — Engineering

Sheldon H. Rabinovitz — General Industrial Hygiene

Henry M. Taylor, Jr. — Personal Protective Devices

Marvin I. Tillery — Aerosol Technology

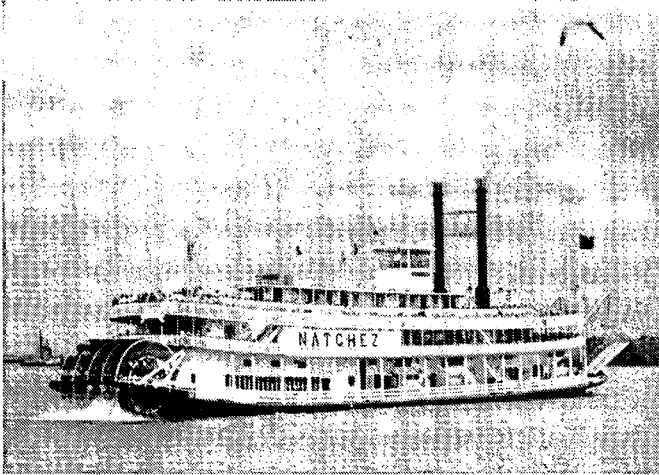
Roger Wabeke — Poster Session

David Waite — Ionizing Radiation

Claude H. Wolfe — Toxicology

**SPECIAL EVENT**  
**EVENING CRUISE on the *MIGHTY MISSISSIPPI***  
**WEDNESDAY, MAY 25th**  
**(Buses leave Fairmont Hotel 6:15 P.M.)**

**Join us on a special charter cruise on the steamboat  
NATCHEZ**



Take a nostalgic trip into the past on the river which is filled with exciting history of the development of one of the oldest cities in the South and the third largest port in the world.

The **NATCHEZ** is 280' long with a 44' beam. It is all steel and completely steam powered with a 25' stern paddle wheel. She's won two consecutive river races against the Delta Queen.

The evening includes:

- Transportation to the Toulouse Street Wharf (by Jackson Square) and return to hotel (you may want to plan a walk back through the French Quarter).
- Cocktails (2 drinks included & cash bar; incl. beer and soda)
- Buffet Style Creole Dinner on board the **NATCHEZ**
- Entertainment — dancing, listening, singing with a New Orleans Dixieland Jazz Band
- 2-hour River Cruise — up and down the historic Mississippi River

**TOTAL COST \$18 PER PERSON**

# AMERICAN INDUSTRIAL HYGIENE CONFERENCE

MAY 22-27, 1977

## Program Summary

### REGISTRATION

Sun., May 22, 1:00 p.m. — 8:00 p.m.

Mon., May 23 — Thurs., May 26, 8:00 a.m. — 5:00 p.m.

CONFERENCE HEADQUARTERS — CHANCELLOR'S ROOM  
PRESS ROOM — PRESIDENT'S ROOM

#### Saturday, May 21

#### Room Locations

8:30 a.m.- 4:30 p.m.	ABIH Certification Exams .....	University
9:00 a.m.- 5:00 p.m.	ACGIH Board Meeting & Luncheon.....	Wildcatter

#### Sunday, May 22

8:30 a.m.- 4:30 p.m.	ABIH Certification Exams .....	University
8:30 a.m.-10:00 p.m.	AIHA Board Meeting & Dinner .....	International Suite
9:00 a.m.- 5:00 p.m.	ACGIH Board Meeting & Luncheon.....	Wildcatter
1:00 p.m.- 6:00 p.m.	Navy Industrial Hygiene Society .....	Bayou I
1:00 p.m.- 5:00 p.m.	Refresher Courses .....	(See pp. 7-10 for locations)

#### Monday, May 23

8:00 a.m.-12:00 Noon	Refresher Courses .....	(See pp. 10-14 for locations)
8:00 a.m.-11:30 a.m.	AIHA Board Meeting— Reports From Committees .....	University (Open to all AIHA Members)
8:00 a.m.- 5:00 p.m.	Exhibits Set-Up .....	Imperial Ballroom
8:30 a.m.- 5:00 p.m.	Family & Guest Hospitality .....	Creole
9:00 a.m.-12:00 Noon	Navy Industrial Hygiene Society .....	Bayou I
1:00 p.m.- 4:30 p.m.	AIHC Opening-General Session .....	International Ballroom
4:30 p.m.- 5:30 p.m.	Herbert E. Stokinger Lecture.....	International Ballroom
5:00 p.m.- 6:30 p.m.	Harvard School of Public Health Alumni ..	International Suite
5:00 p.m.- 6:30 p.m.	Texas A & M University/University of Iowa Alumni Social Hour.....	Explorer's
6:00 p.m.- 7:30 p.m.	University of Pittsburgh Alumni Social Hour .....	Wildcatter
7:00 p.m.	ABIH Board Meeting & Dinner .....	Orleans

## Room Locations

### Tuesday, May 24

8:30 a.m.-10:00 a.m.	<b>AIHC Roundtable</b> .....	International Ballroom
8:30 a.m.- 5:00 p.m.	<b>Exhibits</b> .....	Imperial Ballroom
8:30 a.m.- 5:00 p.m.	<b>Family &amp; Guest Hospitality</b> .....	Creole
8:30 a.m.-12:30 p.m.	<b>American Insurance Association</b> .....	Rex
9:00 a.m.-11:00 a.m.	<b>AIHA Employment Service</b> .....	Tulane/Loyola
10:30 a.m.-12:00 Noon	<b>ACGIH Business Meeting</b> .....	International Ballroom (Open to entire AIHC)
10:30 a.m.-12:00 Noon	<b>AIHA Local Sections Council</b> .....	Gold
12:00 Noon-1:00 p.m.	<b>Kettering Laboratory Alumni Luncheon</b> .....	Wildcatter
12:00 Noon-1:30 p.m.	<b>Refresher Course Instructor's Luncheon</b> .....	International Suite
12:00 Noon-	<b>ABIH Board Meeting &amp; Luncheon</b> .....	Orleans
1:00 p.m.- 2:30 p.m.	<b>Poster Session I</b> .....	Explorer's
1:00 p.m.- 3:00 p.m.	<b>Concurrent Sessions</b> .... (See pp. 22-28 for details & locations)	
2:00 p.m.- 4:00 p.m.	<b>AIHA Employment Service</b> .....	Tulane/Loyola
4:00 p.m.- 5:00 p.m.	<b>Cummings Memorial Lecture</b> .....	Grand Ballroom
6:00 p.m.- 7:00 p.m.	<b>MSA Cocktail Party</b> .....	International Ballroom
8:30 p.m.	<b>Open Forum — OSHA Abatement Guidelines</b> .....	Grand Ballroom

### Wednesday, May 25

8:30 a.m.-10:00 a.m.	<b>Concurrent Sessions</b> . (See pp. 29-34 for details & locations)	
8:30 a.m.-10:00 a.m.	<b>Poster Session II</b> .....	Explorer's
8:30 a.m.- 5:00 p.m.	<b>Exhibits</b> .....	Imperial Ballroom
8:30 a.m.- 5:00 p.m.	<b>Family &amp; Guest Hospitality</b> .....	Creole
9:00 a.m.-11:00 a.m.	<b>AIHA Employment Service</b> .....	Tulane/Loyola
10:30 a.m.-12:00 Noon	<b>AIHA Business Meeting</b> .....	International Ballroom (Open to entire AIHC)
12:00 Noon-1:30 p.m.	<b>AIHA Past President's Luncheon</b> .....	International Suite
1:00 p.m.- 3:40 p.m.	<b>Concurrent Sessions</b> . (See pp. 35-39 for details & locations)	
2:00 p.m.- 4:00 p.m.	<b>AIHA Employment Service</b> .....	Tulane/Loyola
4:00 p.m.- 5:00 p.m.	<b>Yant Memorial Lecture</b> .....	Grand Ballroom
6:15 p.m.	<b>Special Event — "Evening River Boat Cruise"</b>	

### Thursday, May 26

7:30 a.m.	<b>Exhibitors Breakfast</b> .....	Wildcatter
8:00 a.m.-10:00 a.m.	<b>Annual NIOSH, OSHA, States Seminar</b> ....	Grand Ballroom
8:00 a.m.-12:00 Noon	<b>Concurrent Sessions</b> . (See pp. 46-57 for details & locations)	
8:30 a.m.-10:00 a.m.	<b>Poster Session III</b> .....	Explorer's
8:30 a.m.-12:00 Noon	<b>Exhibits</b> .....	Imperial Ballroom
8:30 a.m.- 5:00 p.m.	<b>Family &amp; Guest Hospitality</b> .....	Creole
12:00 Noon	<b>Univ. of Michigan Alumni</b> .....	Wildcatter
1:00 p.m.-5:00 p.m.	<b>Concurrent Sessions</b> (See pp. 58-71 for details & locations)	
1:00 p.m.-5:00 p.m.	<b>Univ. of North Carolina, Social Hour</b> .....	International Suite
7:00 p.m.	<b>AIHC Banquet</b> .....	Imperial Ballroom

### Friday, May 27

7:30 a.m.	<b>AIHA Board Meeting &amp; Breakfast</b> .....	International Suite
8:00 a.m.-12:00 Noon	<b>Concurrent Sessions</b> . See pp. 72-82 for details & locations	
3:30 p.m.	<b>LAB Accreditation Open Meeting</b> .....	Bayou II



## REFRESHER COURSES

Sunday — May 22, 1977

**Note:**

Advance registration for refresher courses is required using the form with this program. Attendance is limited on a "first come, first served" basis. The registration fee must accompany your registration, and cannot be refunded after May 16, 1977. Closing date for all registrations with the Managing Director's office is May 9, 1977. Registrations for remaining refresher course openings may be made Sunday, May 22, at the Conference, 8:00-11:30 a.m. All registrations then close.

**Course No. 1**

"AIR AND GAS CLEANING—COMPLETE COURSE" ..... **Tulane Room**  
**Richard Dennis** (Course continues Monday a.m.)

GCA  
Bedford, MA

**1:00 P.M. to 2:30 P.M.**

Particle Collection Mechanisms-Filtration Through Woven and Non-Woven Media

**Melvin W. First**  
Harvard University  
Boston, MA

**3:00 P.M. to 4:00 P.M.**

Scrubbers for Particulate Control; Scrubbers for Gas Control

**Melvin W. First**  
Harvard University  
Boston, MA

**4:00 P.M. to 5:00 P.M.**

**Abstract:**

Half-day course is intended to provide comprehensive review of contemporary technology for control of industrial dusts, fumes, sprays, mists, smokes, vapors, and gases. Registration is available only for the complete presentation. Attendees desiring to leave during any presentation may reenter later in the sequence. No reduction in registration fee will be allowed for partial attendance.

**Course No. 2**

"OCCUPATIONAL EXPOSURE SAMPLING STRATEGY AND STATISTICAL ANALYSIS OF DATA" ..... **Gold Room**

**Nelson A. Leidel**  
NIOSH  
Boston, MA

**1:00 P.M. to 4:00 P.M.**

**Abstract:**

Course includes estimation of potential employee exposures; determining the need for exposure measurements; exposure measurements sampling strategy including number of samples and sample lengths. Practical statistical methods are given to decide compliance or non-compliance with occupational health standards. Emphasis is placed on the intent and compliance with proposed OSHA health regulations. The course is based on the NIOSH "Occupational Exposure Sampling Strategy Manual" (provided to attendees).

**Course No. 3**

"QUALITY CONTROL IN THE LABORATORY" ..... **Orleans Room**

**R. Wood, J. Knowles**  
Environmental Health Laboratory  
Farmington, MI

**1:00 P.M. to 3:00 P.M.**

**Abstract:**

Methods necessary to achieve proper quality control in the industrial hygiene laboratory will be discussed.

**Course No. 4**

"SAMPLING AND EVALUATING AIRBORNE ASBESTOS" ..... Loyola Room

**Stephen G. Bayer**

NIOSH

Cincinnati, OH

1:00 P.M. to 3:00 P.M.

**Abstract:**

Course includes discussions of all aspects of sampling and evaluation. Discussions include—(1) sampling equipment, (2) calibration of sampling equipment, (3) sampling time, (4) equipment for counting fibers, (5) procedures for counting fibers, (6) methods of calculating concentrations of airborne asbestos fibers, (7) other related topics.

**Course No. 5**

"BIOLOGICAL EFFECTS AND FIELD MEASUREMENT OF ULTRAVIOLET

RADIATION" ..... Creole Room

**William Murray**

NIOSH

Cincinnati, OH

1:00 P.M. to 3:00 P.M.

**Abstract:**

Review of various action spectra of ultraviolet radiation on skin and eyes and discussion of effects. Discussion of methods of protection against ultraviolet radiation. Description of field instruments — their construction, function, and limitations. Discussion of methods for calculating energy densities of ultraviolet radiation.

**Course No. 6**

"ASSESSMENT OF HEAT EXPOSURE" ..... Rex Room

**Francis N. Dukes — Dobos**

NIOSH

Cincinnati, OH

1:00 P.M. to 3:00 P.M.

**Abstract:**

Presentation of methods of assessing heat stress including discussion of problems encountered due to shortcomings in monitoring techniques. Discussion of great individual variability in heat tolerance. Review of preventive work practices to minimize heat stress including a discussion of their usefulness and feasibility. Presentation of rationale of ACGIH for heat stress and discussion of recommended standard for heat stress.

**Course No. 7**

"ENGINEERING CONTROL OF CONTAMINANTS" ..... Explorer

**Harold Adams**

Hartford Insurance Companies

Hartford, CT

2:00 P.M. to 5:00 P.M.

**Abstract:**

Covers the basic fundamentals of controlling air contaminants by engineering means to prevent contamination of the work place. Discussion of engineering controls includes — (1) Enclosure or isolation of process, (2) Substitution of less harmful materials, (3) Changing the process, (4) Local exhaust ventilation, (5) General dilution ventilation, (6) Supplying air or oxygen to confined spaces, (7) Wet methods of dust suppression, (8) Good housekeeping, (9) Orderly controlled waste disposal.

**Course No. 8**

**"ANALYZING BIOLOGICAL SAMPLES AS MEANS OF EVALUATING EXPOSURE TO TOXIC SUBSTANCES" ..... Rex Room**

**Ralph G. Smith**

School of Public Health

University of Michigan

Ann Arbor, MI

**3:00 P.M. to 5:00 P.M.**

**Abstract:**

Course covers the use of analysis of biological specimens as a method for determining the degree of exposure to toxic substances. Course reviews the status of analyses of bioassay procedures for a number of substances (except lead) most widely used in industry. Discussion will include an evaluation of the usefulness of given analyses, the probable significance of results, and preferred methods of performing the analyses.

**Course No. 9**

**"BIOLOGICAL EFFECTS AND CONTROL OF EXPOSURE TO ELEMENTAL MERCURY AND ITS INORGANIC SALTS" ..... Orleans Room**

**Richard Henderson**

Olin Corp.

New Haven, CT

**3:00 P.M. to 5:00 P.M.**

**Abstract:**

Review of data on effects of different exposures to elemental mercury and its inorganic salts. Work practices to control exposure and methods of measuring extent of exposure will be presented.

**Course No. 10**

**"PROCEDURES AND CALCULATIONS FOR ESTABLISHING KNOWN GAS AND VAPOR CONCENTRATIONS ..... Loyola Room**

**William R. Burg**

Kettering Laboratory

University of Cincinnati

Cincinnati, OH

**3:00 P.M. to 5:00 P.M.**

**Abstract:**

General and broad survey of (1) static systems for preparing known low concentrations of gases and vapors, (2) dynamic systems for preparing known low concentrations of gases and vapors, (3) micrometering of gases, (4) rotameter correction equations, (5) design of permeation tubes and their applications.

**Course No. 11**

**"FIBROGENIC DUSTS" ..... Mayor's Chamber**

**Andrew L. Reeves**

Wayne State University

Detroit, MI

**3:00 P.M. to 5:00 P.M.**

**Abstract:**

Discussion of minerals, especially various forms of silica and silicates, from viewpoint of their chronic inhalation toxicity. Presentation of theories involving cytology of the fibrogenic process in the lungs, pathogenesis and clinical course of the pneumoconioses (including silicosis, asbestosis, "black lung", and related diseases). Orienting comments for non-physicians on diagnosis and therapy of diseases caused by fibrogenic dusts.

**Course No. 12**

**"INTERPRETATION OF THRESHOLD LIMIT VALUES" ..... Creole Room**

**Peter A. Breysse**

School of Public Health  
University of Washington  
Seattle, WA

**3:00 P.M. to 5:00 P.M.**

**Abstract:**

Discussion of factors to be considered when interpreting individual Threshold Limit Values. Factors include: (1) Bases for establishing TLV (2) Extent of human experiences, (3) Hazard potential category for each contaminant, (4) Sampling and analysis, (5) Presence of other contaminants, (6) Complexity of problems in individual plants, and (7) Worker emotional outlook.

**REFRESHER COURSES**

**Monday — May 23, 1977**

**Course No. 1 Cont'd. "AIR AND GAS CLEANING"**

**"ELECTROSTATIC PRECIPITATORS" ..... Tulane Room**

**William C. Hinds**

Harvard University  
Boston, MA

**8:00 A.M. to 9:00 A.M.**

**"GAS ABSORPTION"**

**Dwight W. Underhill**

Harvard University  
Boston, MA

**9:00 A.M. to 9:45 A.M.**

**"COMBUSTION CONTROL OF CONTAMINANTS"**

**Dwight W. Underhill**

Harvard University  
Boston, MA

**10:00 A.M. to 11:00 A.M.**

**"NEW AND NOVEL DEVICES"**

**Charles E. Billings**

Environmental Engineering Sciences  
Chestnut Hill, MA

**11:00 A.M. to Noon**

**Course No. 13**

**"PRINCIPLES OF NOISE REDUCTION" ..... Wildcatter Room**

**Vaughn H. Hill**

Haskell Laboratory  
E. I. duPont de Nemours & Co., Inc.  
Wilmington, DE

**8:00 A.M. to 10:00 A.M.**

**Abstract:**

Presentation of basic engineering principles and techniques for noise control. Discussion of noise specifications for equipment procurement. Presentation of specific applications of engineering control of noise by means of case studies. Knowledge of physics of sound is a requisite for the course.

**Course No. 14**

**"INHALATION TOXICOLOGY" .....** **Rex Room**

**Basil K. J. Leong**

International Research and Development Corporation  
Mattawan, MI

**8:00 A.M. to 10:00 A.M.**

**Abstract:**

Discussion of — (1) Classification of gases and particulate airborne toxicants, (2) Exposure techniques and equipment, (3) Concepts of dose-response in inhalation toxicology.

**Course No. 15**

**"PERSONAL SAMPLING FOR GASES AND VAPORS AND THE USE OF  
STATISTICS IN SAMPLING" .....** **Orleans Room**

**Arvin G. Apol**

NIOSH — Region X  
Seattle, WA

**Joseph Wendlick**

Weyerhaeuser Company  
Longview, WA

**8:00 A.M. to 10:00 A.M.**

**Abstract:**

Course covers use of personal samplers equipped with tubes containing packed granular sorbents for collection of vapors and gases, and the use of sampling statistics for determining compliance or non-compliance. Discussion covers use of sampling tubes containing activated charcoal, silica gel, alumina, coated resins and other substances, and sampling tubes designed for collection of specific vapors such as mercury. The packing in the tubes, use of the tubes for personal sampling, advantage and disadvantages of using these tubes and the storage of tubes are also discussed. A half hour session is included on the use of sampling statistics for determining the sampling strategy for compliance or non-compliance, the number of samples collected, length of the sample time, and the various sampling periods such as full period samples, partial period samples and grab samples.

**Course No. 16**

**"RESPIRATORY PROTECTION" .....** **Bayou #2**

**Alan Hack**

Los Alamos Scientific Lab.  
Los Alamos, NM

**8:00 A.M. to 11:30 A.M.**

**Abstract:**

Discussion of all basic elements of a comprehensive respirator program. Description of construction of all types of respirators and explanation of function. Discussion of government regulations.

**Course No. 17**

**"FUNDAMENTALS OF HEAT STRESS" .....** **Loyola Room**

**Henry M. Taylor, Jr.**

Center for Occupational and Environmental Safety and Health  
Stanford Research Institute  
Menlo Park, CA

**8:00 A.M. to 10:00 A.M.**

**Abstract:**

Presentation of basic and fundamental concepts of heat stress. Discussion of a hot stressful environment and its characterization. Presentation of rationale for basic instrumentation and its relationship to WBGT. Course will enable industrial hygienists without prior knowledge of heat stress to understand the subject and to apply the basic principles to actual job situations.

**Course No. 18**

**"PRINCIPLES AND APPLICATIONS OF ERGONOMICS" ..... Mayor's Chamber**

**E. R. Tichauer**

Center for Safety

New York University

New York, NY

**Tarek M. Khalil**

University of Miami

Coral Gables, FL

**8:00 A. M. to 12:30 P.M.**

**Abstract:**

This is a comprehensive course covering the principles and applications of Ergonomics in occupational environments. The course will be divided into two parts: Part I covers the basic concepts underlying ergonomic reasoning. The topics of Occupational Anatomy, human power, work physiology, anthropometry and biomechanics will be covered. Practical experiments and visual aids will be used to illustrate concepts. Classification of stress and the concepts of work tolerance will be explained.

Part II will concentrate on utilization of principles explained in Part I of the course in occupational environments. The ergonomics approach to Occupational Safety and Health will be explained. Optimum design of work place, tools and equipment within human capacities and limitations will be illustrated. Problems of lifting and manual materials handling as well as other environmental stresses in the work environment will be discussed and recommendations for dealing with them delineated. The course will conclude with explanation of step by step procedures for improving safety, health and productivity of workers.

**Course No. 19**

**"RESPIRABLE DUST SAMPLING" ..... Explorer's Room**

**Morton Lippmann**

New York University

New York, NY

**8:30 A.M. to 10:00 A.M.**

**Abstract:**

Discussion of development of respirable dust sampling. Review of various definitions of respirable dust. Description and discussion of instruments and techniques for respirable dust sampling and their application to specific sampling situations. Description and critical evaluation of several proposed sampler acceptance standards and AIHA Guide for Respirable Dust Mass Sampling.

**Course No. 20**

**"EVALUATION AND TESTING OF LOCAL EXHAUST**

**VENTILATION SYSTEMS" ..... Emerald Ballroom**

**Donald R. Parker**

Sandia Laboratories

Albuquerque, NM

**9:00 A.M. to 12:00 Noon**

**Abstract:**

The OSHA standards which refer to ventilation are discussed. Many of these standards specify air velocities and/or flowrates. Test methods are described which can be used for determining compliance with OSHA standards. Emphasis is placed on the instruments and procedures for making air velocity measurements and their corresponding flow rates.

**Course No. 21**

**"DEVELOPMENT OF MEDICAL SURVEILLANCE REGULATIONS FOR TOXIC SUBSTANCES"**

**Wildcatter Room**

**E. S. Flowers**

**NIOSH**

**Rockville, MD**

**10:00 A.M. to 12:00 Noon**

**Abstract:**

Reviews the background, rationale, and specific considerations in developing medical surveillance standards for toxic substances. Topics covered include — (1) Justification of medical surveillance standard; (2) General guidelines covering properties, routes of entry, toxicology, signs and symptoms, diagnostic tests, treatment, surveillance, and prevention of over-exposures; (3) Substance safety data and first aid; (4) Toxicology and surveillance considerations for specific compounds.

**Course No. 22**

**"CALIBRATION OF PORTABLE INSTRUMENTS FOR SAMPLING THE AIR IN THE WORKPLACE"**

**Rex Room**

**Paul F. Alvarado**

**NIOSH Regional Consultant**

**Boston, MA**

**10:00 A.M. to 12:00 Noon**

**Abstract:**

Fundamentals of the calibration of portable air sampling instruments commonly used in industrial hygiene work will be presented. (Periodic calibration of field instruments is a required component of an industrial hygiene program.), (1) Techniques for the design of field and laboratory calibration methods, (2) Temperature and pressure corrections, and (3) Calculations. Persons without previous experience in instrument calibration will obtain sufficient knowledge to enable them to design and apply the methods for calibration of air sampling instruments.

**Course No. 23**

**"PRACTICAL AND THEORETICAL CONSIDERATIONS IN EVALUATING DERMAL TOXICITY"**

**Orleans Room**

**Dorothy B. Hood**

**Haskell Laboratory**

**E. I. duPont de Nemours & Co., Inc.**

**Wilmington, DE**

**10:00 A.M. to 12:00 Noon**

**Abstract:**

Discussion of skin and its functions and its effectiveness as a barrier to physical and chemical insults. Presentation of test methods used to predict potential systemic toxicity via the skin absorption route. Discussion of dermatitis potential in terms of primary irritation and allergic contact dermatitis. Review of industrial hygiene measures used for protection against dermal toxicity.

**Course No. 24**

**"METABOLISM OF INDUSTRIAL TOXICANTS" . . . . . Explorer's Room**

**Souheil Laham**

Environmental Health Directorate

Department of National Health & Welfare

Ottawa, Canada

**10:00 A.M. to 12:00 Noon**

**Abstract:**

Introductory outline describing various biochemical mechanisms and pathways related to biotransformations of toxic chemicals in humans. Discussion of metabolism of industrially important organic chemicals and applications of metabolic studies to the development of reliable indices of exposure. Description of analytical methods (TLC, Paper, Gas and Liquid Chromatography, Ultraviolet and Infrared Spectroscopy, G.C./Mass Spectrometry, etc.) used for isolation and identification of metabolites of toxic substances widely used in working environments (solvents, agricultural chemicals, etc.)

**Course No. 25**

**"HEALTH MAINTENANCE OF LEAD WORKERS" . . . . . Loyola Room**

**Sidney I. Lerner**

Kettering Laboratory

University of Cincinnati

Cincinnati, OH

**10:00 A.M. to 12:00 Noon**

**Abstract:**

General review of toxicology of inorganic lead. Discussion of methods of environmental and biological monitoring for airborne inorganic lead. Presentation of a program for health maintenance of lead workers. Discussion of worker placement including placement of fertile females.

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**AIHC BANQUET FEATURES  
JUSTIN WILSON, INTERNATIONAL  
"CAJUN" HUMORIST**

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**COME TO THE BANQUET . . .  
PREPARED TO ENJOY AN  
EVENING OF NEW ORLEANS FOOD  
AND ENTERTAINMENT . . . ALL  
FOR \$18.00 PER PERSON  
THURSDAY, 7:00 — IMPERIAL BALLROOM**



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## POSTER SESSIONS

### Explorer's Room

This year, for the first time, the American Industrial Hygiene Conference is providing four one-half day Poster Sessions. This provides a unique opportunity for direct graphic and verbal presentations by the investigator(s) to interested individuals.

**TUESDAY, MAY 24, 1977**

### Explorer's Room

#### POSTER SESSION I

**1:00 — 2:30 P.M.**

#### Session Arranger:

ROGER WABEKE  
Ford Motor Co.  
Dearborn, MI

#### Session Chairman:

ROBERT S. AJEMIAN  
Great Lakes Steel  
Ecorse, MI

An Analytical Protocol for Assessing the Evolution of Combustion Products from Polymeric Materials

- #1 R. A. YOUNT, G. F. SMITH  
B. F. Goodrich Chemical Co.  
Avon Lake, OH

Predicting Ambient Heat Problems in a Proposed Large Scale, Mechanized Underground Oil Shale Mining Operation, A Case History

- #2 F. C. BOSSARD  
Montana Col. Mineral Sci. & Tech.  
Butte, MT

Dust Exposures in the Canadian Grain Industry

- #3 JEAN-PIERRE FARANT, C. MOORE, J. P. WINDISH  
Canada National Health and Welfare  
Ottawa, Ontario, Canada

Factors Affecting Trace Metal Blank Values of Occupational Samples

- #4 P. M. ELLER, J. C. HAARTZ, R. D. HULL, B. FRUMER  
NIOSH  
Cincinnati, OH

Gas Sampling Capability of Vacutainers

- #5 R. W. FREEDMAN, B. I. FERBER, W. DUERR  
U.S. Bureau of Mines  
Pittsburgh, PA

Comparison of Personal Sample Collection Methods with the AEC Sample Collection Method in a Beryllium Production Facility

- #6 H. M. DONALDSON  
NIOSH  
Cincinnati, OH

An Industrial Hygiene Calibration Manifold

#7 L. T. FREELAND

E. I. DuPont de Nemours & Co., Inc.  
Victoria, TX

Control of Occupational Exposures in Dental Facilities

#8 T. V. BORKOWSKI, M. F. HUEBNER

U.S. Army Environmental Hygiene Agency  
Edgewood Arsenal, MD

Gas Chromatography/Mass Spectrometry: Its Application to Industrial Hygiene  
Analytical Problems

#9 G. CHOUDHARY, C. V. COOPER

NIOSH  
Cincinnati, OH

Occupational Exposure to Lead as Proposed by the Occupational Safety and  
Health Administration

#10 F. H. RYER

USDOL/OSHA  
Washington, DC

**WEDNESDAY, MAY 25, 1977**

**8:30 — 10:00 A.M.**

**Explorer's Room**

**POSTER SESSION II**

**Session Arranger:**

ROGER WABEKE  
Ford Motor Co.  
Dearborn, MI

**Session Chairman:**

NORMAN BRUSK  
Borden Chemical Co.  
Columbus, OH

- Exposure to Asbestos Fibers During Production and Use of Asbestos Friction Materials
- #11** J. M. DEMENT, R. ZUMWALDE, D. ROBERTS, H. LUDWIG, P. JOHNSON  
NIOSH  
Cincinnati, OH
- Carbon Monoxide Monitor Features — Hydrated Solid Polymer Electrolyte Membrane Cell
- #12** R. C. JONES, A. F. LaCONTI, L. J. NUTTALL  
General Electric Co.  
Wilmington, MA
- Formation of Bis (chloromethyl) Ether in Textile-Finishing Operations
- #13** T. MARCELENO  
NIOSH  
Morgantown, WV
- Application of Occupational Exposure Limits to Unusual Work Schedules
- #14** J. L. S. HICKEY, P. C. REIST  
University of North Carolina  
Chapel Hill, NC
- Interference Studies on the Determination of Quartz by Colorimetric Method Quantitative Effects of the Amorphous Silica and Other Siliceous Materials
- #15** E. G. FERNANDEZ, J. L. NIETO  
Servicio Social de Hygiene Y Seguridad Del Trabajo  
Madrid, Spain
- Investigation of a Dual Filter Sampling Technique for the Monitoring of Particulate and Gaseous Fluoride in Air
- #16** W. EINFELD, S. W. HORSTMAN  
University of Washington  
Seattle, WA
- #17** PAPER CANCELED
- The Determination of Sodium Hydroxide in Industrial Air Samples
- #18** D. V. SWEET, J. C. HAARTZ, M. S. HAWKINS  
NIOSH  
Cincinnati, OH
- Specific Ion Electrode Method for Monitoring HCN in Stack Emissions
- #19** K. E. WILLIAMS  
U.S. Army Environmental Hygiene Agency  
Englewood, MD
- Chromium VI & Chromium III in Stainless Steel Welding Fumes Using Electron Spectroscopy for Chemical Analyses (ESCA) and Neutron Activation Analysis
- #20** J. C. CARVER, G. M. LAUTNER, R. B. KONZEN  
Texas A&M University  
College Station, TX

## WEDNESDAY AFTERNOON, MAY 25

### Bayou I

## AEROSOL TECHNOLOGY

#### Session Arrangers:

MARVIN I. TILLERY  
Los Alamos Scientific Laboratory  
Los Alamos, NM  
OWEN R. MOSS  
Battelle Pacific Northwest Laboratories  
Richland, WA

#### Session Chairman:

HARRY J. ETtingER  
Los Alamos Scientific Laboratory  
Los Alamos, NM

#### Monitors:

G. W. WOOD  
Los Alamos Scientific Laboratory  
Los Alamos, NM  
C. I. FAIRCHILD  
Los Alamos Scientific Laboratory  
Los Alamos, NM

1:00 — Test Data on a Cyclone for Respirable Dust Sampling

#112 WALTER JOHN, GEORGE P. REISCHL  
California Department of Health  
Berkeley, CA

1:20 — The Characterization of Short Circuit Flow in a Miniature Stairmand Design  
#113 Cyclone Dust Collector

JOHN M. HOCHSTRASSER,	B. E. SALTZMAN, W. LICHT, H. AYER
G. D. Searle & Co.	L. J. SCHAFER
Skokie, IL	Kettering Laboratory
	Cincinnati, OH

1:40 — Downstream Air Flow Characteristics and Cyclone Performance

#114 HOWARD E. AYER, KENNETH TROUTMAN  
Kettering Laboratory  
Cincinnati, OH

2:00 — Evaluation of Two Light-Scattering Respirable Dust Monitors

#115 EILEEN M. THOMPSON, HARRY N. TREAFIS, THOMAS F. TOMB  
Mining Enforcement and Safety Administration  
Pittsburgh, PA

2:20 — Performance of a Respirable Mass Monitor

#116 J. C. VOLKWEIN, P. T. BEHUM  
U.S. Bureau of Mines  
Pittsburgh, PA

2:40 — Comparison of Respirable Coal Mine Dust Concentrations Measured with an  
#117 MRE and a Newly Developed Two-Stage Impactor Sampler

HARRY N. TREAFTIS, THOMAS F. TOMB, CHARLES D. TAYLOR  
Mining Enforcement and Safety Administration  
Pittsburgh, PA

3:00 — VISIT EXHIBITS ..... Imperial Ballroom

4:00 — Yant Memorial Lecture ..... Grand Ballroom  
SIBTE H. ZAIDI, Ph.D.  
Lucknow, India

## WEDNESDAY AFTERNOON, MAY 25

### University Room

### ERGONOMICS

#### Session Arranger:

JERRY L. PURSWELL  
University of Oklahoma  
Norman, OK

#### Session Chairman:

JERRY D. RAMSEY  
Texas Tech. University  
Lubbock, TX

#### Monitor:

E. KAMON  
Penn State University  
University Park, PA

- 1:00 — An Evaluation of Manual Materials Handling Hazards  
**#118** D. B. CHAFFIN, G. D. HERRIN, W. M. KEYSERLING  
The University of Michigan  
Ann Arbor, MI
- 1:20 — Lifting-Pushing-Pulling Techniques — Using Localized Training Films  
**#119** P. A. SONNTAG  
Western Electric Co.  
Norcross, GA
- 1:40 — Continuous Recording and Analysis of Physiologic Responses at Work  
**#120** R. GOLDSMITH, C. O'BRIEN, W. SMITH, G. L. E. TAN  
University of London  
London, England
- 2:00 — Wholebody Vibration Factor in Truck Driver Health  
**#121** G. J. GRUBER, E. K. CALVERT  
Southwest Research Institute  
San Antonio, TX
- 2:20 — Assigning Persons to Strenuous Jobs: Do We Need an Assessment of  
Dynamic Strength ?  
**#122** E. K. H. KROEMER  
Wayne State University  
Detroit, MI
- 2:40 — Some Applications of Ergonomics at Eastman Kodak Co.  
**#123** W. J. NIELSEN  
Eastman Kodak Co.  
Rochester, NY
- 3:00 — VISIT EXHIBITS ..... **Imperial Ballroom**
- 4:00 — Yant Memorial Lecture ..... **Grand Ballroom**  
SIBTE H. ZAIDI, Ph.D.  
Lucknow, India

## WEDNESDAY AFTERNOON, MAY 25

Grand Ballroom

### RESPIRATOR TECHNOLOGY

#### Session Arranger:

ROBERT BARGHINI  
3M Co.  
St. Paul, MN

#### Session Chairman:

J. M. WHITE  
Atomic Energy of Canada, Ltd.  
Chalk River, Ontario

#### Monitors:

J. A. PRITCHARD  
Los Alamos Scientific Lab.  
Los Alamos, NM  
H. J. McDERMOTT  
Livermore, CA

- 1:00 — Respirator Program for Diversified Corporation that Meets OSHA Requirements  
**#124** R. A. SPIELMAN, J. W. FEUK  
3M Company  
St. Paul, MN
- 1:20 — A Mobile Fitting and Training Classroom for Instruction Personnel in  
Respirator Use  
**#125** D. H. NULL, S. A. GILGEN, L. G. MUSEN, H. W. STROSCHEN  
Aerojet Nuclear Company  
Idaho Falls, ID
- 1:40 — The Effects of the Variation of Relative Humidity Within the  
Specifications of Part II on the Service Life of Cartridges  
**#126** N. J. McGINNIS, G. L. FAWCETT  
NIOSH  
Morgantown, WV
- 2:00 — The Statistical Performance of a Current Isoamyl Acetate  
Screening Test for Respirator Fit  
**#127** W. A. BURGESS  
Harvard Univ. — School of Public Health  
Boston, MA  
N. A. LEIDEL  
NIOSH  
Cincinnati, OH
- 2:20 — Respirator Cartridge Efficiency for Airborne Arsenic: A Preliminary Report  
**#128** T. J. SMITH, M. O. VARNER, D. A. ROBBINS, R. D. PUTNAM  
Univ. of Utah Medical Center  
Salt Lake City, UT
- 2:40 — Respirator Protection Factors for Loose-Fitting  
Supplied-Air Respirators  
**#129** D. D. DOUGLAS, P. HESCH  
Los Alamos Scientific Laboratory  
Los Alamos, NM
- 3:00 — VISIT EXHIBITS ..... Imperial Ballroom
- 4:00 — Yant Memorial Lecture ..... Grand Ballroom  
SIBTE H. ZAIDI, Ph.D.



- 1:40 — Retention of Parathion Vapor by Membrane Filters  
**#44**      MICHAEL WILLIAMS  
              Environ. Health Div., Santa Cruz County  
              Santa Cruz, CA  
              ROBERT C. SPEAR  
              Department of Biomedical and Environmental Health Sciences  
              University of California  
              Berkeley, CA
- 2:00 — Investigation of a Dual Filter Sampling Technique for the Monitoring of  
**#45**      Particulate and Gaseous Fluoride in Air  
              W. EINFELD, S. W. HORSTMAN  
              University of Washington  
              School of Public Health and Community Medicine  
              Seattle, WA
- 2:20 — Optical-Size Particle Penetration Through a Diffusion Processor for  
**#46**      Filter Sampling  
              W. H. MARLOW  
              Brookhaven National Laboratory  
              Upton, NY
- 2:40 — Screen Diffusion Battery for Monitoring Submicron Aerosols in Stack Gases  
**#47**      R. G. PATTERSON, S. CALVERT  
              Air Pollution Technology, Inc.  
              San Diego, CA
- 3:00 — Oxygen Absorption in Evaporating and Condensing Water Droplets  
**#48**      M. MATTESON  
              M. J. OLIVER  
              School of Chemical Engineering  
              Georgia Institute of Technology  
              Atlanta, GA
- 3:20 — VISIT EXHIBITS ..... **Imperial Ballroom**
- 4:00 — Cummings' Memorial Lecture ..... **Grand Ballroom**  
              JOHN A. ZAPP, Ph.D.

## TUESDAY AFTERNOON, MAY 24

### Emerald Ballroom

## ANALYTICAL CHEMISTRY/BIOLOGICAL MONITORING

### Session Arranger:

JAMES O. JACKSON  
Gulf Oil Corporation  
Pittsburgh, PA

### Session Chairman:

MORRIS M. JOSELOW  
New Jersey College of Medicine  
Newark, NJ

### Monitor:

ARNOLD O. RATHJE  
General Electric Company  
Cleveland, OH

WILLIAM H. DYRE  
Rohm and Haas Co.  
Philadelphia, PA

#### 1:00 — Overview of Biological Monitoring

#49 M. M. JOSELOW  
New Jersey College of Medicine and Dentistry  
Newark, NJ

#### 1:20 — The Analysis of Biological Fluids for Trace Metals by

#50 Atomic Absorption Spectroscopy  
T. L. CORUM  
H. L. KAHN  
Instrumentation Laboratory, Inc.  
Wilmington, MA

#### 1:40 — Evaluation of Zinc Protoporphyrin in an Occupational Environment

#51 F. I. GRUNDER  
A. E. MOFFITT, JR.  
Bethlehem Steel Corp.  
Bethlehem, PA

#### 2:00 — Analytical, Metabolic and Toxicological Studies on Isopropanol

#52 S. LAHAM  
M. POTVIN  
K. SCHRADER  
Department of National Health and Welfare  
Ottawa, Canada

#### 2:20 — Hazards Surveillance: Potential Utility of Short Term Assays for

#53 Early Detection of Occupational Hazards  
V. J. BEHRENS  
D. S. SUNDIN, F. M. STEPHENSON  
NIOSH  
Cincinnati, OH

#### 2:40 — Biological Monitoring of Styrene Exposure

#54 M. GUILLEMIN  
Institut Universitaire de Medecine Sociale et Preventive  
Lausanne, Switzerland  
D. BAUER  
Arbeitsärztlicher Dienst des Bundesamtes für Industrie  
Gewerbe und arbeit  
Zurich, Switzerland

- 3:00 — Biological Monitoring of Exposure to Toluene and Xylene  
**#55** D. BAUER, Arbeitsärztlicher Dienst des Bundesamtes für Industrie  
 Gewerbe und Arbeit, Zurich, Switzerland
- 3:20 — Total Arsenic Analysis of Blood, Urine, and Air by High Speed Anodic  
 Stripping Voltammetry  
**#56** P. H. DAVIS, F. J. BERLANDI, G. R. DULUDE, R. M. GRIFFIN, W. R. MATSON,  
 E. W. ZINK, Environmental Sciences Assoc. Inc. Bedford, Massachusetts
- 4:00 — Cummings Memorial Lecture ..... **Grand Ballroom**  
 JOHN A. ZAPP, Ph.D.

## TUESDAY AFTERNOON, MAY 24

### Gold Room

### ASBESTOS

#### Session Arranger:

SHELDON H. RABINOVITZ  
 Ford Motor Co.  
 Dearborn, MI

#### Session Chairman:

GEORGE C. STOECKER  
 General Motors Corp.  
 Warren, MI

#### Monitor:

W. B. KILGORE  
 General Motors, Warren, MI

- 1:00 — The Identification of Microfibers in Air, Biological Tissue, and Food  
**#57** Using the Scanning Electron Microscope and  
 Back Scattered Electron Imaging  
 P. B. DENEE  
 ALOSH  
 Morgantown, WV
- 1:20 — Exposure to Asbestos in "Asbestos-Free" Products  
**#58** R. D. SOULE  
 Clayton Environmental Consultants, Inc.  
 Southfield, MI
- 1:40 — A Review of Asbestos Exposure in Ontario  
**#59** G. S. RAJHANS, S. M. MORTON, G. M. BRAGG  
 Ontario Ministry of Health  
 Toronto, Ontario
- 2:00 — Comparison of Phase Contrast & Electron Microscopic Methods for  
 Evaluation of Asbestos Fiber Exposures  
**#60** K. M. WALLINGFORD, J. M. DEMENT, R. D. ZUMWALDE, D. R. ROBERTS  
 NIOSH  
 Cincinnati, OH.
- 2:20 — The Inertial Behavior of Fibers  
**#61** W. A. BURKE, N. A. ESMEN  
 University of Pittsburgh  
 Pittsburgh, PA
- 3:00 — VISIT EXHIBITS ..... **Imperial Ballroom**
- 4:00 — Cummings Memorial Lecture ..... **Grand Ballroom**  
 JOHN A. ZAPP, Jr.

**TUESDAY AFTERNOON, MAY 24**

**International Ballroom**

**CURRENT SOCIAL ISSUES FACING INDUSTRIAL HYGIENISTS**

**Session Arranger:**

TERRY BRIGGS  
University of Cincinnati  
Cincinnati, OH

**Session Chairman:**

ROBERT HARRIS  
University of North Carolina  
Chapel Hill, NC

**Monitor:**

LOREN ANDERSON  
University of Cincinnati  
Cincinnati, OH

1:00 — The Cottage Industry: A Multitude of Hazards

**#62** M. MCCANN  
Art Hazard Resource Center  
New York, NY

1:20 — The Uses and Limitations of Cost-Benefit Analyses in Decision Making  
Concerning Chemicals and Occupational Health

**#63** EILEEN CRENSHAW  
USDOL/OSHA  
Philadelphia, PA

1:40 — The Federal Worker and Occupational Safety and Health Act of 1970

**#64** R. WEIDNER  
NIOSH  
Cincinnati, OH

2:00 — Status of Employee Rights to Access to Medical, Chemical and Monitoring Data

**#65** KATHLEEN O'LEARY  
USDOL  
Philadelphia, PA

2:20 — Occupational Health Provisions in Labor Contracts

**#66** CLAUDIA MILLER  
United Steel Workers of America  
Pittsburgh, PA

2:40 — The Increasing Role of Union and Labor Education in Occupational Health

**#67** T. A. RICHARD  
University of Wisconsin Extension, School for Workers  
Madison, WI

3:00 — Discussion of Papers Presented

**#68** STANLEY ELLER  
University of Cincinnati  
Cincinnati, OH

3:30 — VISIT EXHIBITS ..... **Imperial Ballroom**

4:00 — Cummings Memorial Lecture ..... **Grand Ballroom**

JOHN A. ZAPP, JR.

**TUESDAY AFTERNOON, MAY 24**  
**Bayou II**  
**HISTORY OF INDUSTRIAL HYGIENE**

**Session Arranger:**

BOBBY F. CRAFT  
NIOSH  
Cincinnati, OH

**Session Chairman:**

HERBERT T. WALWORTH  
Fallbrook, CA

**Monitor:**

DAVID S. SUNDIN  
NIOSH  
Cincinnati, OH

1:00 — The History of the USPHS Programs in

**#69** Industrial Hygiene  
HENRY N. DOYLE  
Washington, D.C.

1:30 — The History of ACGIH and AIHA

**#70** CHARLES D. YAFFE  
Berkeley, California

2:00 — The History of Ventilation in Industrial Hygiene

**#71** KENNETH E. ROBINSON  
Mears, Michigan

2:30 — Discussion

3:30 — VISIT EXHIBITS ..... **Imperial Ballroom**

4:00 — Cummings Memorial Lecture ..... **Grand Ballroom**  
JOHN A. ZAPP, JR.

**TUESDAY AFTERNOON, MAY 24**  
**University Room**  
**IONIZING RADIATION**

**Session Arranger:**

D. A. WAITE  
 Battelle Memorial Institute  
 Richland, WA

**Session Chairman:**

R. G. THOMAS  
 Los Alamos Scientific Lab.  
 Los Alamos, NM

**Monitor:**

D. A. WAITE

- 1:00 — An Evaluation of Occupational Radiation Hazards from  
**#72** Industrial Radiation Sources  
 WILLIAM E. MURRAY  
 NIOSH  
 Cincinnati, OH
- 1:20 — Health Physics and Industrial Hygiene Considerations in Nuclear  
**#73** Reactor Decontamination  
 R. A. OLSON, S. K. NORWOOD  
 The Dow Chemical Co.  
 Midland, MI
- 1:40 — Radiation and Safety Engineering for Contract Research  
**#74** B. V. ANDERSEN  
 Battelle Northwest Labs  
 Richland, WA
- 2:00 — The Industrial Hygiene of Generally Licensed Radiation Sources  
**#75** HENRY T. MILLER  
 Gulf Science & Technology Co.  
 Pittsburgh, PA
- 2:20 — A Stream Monitor Control System for Widely Varying Flows  
**#76** T. W. OAKES, E. D. GUPTON, K. E. SHANK  
 Oak Ridge National Lab.  
 Oak Ridge, TN
- 3:00 — VISIT EXHIBITS..... Imperial Ballroom
- 4:00 — Cummings' Memorial Lecture..... Grand Ballroom  
 JOHN A. ZAPP, Ph.D.

## WEDNESDAY MORNING, MAY 25

### Bayou I

## AEROSOL TECHNOLOGY

#### Session Arrangers:

MARVIN I. TILLERY  
Los Alamos Scientific Laboratory  
Los Alamos, NM  
OWEN R. MOSS  
Battelle Pacific Northwest Laboratories  
Richland, WA

#### Session Chairman:

KLAUS WILLEKE  
University of Cincinnati Medical Center  
Kettering Laboratory  
Cincinnati, OH

#### Monitors:

JUDSON L. KENOYER  
LARRY MURDOCK  
Air Pollution Health Effects Laboratory  
University of California at Irvine  
Irvine, CA

8:00 — Cascade Impactor Data Analysis

#77 BRIAN V. MOKLER  
Inhalation Toxicology Research Institute  
Albuquerque, NM

8:20 — THE Slit Jet Virtual Cascade Impactor, Operating Characteristics and  
#78 Application to Sampling and Aerosol Generation

G. J. NEWTON, H. C. YEH, S. V. TEAGUE, R. CARPENTER, D. TALLEY, R. PEELE  
Inhalation Toxicology Research Institute  
Albuquerque, NM

8:40 — A 5-Stage Round Jet Virtual Cascade Impactor Suitable for Stack Sampling

#79 DANIEL TALLEY  
Los Alamos Scientific Laboratory  
Los Alamos, NM

9:00 — Use and Limitations of In-Stack Impactors

#80 DALE A. LUNDGREN, W. DAVID BELFOUR  
University of Florida  
Gainesville, FL

9:20 — Impactors with Respirable Cut-Off Characteristics

#81 VIRGIL A. MARPLE  
University of Minnesota  
Minneapolis, MN

9:40 — A Simulator for Aerosol Deposition in the Human Respiratory Tract

#82 J. W. ROBERTS, E. B. BARR, H. C. YEH  
Inhalation Toxicology Research Institute  
Albuquerque, NM

10:00 — VISIT EXHIBITS ..... Imperial Ballroom

10:30-12:00 Noon—AIHA BUSINESS MEETING ..... International Ballroom

## WEDNESDAY MORNING, MAY 25

### Emerald Ballroom

#### AIR POLLUTION

##### Session Arranger:

DANIEL LILLIAN  
ERDA  
Washington, D.C.

##### Session Chairman:

LES ANDREWS  
Union Carbide Corporation  
New York City, NY

##### Monitor:

NEIL JURINSKI  
Stanford Research Institute  
Arlington, VA

##### 8:00 — Statistical Properties of Industrial Air Sampling Strategies

#83 D. H. BUDENAERS, K. A. BUSCH, N. A. LEIDEL  
Systems Control, Inc.  
Palo Alto, CA

R. D. SOULE  
Clayton Environmental Consultants, Inc.  
Southfield, MI

##### 8:20 — Pollutants From the Halocarbon Industry

#84 HANWANT B. SINGH, D. P. FOWLER  
Stanford Research Institute  
Menlo Park, CA

##### 8:40 — An Assessment of Sulfate Emissions from Coal and Oil-Fired Boilers

#85 J. B. HOMOLYA, H. M. BARNES, J. L. CHENEY  
U.S. Environmental Protection Agency  
Research Triangle Park, NC

##### 9:00 — A Field Portable Mass Spectrometer for Monitoring Organic Vapors

#86 R. W. MEIER  
U.S. Army Environmental Hygiene Agency  
Aberdeen Proving Ground, MD

##### 9:20 — Carbon Monoxide From Idling Cars in Attached Garages

#87 BENJAMIN LINSKY, GEORGE CROSS  
West Virginia University  
Morgantown, WV

##### 9:40 — Testing for Atmospheric Mutagens-Design of Air Supply System

#88 O. WHITE, Jr., A. H. SPARROW, L. A. SCHAIRER  
Brookhaven National Laboratory  
Upton, Long Island, NY

10:00 — VISIT EXHIBITS ..... Imperial Ballroom

10:30-12:00 Noon — AIHA BUSINESS MEETING ..... International Ballroom



**WEDNESDAY MORNING, MAY 25**

**Bayou II**

**ANALYTICAL CHEMISTRY/CHARCOAL ADSORBENT TUBES**

**Session Arranger:**

JAMES O. JACKSON  
Gulf Oil Corp.  
Pittsburgh, PA

**Session Chairman:**

AILEEN T. COMPTON  
Polaroid Corp.  
Cambridge, MA

**Monitor:**

FRED I. GRUNDER	JOAN A. WRONSKI
Bethlehem Steel Corp.	Lumberman's Mutual Casualty Co.
Bethlehem, PA	Long Grove, IL

8:00 — Reliability of Charcoal Tubes to Sample and Analyze for  
#89      Mercury Vapor in Air  
          B. H. HAAS  
          NIOSH  
          Cincinnati, OH

8:20 — Monitoring Personal Exposure to Ethylene Oxide in the  
#90      Occupational Environment  
          A. H. QAZI, N. H. KETCHAM  
          Union Carbide Corp.  
          South Charleston, WV

8:40 — The Determination of Gaseous Contaminants in Air Samples by Adsorption/  
#91      Thermal Desorption Technique  
          R. S. THOMAS, R. C. LAO  
          Environment Canada  
          Ottawa, Canada

9:00 — Phase Equilibrium Method for Determination of Desorption Efficiencies  
#92      R. A. DOMMER  
          Dow Chemical, USA  
          Midland, MI

9:20 — The Filtration Efficiency of Organic Vapor Samplers for Particulates  
#93      C. I. FAIRCHILD, M. I. TILLERY  
          Los Alamos Scientific Laboratory  
          Los Alamos, NM

9:40 — Preparation of Binary Mixtures of Organic Vapors Using an  
#94      Injection Controlled Test Atmosphere System. Calculation of  
          Efficiencies Obtained on Charcoal Sampling Tubes  
          C. D. GOYANES  
          Servicio Social De Higiene y Seguridad del Trabajo  
          Instituto Territorial de Madrid  
          Torrelaguna, Madrid, Spain

10:00 — VISTIT EXHIBITS ..... **Imperial Ballroom**

10:30-12:00 Noon—AIHA BUSINESS MEETING ..... **International Ballroom**

## WEDNESDAY MORNING, MAY 25

### University Room

### ERGONOMICS

#### Session Arranger:

JERRY L. PURSWELL  
University of Oklahoma  
Norman, OK

#### Session Chairman:

D. B. CHAFFIN  
University of Michigan  
Ann Arbor, MI

#### Monitor:

G. HERRIN  
Univ. of Michigan  
Ann Arbor, MI

8:00 — Effect of Air Movement on Physiological Responses During Work in Heat

#95 F. DUKES—DOBOS  
NIOSH  
Cincinnati, OH  
E. KAMON, J. HODGSON  
Noll Laboratory  
Penn State Univ.  
University Park, PA

8:25 — Simplified Decision Rules for Heat Stress Work Practices

#96 JERRY D. RAMSEY  
Texas Tech. University  
Lubbock, TX

8:50 — Physiological Testing of Fire-Fighter Protective Clothing

#97 PETER REISCHL  
Univ. of Southern California  
Los Angeles, CA  
UWE REISCHL  
Univ. of California, Irvine  
Irvine, CA

9:15 — Fire-Fighter Heat Stress

#98 PETER REISCHL  
Univ. of Southern California  
Los Angeles, CA  
UWE REISCHL  
Univ. of California, Irvine  
Irvine, CA

9:35 — Ergonomic Health and Safety Problems of Professional Fire Fighters

#99 L. L. HOAG, R. RATLIFF  
University of Oklahoma  
Norman, OK

10:30-12:00 Noon—AIHA BUSINESS MEETING ..... International Ballroom

## WEDNESDAY MORNING, MAY 25

### Grand Ballroom

### RESPIRATOR TECHNOLOGY

#### Session Arranger:

ROBERT J. BARGHINI, SR.  
3M Co.  
St. Paul, MN

#### Session Chairman:

J. D. LEIGH  
North American Rockwell  
Rocky Flats, CO

#### Monitor:

J. M. WHITE  
Atomic Energy of Canada  
Chalk River, Ontario

- 8:00 — Reproducibility of Respirator Protection Factors  
#100 J. D. GRIFFIN, JR., D. G. MacDONNEL  
Los Alamos Scientific Laboratory  
Los Alamos, NM
- 8:20 — Radiiodine Canister Criteria Development  
#101 D. C. GRAY, G. O. WOOD, G. J. VOGT, D. D. DOUGLAS  
Los Alamos Scientific Laboratory  
Los Alamos, NM
- 8:40 — Field Testing and Training of Personnel in Proper Respirator Use  
#102 L. H. PACKARD, H. L. BRADY, O. F. SCHUMM  
Dow Chemical Co.  
Freeport, TX
- 9:00 — An Oxygen Apparatus for Emergency Escape  
#103 R. L. STEIN, E. E. BUBAN  
U.S. Bureau of Mines  
Pittsburgh, PA
- 9:20 — An Evaluation of CO<sub>2</sub> Scrubbers Used in Long Duration Self-Contained  
#104 Breathing Apparatus  
N. KYRIAZI, T. BERNARD  
U.S. Bureau of Mines  
Pittsburgh, PA
- 9:40 — A Test Bench for Routine Checkout of Airline Respirators and  
#105 Self-Contained Breathing Apparatus  
G. A. HERMENS, H. J. McDERMOTT  
Shell Oil Co.  
Walnut Creek, CA
- 10:00 — VISIT EXHIBITS ..... Imperial Ballroom
- 10:30—12 Noon — AIHA BUSINESS MEETING ..... International Ballroom

## WEDNESDAY MORNING, MAY 25

International Ballroom

### TOXICOLOGY — A SYMPOSIUM

#### Session Arranger:

CLAUDE H. WOLF  
Nalco Chemical Co.  
Oakbrook, IL

#### Session Chairman:

JOHN W. GOODE  
Industrial Bio-Test Labs  
Decatur, IL

#### Monitor:

J. R. GRAPENTHIEN  
Nalco Chemical Co.  
Oak Brook, IL  
GERALD S. COOPER  
DeSoto Chemical Co.  
Des Plaines, IL

- 8:00 — Renal Effects of Long Term Industrial Lead Exposure  
#106 P. B. HAMMOND, S. LERNER, SANDRA RODA, RITA PRINZBACH  
Univ. of Cincinnati, Med. Center  
Cincinnati, OH
- 8:20 — Carcinogenic Activity & Metabolism of 4,4' — Dinitrophenyl  
#107 S. LAHAM, J. P. FARANT, IRMA A. MARINO, H. C. GRICE  
Environmental Health Directorate  
Ottawa, Canada
- 8:40 — Semichronic Inhalation of Antimony Trioxide  
#108 W. D. WATT, E. V. PERRIN, E. J. KERFOOT  
Wayne State Univ. School of Medicine  
Detroit, MI
- 9:00 — Embryo & Fetotoxicity of Inhaled Benzene in Rats  
#109 J. D. GREEN, S. LASKIN\*  
NYU Med. Center  
New York, NY  
B. K. J. LEONG  
International Res. & Dev. Corp.  
Mattawan, MI
- 9:20 — Acute and Chronic Inhalation Studies in Rats with Epichlorohydrin  
#110 G. V. KATZ, G. M. RUSCH, A. R. SELLAKUMAR, M. KUSCHNER, S. LASKIN\*  
NYU Medical Ctr.  
New York, NY
- 9:40 — Inhalation Toxicity of Aluminum Chlorohydrate  
#111 F. L. CAVENDER, W. H. STEINHAGEN, D. A. McLAURIN, III  
Becton, Dickinson & Co.  
Research Triangle Park, NC  
B. Y. COCKRELL  
Experimental Pathology Laboratories, Inc., Herndon, VA

10:00 — VISIT EXHIBITS ..... Imperial Ballroom  
10:30-12:00 Noon — AIHA BUSINESS MEETING ..... International Ballroom

\*Deceased

**WEDNESDAY AFTERNOON, MAY 25**

**Bayou I**

**AEROSOL TECHNOLOGY**

**Session Arrangers:**

MARVIN I. TILLERY  
Los Alamos Scientific Laboratory  
Los Alamos, NM  
OWEN R. MOSS  
Battelle Pacific Northwest Laboratories  
Richland, WA

**Session Chairman:**

HARRY J. ETTINGER  
Los Alamos Scientific Laboratory  
Los Alamos, NM

**Monitors:**

G. W. WOOD  
Los Alamos Scientific Laboratory  
Los Alamos, NM  
C. I. FAIRCHILD  
Los Alamos Scientific Laboratory  
Los Alamos, NM

1:00 — Test Data on a Cyclone for Respirable Dust Sampling

#112 WALTER JOHN, GEORGE P. REISCHL  
California Department of Health  
Berkeley, CA

1:20 — The Characterization of Short Circuit Flow in a Miniature Stairmand Design

#113 Cyclone Dust Collector  
JOHN M. HOCHSTRASSER, B. E. SALTZMAN, W. LICHT, H. AYER  
G. D. Searle & Co. L. J. SCHAFER  
Skokie, IL Kettering Laboratory  
Cincinnati, OH

1:40 — Downstream Air Flow Characteristics and Cyclone Performance

#114 HOWARD E. AYER, KENNETH TROUTMAN  
Kettering Laboratory  
Cincinnati, OH

2:00 — Evaluation of Two Light-Scattering Respirable Dust Monitors

#115 EILEEN M. THOMPSON, HARRY N. TREAFIS, THOMAS F. TOMB  
Mining Enforcement and Safety Administration  
Pittsburgh, PA

2:20 — Performance of a Respirable Mass Monitor  
#116 J. C. VOLKWEIN, P. T. BEHUM

U.S. Bureau of Mines  
Pittsburgh, PA

2:40 — Comparison of Respirable Coal Mine Dust Concentrations Measured with an  
#117 MRE and a Newly Developed Two-Stage Impactor Sampler

HARRY N. TREAFTIS, THOMAS F. TOMB, CHARLES D. TAYLOR  
Mining Enforcement and Safety Administration  
Pittsburgh, PA

3:00 — VISIT EXHIBITS ..... Imperial Ballroom

4:00 — Yant Memorial Lecture ..... Grand Ballroom  
SIBTE H. ZAIDI, Ph.D.  
Lucknow, India

## WEDNESDAY AFTERNOON, MAY 25

### University Room

### ERGONOMICS

#### Session Arranger:

JERRY L. PURSWELL  
University of Oklahoma  
Norman, OK

#### Session Chairman:

JERRY D. RAMSEY  
Texas Tech. University  
Lubbock, TX

#### Monitor:

E. KAMON  
Penn State University  
University Park, PA

- 1:00 — An Evaluation of Manual Materials Handling Hazards  
**#118** D. B. CHAFFIN, G. D. HERRIN, W. M. KEYSERLING  
The University of Michigan  
Ann Arbor, MI
- 1:20 — Lifting-Pushing-Pulling Techniques — Using Localized Training Films  
**#119** P. A. SONNTAG  
Western Electric Co.  
Norcross, GA
- 1:40 — Continuous Recording and Analysis of Physiologic Responses at Work  
**#120** R. GOLDSMITH, C. O'BRIEN, W. SMITH, G. L. E. TAN  
University of London  
London, England
- 2:00 — Wholebody Vibration Factor in Truck Driver Health  
**#121** G. J. GRUBER, E. K. CALVERT  
Southwest Research Institute  
San Antonio, TX
- 2:20 — Assigning Persons to Strenuous Jobs: Do We Need an Assessment of  
Dynamic Strength ?  
**#122** E. K. H. KROEMER  
Wayne State University  
Detroit, MI
- 2:40 — Some Applications of Ergonomics at Eastman Kodak Co.  
**#123** W. J. NIELSEN  
Eastman Kodak Co.  
Rochester, NY
- 3:00 — VISIT EXHIBITS ..... **Imperial Ballroom**
- 4:00 — Yant Memorial Lecture ..... **Grand Ballroom**  
SIBTE H. ZAIDI, Ph.D.  
Lucknow, India

## WEDNESDAY AFTERNOON, MAY 25

Grand Ballroom

### RESPIRATOR TECHNOLOGY

#### Session Arranger:

ROBERT BARGHINI  
3M Co.  
St. Paul, MN

#### Session Chairman:

J. M. WHITE  
Atomic Energy of Canada, Ltd.  
Chalk River, Ontario

#### Monitors:

J. A. PRITCHARD  
Los Alamos Scientific Lab.  
Los Alamos, NM  
H. J. McDERMOTT  
Livermore, CA

1:00 — Respirator Program for Diversified Corporation that Meets OSHA Requirements  
#124 R. A. SPIELMAN, J. W. FEUK  
3M Company  
St. Paul, MN

1:20 — A Mobile Fitting and Training Classroom for Instruction Personnel in  
#125 Respirator Use  
D. H. NULL, S. A. GILGEN, L. G. MUSEN, H. W. STROSCHEN  
Aerojet Nuclear Company  
Idaho Falls, ID

1:40 — The Effects of the Variation of Relative Humidity Within the  
#126 Specifications of Part II on the Service Life of Cartridges  
N. J. MCGINNIS, G. L. FAWCETT  
NIOSH  
Morgantown, WV

2:00 — The Statistical Performance of a Current Isoamyl Acetate  
#127 Screening Test for Respirator Fit  
W. A. BURGESS  
Harvard Univ. — School of Public Health  
Boston, MA  
N. A. LEIDEL  
NIOSH  
Cincinnati, OH

2:20 — Respirator Cartridge Efficiency for Airborne Arsenic: A Preliminary Report  
#128 T. J. SMITH, M. O. VARNER, D. A. ROBBINS, R. D. PUTNAM  
Univ. of Utah Medical Center  
Salt Lake City, UT

2:40 — Respirator Protection Factors for Loose-Fitting  
#129 Supplied-Air Respirators  
D. D. DOUGLAS, P. HESCH  
Los Alamos Scientific Laboratory  
Los Alamos, NM

3:00 — VISIT EXHIBITS ..... Imperial Ballroom

4:00 — Yant Memorial Lecture ..... Grand Ballroom  
SIBTE H. ZAIDI, Ph.D.



**WEDNESDAY AFTERNOON, MAY 25**

**International Ballroom**

**TOXICOLOGY — A SYMPOSIUM**

**Session Arranger:**

CLAUDE H. WOLF  
Nalco Chemical Co.  
Oakbrook, IL

**Session Arranger:**

CARROL S. WEIL  
Carnegie-Mellon Institute of Research  
Pittsburgh, PA

**Monitor:**

C. W. BERNDT  
Industrial Bio-Test Labs  
Northbrook, IL

**1:00 — Opening Remarks**

C. S. WEIL  
Carnegie-Mellon Institute of Research  
Pittsburgh, PA

**1:15 — Accreditation of Toxicology Facilities**

**#130** R. T. DREW  
Brookhaven Nat'l. Labs.  
Upton, NY

**1:45 — Certification of Professionals in Toxicology**

**#131** R. B. FORNEY  
Indiana Univ. School of Medicine  
Indianapolis, IN

**2:15 — Good Laboratory Practices in Toxicology**

**#132** C. S. WEIL  
Carnegie Mellon Institute  
Pittsburgh, PA

**3:00 — VISIT EXHIBITS** ..... **Imperial Ballroom**

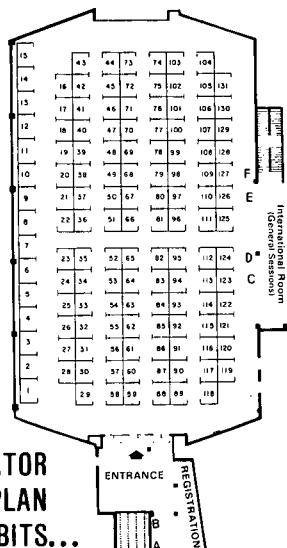
**4:00 — Yant Memorial Lecture** ..... **Grand Ballroom**  
SIBTE H. ZAIDI, Ph.D.

# AMERICAN INDUSTRIAL HYGIENE 1977 CONFERENCE

Fairmont Hotel  
New Orleans, La.

Exhibit Days:  
Tuesday, Wednesday,  
Thursday (May 24-26)

USE THIS LOCATOR  
DIAGRAM TO PLAN  
YOUR TOUR OF EXHIBITS...



- 1—Aeropause, Inc.
- 2—B & K Instruments, Inc.
- 3—Kurz Instruments
- 4—Consolidated Biomedical Laboratories
- 5—Wahmann Manufacturing Company
- 6—POISONLAB
- 7—Reuter-Stokes Canada Limited
- 8—Racal Airstream, Inc.
- 10—Castle Associates
- 11—12—American Optical Corp.
- 13—Analytical Instrument Dev. Inc.
- 14—Unifab Corporation
- 15—SKC Inc.
- 16—18—Survival
- 19—Amoco Computer Services Co.
- 20—21—BioMarine Industries, Inc.
- 22—Calibrated Instruments, Inc.
- 23—E-A-R Corporation
- 24—Bilsom International, Inc.
- 25—Durafab, Inc.
- 26—Mast Development Co.
- 27—Waters Associates, Inc.
- 28—Dynamation, Inc.
- 29—Eckel Industries
- 30—Spectrex Corporation
- 31—Buchler Instruments
- 32—The Bureau of National Affairs, Inc.
- 33—35—National Environmental Instruments, Inc.
- 36—37—Wilson Products, Div. ESB, Inc.
- 38—Publishers for Conventions, Inc.
- 39—Del Tech Engineering, Inc.
- 40—LFE Environmental Analysis Lab.
- 41—Frontier Enterprises, Inc.
- 42—Sierra Instruments, Inc.

- 43—L.S.E. Corp.
- 44—46—Century Systems Corporation
- 47—Millipore Corporation
- 48—Gas Tech, Inc.
- 49—51—National Graeger Inc.
- 52—Ainor Instrument Company
- 53—United States Safety Service Co.
- 54—Calgon Commercial Division
- 55—Vitalograph Medical Instrumentation
- 56—Quest Electronics
- 57—58—InterScan Corporation
- 59—61—Mine Safety Appliances Co.
- 62—Levitt-Safety Limited
- 63—Met Path, Inc.
- 64—Glendale Optical Company, Inc.
- 65—Kutol Products Co.
- 66—67—Du Pont Company—Applied Tech.
- 68—Professional Health Services, Inc.
- 69—BGI Incorporated
- 70—Hager Laboratories, Inc.
- 71—Environmental Technology Corp.
- 72—73—Scott Aviation
- 74—Met One, Inc.
- 75—St. Paul Fire & Marine Insurance Co.
- 76—Gollob Analytical Service Corp.
- 77—Thermo-Systems, Inc.
- 78—79—Robbins Aviation, Inc.
- 80—81—Energetics Science, Inc.
- 82—83—Anatole J. Sipin Co., Inc.
- 84—Millisk of America, Inc.
- 85—86—Du Pont Company
- 87—Tag Construction Co., Inc.
- 88—International Sensor Technology

- 88—90—Robertshaw Controls Co.
- 91—92—Wilks Scientific Corporation
- 93—General Electric Company
- 94—95—GCA/Technology Division
- 96—Air Techniques Incorporated
- 97—West Chemical Products, Inc.
- 98—Environmental Health Laboratory
- 99—Marion Health & Safety, Inc.
- 100—103—Norton Safety Products
- 104—Sugar Beet Products Co.
- 105—CEA Instruments, Inc.
- 106—Microbiological Associates
- 107—Bendix Environmental & Process Instruments Div.
- 108—HNU Systems
- 109—Gelman Instrument Company
- 110—Bacharach Instrument Co.
- 111—Enmet Corporation
- 112—Pollution Engineering News
- 113—115—3M Company
- 116—Supelco, Inc.
- 117—118—Gen Rad Inc.
- 119—121—MDA Scientific, Inc.
- 122—Anderson 2000 Inc.
- 123—124—Edmont-Wilson
- 125—Research Appliance Company
- 126—Absor, Inc.
- 127—Hearing Control, Inc.
- 128—129—Controls for Environmental Pollution, Inc.
- 130—131—U.S. Dept. of Labor, Occupational Safety & Health Admin.

- A—American Industrial Hygiene Assn.
- B—ACEIH
- C—U.S. Environmental Protection Agency
- D—Bureau of Radiological Health — FDA

# AMERICAN INDUSTRIAL HYGIENE 1977 CONFERENCE

## exhibitors listing . . .

May 22-27  
Fairmont Hotel  
New Orleans, La.

Exhibit Days:  
Tuesday, Wednesday,  
Thursday (May 24-26)

- booth numbers
- exhibitors
- products

126

**Abcor, Inc.**  
850 Main Street, Wilmington, MA 01887  
Abcor, Inc. will exhibit its GASBADGE™ dosimeters and analysis services for a variety of toxic gases and vapors

B

**ACGIH**  
P.O. Box 1937, Cincinnati, OH 45201

1

**Aeropulse, Inc.**  
1574 Bridgewater Rd., Cornwells Heights, PA 19020

96

**Air Techniques Incorporated**  
1717 Whitehead Rd., Baltimore, MD 21207

52

**Alnor Instrument Company**  
7301 N. Caldwell Ave., Niles, IL 60648  
Will feature the Alnor Velometer, the air-velocity measuring instrument for balancing commercial and industrial ventilating and exhausting systems. Also featured will be the Alnor type 8125 "Air-Gard", a small permanently installed instrument for continuously monitoring the face-velocity of spray booths and fume hoods

A

**American Industrial Hygiene Association**  
66 S. Miller Road, Akron, OH 44313

11 & 12

**American Optical Corp.**  
Safety Products Division, 14 Mechanic Street, Southbridge, MA 01550

AO NIOSH-Certified respirators, plano and prescription safety glasses, safety goggles, face shields, safety caps, welding helmets, hearing protectors, unit first aid kits, SPHYGMATIC™ Blood Pressure Indicator.

19

**Amoco Computer Services Company**  
200 E. Randolph Drive, Chicago, IL 60601

13

**Analytical Instrument Development Inc.**  
Rt. 41 - Newark Rd., Avondale, PA 19311

122

**Andersen 2000, Inc.**  
P. O. Box 20769, Atlanta, GA 30320  
Andersen Air Samplers. Complete line of Particle Sizing inertial impactors for use in all sampling environments.

69

**BGI Incorporated**  
58 Gurnan St., Waltham, MA 02154  
Instruments for Aerosol Science.

2

**B & K Instruments, Inc.**  
511 West 164th St., Cleveland, OH 44142  
Will introduce an automatic recording audiometer and a compact Precision Sound Meter/Octave Analyzer.

110

**Bacharach Instrument Co.**  
2300 Leghorn St., Mt. View, CA 94043  
Exhibit will be working instrumentation of both battery powered and line powered varieties. Members of our Sales Engineering and Application Engineering staffs will be present.

107

**Bendix Environmental & Process Instruments Div.**  
P.O. Drawer 831, Lewisburg, WV 24901  
Dedicated gas chromatographs, designed for desorption and analysis of concentration tubes, Flasher, Hydrogen generator, and personnel monitoring pump.

24

**Bilsom International, Inc.**  
11800 Sunrise Valley Drive, Reston, VA 22091

20 & 21

**BioMarine Industries, Inc.**  
45 Great Valley Center, Malvern, PA 19355  
Will introduce the Model 500 Carbon Monoxide Detector which complements its oxygen and combustible gas detection instruments. It will also display the BioPak 45, a lightweight, long duration breathing apparatus.

31

**Buchler Instruments**

1327 16th St., Fort Lee, NJ 07024

Hematofluor ZP - a portable fluorometer for field and lab work, designed to give instant blood analysis for lead poisoning.

32

**The Bureau of National Affairs, Inc.**

1231 25th Street, NW, Washington, D.C. 20037

Display of environment and safety notification and reference services.

D

**Bureau of Radiological Health - FDA**

5600 Fishers Lane, Rockville, MD 20852

54

**Calgon Commercial Division**

7501 Page St., St. Louis, MO 63166

Will display Calgon's complete line of skin care products, including lotions, powders, creams and barrier types. Also featured will be a complete line of industrial cleaning compounds.

22

**Calibrated Instruments, Inc.**

731 Saw Mill River Road, Ardsley, NY 10502

Showing air and gas collection system, including a small, battery operated Personal Pump. Also, special (US Patent #3,907,164) gas sampling bags for collection of integrated air and gas samples, plus special calibrated devices used in precision calibration of all gas analyzers and an advanced model of a Pure Air Monitor with built-in programmable alarm system.

10

**Castle Associates**

Div. of the Huff Company, Inc. P. O. Box 296, 515 Waverly Court,

Deerfield, IL 60015

Shown will be 1) a range of type 2 industrial sound level meters, Some accepting octave band plug-on filter sets. 2) A wide range of type 1 precision instruments. 3) A range of type 3 instruments and some noise control equipment.

105

**CEA Instruments, Inc.**

15 Charles Street, Westwood, NJ 07675

A new line of ac/dc Portable Air Monitors for the Analysis of SO<sub>2</sub>, NO<sub>2</sub>, NO<sub>x</sub>, NH<sub>3</sub>, Cl<sub>2</sub>, TDI, HCN, HCHO, H<sub>2</sub>S and other parameters for which a wet chemical colorimetric procedure is available.

44-46

**Century Systems Corporation**

P. O. Box 133, Arkansas City, KS 67005

Portable and fixed FID Direct reading Organic Vapor Analyzers (OVA's). Programmed Thermal Desorbers. Personal Sampling Pumps and Sample Collection Tubes for TWA air sampling.

4

**Consolidated Biomedical Laboratories**

P. O. Box 2289, Columbus, OH 43216

Consolidated Biomedical Laboratories, Inc., a subsidiary of Rohm and Haas Company, provides clinical laboratory services, including analyses of human fluids and air samples.

128-129

**Controls for Environmental Pollution, Inc.**

1925 Rosina Street, Santa Fe, NM 87501

Todd, Ludlum, CEP, three corporations blending technical skills to offer a complete service package to industry.

39

**Del Tech Engineering, Inc.**

Century Park, New Castle, DE 19720

66-67

**Du Pont Company - Applied Tech. Div.**

1007 Market Street, Wilmington, DE 19898

See the latest innovations in audio dosimetry and air sampling systems. . . part of Du Pont's growing line of Industrial Hygiene Products.

85-86

**Du Pont Company**

1007 Market St., Wilmington, DE 19898

25

**Durafab, Inc.**

Box 658, Cleburne, TX 76031

Manufacturers of Hazard/Guard limited use coveralls, nuclear reactor suits, lab coats, shirts and pants, splash suits for chemical handling, hoods, shoe covers, aprons and other related items of protective clothing.

28

**Dynamation, Inc.**

168 Enterprise Drive, P. O. Box 2253, Ann Arbor, MI 48106

23

**E-A-R Corporation**

376 University Avenue, Westwood, MA 02090

Displaying and available for sampling, E-A-R Plugs for personal hearing protection. Also literature and samples of products for vibration isolation and industrial noise damping.

29

**Eckel Industries**

155 Fawcett Street, Cambridge, MA 02138

A comprehensive exhibit of Noise Control Products and Systems and Audiometric Booths for hearing testing.

123-124

**Edmont-Wilson**

1300 Walnut Street, Coshocton, OH 43812

Edmont-Wilson will be displaying safety gloves, protective clothing and safety monitoring instrumentation, for detection of oxygen levels and hazardous gases.

80-81

**Energetics Science, Inc.**

85 Executive Blvd., Elmsford, NY 10523

111

**Enmet Corporation**

2308 S. Industrial Highway, Ann Arbor, MI 48104

ENMET Corporation is a manufacturer of gas and vapor detectors for industrial health and safety. Equipment monitors for toxic gases, combustible gases and oxygen deficiency.

98

**Environmental Health Laboratory**

P. O. Box 6195, Macon, GA 31208

Staff will be on hand to answer questions about industrial hygiene sampling and analysis. Environmental Health Laboratory is accredited by the American Industrial Hygiene Association.

71

**Environmental Technology Corp.**

30405 Solon Road, Cleveland, OH 44139

AUTOTECH — the first major change in audiometric testing in 30 years.

# HC EXHIBITORS

## Frontier Enterprises, Inc.

101 Acoma SE, Albuquerque, NM 87108

Instruments for quantitative respirator fit testing and in-place filter testing.

8

## GasTech, Inc.

31 Fairchild Drive, Mountain View, CA 94043

94-95

## GCA/Technology Division

Burlington Road, Bedford, MA 01730

GCA will be exhibiting its full line of particle monitors, for direct readout of dusts, smoke, fumes or liquid aerosols.

109

## Gelman Instrument Company

600 South Wagner Rd., Ann Arbor, MI 48106

Exhibiting a broad line of membrane filters, glass fiber filters, filter holders (In-Line and Open) for air and particulate analyses. Also on display will be the NEW Particle Size Micrometer and Analyzer.

93

## General Electric Company

50 Fordham Rd., Wilmington, MA 01887

Hydrogen Generators for Gas Chromatograph and Flame Ionization Detectors. Electrochemical Sensors - Carbon Monoxide and Oxides of Nitrogen; Models: Continuous Area Monitor (CO), Portable Area Monitor (CO), Pocket Dosimeter (CO). Units can be adapted for operations on alcohol, sulphur dioxide, hydrogen, etc.

117-118

## Gen Rad Inc.

300 Baker Ave., Concord, MA 01742

Exhibit will feature a variety of sound measuring instruments including an all-new precision sound-level meter and octave-band analyzer.

64

## Glendale Optical Company, Inc.

130 Crossways Park Drive, Woodbury, NY 11797

Will feature a full line of laser protective goggles, NIOSH approved respirators and hearing protectors.

76

## Gollob Analytical Service Corp.

47 Industrial Road, Berkeley Heights, NJ 07922

Gollob Analytical Service Corp. (G.A.S. Corp.): AIHA accredited analytical and consulting laboratory will provide information and brochures outlining their services. Technical people will be on-hand to answer specific analytical questions and/or discuss any industrial hygiene problems.

70

## Hager Laboratories, Inc.

12000 E. 47th Avenue, Denver, CO 80239

Hager Laboratories, Inc. provides complete industrial hygiene analytical services including technical information, laboratory analyses of charcoal tube, impinger and membrane filter samples and complete industrial hygiene surveys.

127

## Hearing Control, Inc.

114 West Hiram, Atlanta, TX 75551

Manufacturers of custom fitted ear protectors made from a vinyl, heat cured, anti-fungal material.

108

## HNU Systems

30 Ossipee Road, Newton, MA 02164

88

## International Sensor Technology

Main Office, 3201 South Halladay St., Santa Ana, CA 92705;

National Sales Office, 15626 Silver Ridge Rd., Suite 105, Houston, TX 77090

A line of toxic and combustible gas monitors in different configurations for industry in general and heavy industry in particular, the petrochemical oil, steel and pulp and paper industries

57-58

## Interscan Corporation

20620 Superior Street, Chatsworth, CA 91311

Will exhibit its line of portable analyzers and continuous monitoring systems for CO, SO<sub>2</sub>, H<sub>2</sub>S, NO<sub>2</sub>, NH<sub>3</sub> and Cl<sub>2</sub>.

3

## Kurz Instruments

P. O. Box 849, Carmel Valley, CA 93924

Portable air velocity and mass flow meters and low volume flow controlled air samplers.

65

## Kutol Products Co.

2825 Highland Ave., Cincinnati, OH 45212

43

## L.S.E. Corp.

6 Gill Street, Woburn, MA 01801

62

## Levitt-Safety Limited

33 Laird Drive, Toronto, Ontario, Canada M4G 3S9

A Canadian information booth representing Andersen 2000, Inc. Biomarine Industries, Dasibi Environmental Instruments, Enmet, Corp., General Metals Works Incorp., International Sensor Technology, National Environmental Instruments, Nutech Corp., Scott A.T.O.

40

## LFE Environmental Analysis Laboratories

2030 Wright Avenue, Richmond, CA 94804

119-121

## MDA Scientific, Inc.

808 Busse Highway, Park Ridge, IL 60068

Personal and area monitors, sampling pumps and data evaluation systems for substances such as TDI, phosgene, TDA, ammonia, HCl and hydrazine will be displayed, as will the Airstream Anti-Duct Helmet.

99

## Marion Health & Safety, Inc.

9233 Ward Parkway, Kansas City, MO 64114

26

## Mast Development Company

2212 E. 12th Street, Davenport, IA 52803

Will feature: Oxidant Monitors designed for measuring ozone, bromine, chlorine, fluorine, iodine in OSHA and TLV ranges. Instruments available in self-powered, battery operated or a.c. models. Also calibration systems.

74

## Met One, Inc.

154 San Lazaro, Sunnyvale, CA 94086

63

## Met Path, Inc.

60 Commerce Way, Hackensack, NJ 07606

106

## Microbiological Associates

5221 River Road, Bethesda, MD 20016

47

**Millipore Corporation**

80 Ashby Rd., Bedford, MA 01730

Membrane filters for OSHA/NIOSH compliance testing. Ultrapure water for AA analysis.

59-61

**Mine Safety Appliances Company**

600 Penn Center Blvd., Pittsburgh, PA 15235

Featuring a complete line of Respirators including a new Powered Air Purifying Respirator. Also showing portable and continuous gas detection instruments and hearing conservation devices

49-51

**National Draeger Inc.**

Parkway View Drive, Pittsburgh, PA 15205

Will feature long-duration detector tubes, newly developed detector tubes, a new continuous monitoring pump for use with the long-duration tubes and a new positive pressure demand airline respirator.

33-35

**National Environmental Instruments, Inc.**

P. O. Box 590, Pilgrim Station, Warwick, RI 02888

National Environmental Instruments will be introducing the new Audio Dosimeter System as well as the complete line of personal monitors and accessories.

84

**Nifisk of America, Inc.**

3244 Prospect St., N.W., Washington, D.C. 20007

PLANT VACUUM FOR TOXIC OR NOXIOUS DUSTS, model GA 73 vacuum cleaner for superfine dust and powder, as well as ordinary debris. Ideal for toxic or irritating materials.

100-103

**Norton Safety Products**

200 Plainfield Pike, Cranston, RI 02920

6

**POISONLAB**

Div. of Chemed Corp., 1469 South Holly St., Denver, CO 80222  
POISONLAB, Division of Chemed Corporation, is a full service consulting and analytical toxicology laboratory accredited by AIHA

112

**Pollution Equipment News**

8550 Babcock Blvd., Pittsburgh, PA 15237

POLLUTION EQUIPMENT NEWS - A publication exclusively devoted to pollution control products for air, water, waste and noise

68

**Professional Health Services, Inc.**

83 S. Eagle Rd., Havertown, PA 19083

38

**Publishers for Conventions, Inc.**

1205 Main St., Pittsburgh, PA 15215

Will be distributing the National Conventioneer, a product literature catalog.

56

**Quest Electronics**

510 Worthington Street, Oconomowoc, WI 53066

Exhibit will display sound measurement, analysis and calibration instrumentation for compliance and general scientific purposes

8-9

**Racal Airstream Inc.**

5 Research Place, Rockville, MD 20850

125

**Research Appliance Company**

Route 8, Gibsonsia, PA 15044

Air, water and sound instruments. All equipment manufactured meets standards of ASTM, APCA, EPA, NIOSH, OSHA and FWPCA.

7

**Reuter-Stokes Canada Limited**

465 Dobbie Drive, Cambridge, Ontario, Canada

Displaying a new version of the RSS-211 environmental heat stress monitor with digital display. Faster time of response and compactness are significant features to implement an effective heat stress survey program.

89-90

**Robertshaw Controls Co.**

333 N. Euclid Way, Anaheim, CA 92801

Exhibit will feature the following products: Emergency Escape Devices, Supplied Air Respirators, Self-Contained Breathing Apparatus, Oxygen Resuscitators and Demand Valves.

78-79

**Robbins Aviation, Inc.**

3817 Sante Fe Avenue, Vernon, CA 90058

Self-contained, fully-integrated unit for processing (compressing and purifying) air for respiratory and other uses.

75

**St. Paul Fire & Marine Insurance Co.**

385 Washington St., St. Paul, MN 55102

Environmental Service Analytical Lab - AIHA Accredited (Div. of St. Paul Fire & Marine Insurance Company) Peer, 3rd party and backup testing, equipment rental, industrial hygiene data system, multi-industry problem solving, health hazard identification.

72-73

**Scott Aviation**

225 Erie St., Lancaster, NY 14086

Will exhibit Respiratory Equipment and Portable and Continuous Gas Monitoring Apparatus.

42

**Sierra Instruments, Inc.**

P. O. Box 909, Carmel Valley, CA 93924

Flow controlled particle tag samplers and cascade impactors.

82-83

**Anatole J. Sipin Co., Inc.**

425 Park Avenue South, New York, NY 10016

15

**SKC Inc.**

R.D. 1, #395 Valley View Road, Eighty Four, PA 15330

30

**Spectrex Corporation**

3594 Haven Avenue, Redwood City, CA 94063

Vreeland Spectroscopes for rapid elemental analysis. Particle Counter for particle sizing in liquids (1-99 µm). Electronic pumps for 0-15 lpm flow

104

**Sugar Beet Products Co.**

302 Waller, Box 1387, Saginaw, MI 48605

116

**Supelco, Inc.**

Supelco Park, Bellefonte, PA 16823

# HC EXHIBITORS

**18**  
**Survivair**  
 Division of U. S. Divers, 3323 W. Warner, Santa Ana, CA 92702

**7**  
**ag Construction Co.**  
 P. O. Box 907, Monroeville, AL 36460.  
 For recirculation through KERMAFROL, the only dust collector with permanent, non-plugging HEPA filters that are self-cleaning. Essentially maintenance-free modular systems from 1000 c.f.m. to any size.

**77**  
**Thermo-Systems, Inc.**  
 500 Cardigan Road, St. Paul, MN 55112

**113-115**  
**3M Company**  
 Occupational Health & Safety Products, 3M Center, Bldg. 224-BW, St. Paul, MN 55101  
 3M Occupational Health and Safety Products will introduce three new gas and vapor respirators: NIOSH/MESA approved Organic Vapor Respirator No. 8712, NIOSH/MESA approved Acid Gas Respirator No. 8714 and the Vinyl Chloride Respirator No. 8716 with the end-of-service-life indicator. A special audio-visual educational program entitled "Working Safely with Mercury" will be available for viewing, plus OH&SP's new Softcap System and the entire 3M line of safety products.

**14**  
**Unifab Corporation**  
 5260 Lovers Lane, Kalamazoo, MI 49002

**53**  
**United States Safety Service Co.**  
 1535 Walnut St., P. O. Box 1237, Kansas City, MO 64141  
 Exhibit will contain a full line of hearing protectors, carbon monoxide indicators, salt tablets and an eye, face and head protection line.

**130-131**  
**U.S. Department of Labor, Occupational Safety & Health Administration**  
 200 Constitution Ave., N.W., Washington, DC 20210

**C**  
**U.S. Environmental Protection Agency**  
 U.S. International Environmental Referral Center  
 Washington, DC 20460

**55**  
**Vitalograph Medical Instrumentation**  
 8347 Quivira Rd., Lenexa, KS 66215  
 Vitalograph Spirometer designed for pulmonary screening in industry, calibrated, portable and robust. Emergency Resuscitation Set with resuscitator; instruments for endotracheal intubation and aspiration.

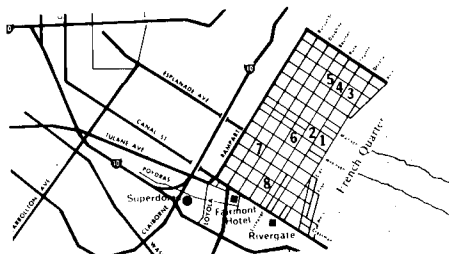
**5**  
**Wahmann Manufacturing Company**  
 10 W. Aylesbury Rd., Timonium, MD 21093  
 An exhibit of inhalation chambers and laboratory animal cages. Factory engineers will be available to discuss standard or special equipment.

**27**  
**Waters Associates, Inc.**  
 34 Maple Street, Milford, MA 01757  
 Rapid determination of isocyanates, PNA's and nitrosamines in industrial atmospheres by high pressure liquid chromatography.

**97**  
**West Chemical Products, Inc.**  
 42-16 West Street, Long Island City, NY 11101  
 Featuring a wide range of washroom products for industry and institutions including hand soaps, lotions, protective creams and their dispensers. Samples and literature available.

**91-92**  
**Wilks Scientific Corporation**  
 140 Water St., S. Norwalk, CT 06856  
 On display will be a complete line of portable and stationary ambient air analyzers for OSHA compliance testing of toxic vapors and gases.

**36-37**  
**Willson Products Div., ESB, Inc.**  
 P. O. Box 622, Reading, PA 19603  
 See Willson Products Division for the latest on NIOSH/MESA Approved Respiratory devices. Also, a complete line of personal safety equipment for all protection needs.



Conference headquarters is located right at the famed French Quarter.

- |                         |                         |
|-------------------------|-------------------------|
| 1 - Jackson Square      | 5 - Gallier House       |
| 2 - St. Louis Cathedral | 6 - Preservation Hall   |
| 3 - Ursuline Convent    | 7 - Hermann Grima House |
| 4 - Beaugregard House   | 8 - Old Absinthe House  |

**THURSDAY MORNING, MAY 26**

**Bayou I**

**AEROSOL TECHNOLOGY & AIR POLLUTION**

**Session Arrangers:**

MORTON LIPPMANN  
New York University Medical Center  
New York, NY  
MARVIN I. TILLERY  
Los Alamos Scientific Laboratory  
Los Alamos, NM

**Session Chairman:**

MORTON LIPPMANN  
New York University Medical Center  
New York, NY

**Monitors:**

EARL O. KNUTSON  
Energy Research & Development Administration  
Health and Safety Laboratory  
New York, NY  
DAVID M. BERNSTEIN  
New York University Medical Center  
New York, NY

8:00 — The New York Summer Aerosol Study (NYSAS) 1976  
#133 THEO J. KNEIP, DAVID BERNSTEIN, MORTON LIPPMANN  
New York University  
New York, NY  
B. LEADERER  
Yale Univ.  
New Haven, CT

8:15 — New York Summer Aerosol — Number Concentrations and Size Distribution  
#134 EARL O. KNUTSON, DAVID SINCLAIR  
USERDA  
New York, NY

8:35 — Size-Mass Distributions of the New York Summer Aerosol  
#135 MORTON LIPPMANN, THEO J. KNEIP, MICHAEL KLEINMAN,  
DAVID BERNSTEIN  
New York Univ. Medical Center  
New York, NY  
BRIAN LEADERER  
Yale University  
New Haven, CT

8:55 — New York Summer Aerosol — Optical Properties  
#136 BRIAN P. LEADERER, DAVE ROMANO, JAN A. J. STOLWIJK  
Yale University  
New Haven, CT



- 9:15 — Characterization of Aerosols Upwind of New York City I. Aerosol Composition  
**#137** PAUL J. LIOY, GEORGE T. WOLFF  
 Interstate Sanitation Comm.  
 New York, NY  
 K. RAHN  
 University of Rhode Island  
 Kingston, RI  
 THEO J. KNEIP, DAVID M. BERNSTEIN, MICHAEL T. KLEINMAN  
 New York Univ.  
 New York, NY
- 9:30 — Characterization of Aerosols Upwind of New York City II. Transport Processes  
**#138** GEORGE T. WOLFF, PAUL J. LIOY  
 Interstate Sanitation Commission  
 New York City, NY  
 BRIAN LEADERER  
 Yale Univ.  
 New Haven, CT  
 THEO J. KNEIP, DAVID M. BERNSTEIN, MICHAEL T. KLEINMAN  
 New York Univ. Med. Center  
 New York, NY
- 9:45 — New York Summer Aerosol Study: Trace Element Concentration Vs.  
**#139** Particle Size  
 DAVID M. BERNSTEIN  
 New York University Medical Center  
 New York, NY  
 KENNETH RAHN  
 University of Rhode Island  
 Kingston, RI
- 10:00 — VISIT EXHIBITS ..... Imperial Ballroom
- 10:25 — Chemical Composition and Size Distribution of Sulfate as a  
**#140** Function of Particle Size in New York City Aerosol  
 ROGER TANNER, ROBERT GARBER, WILLIAM MARLOW  
 Brookhaven National Laboratory  
 Upton, NY  
 BRIAN LEADERER  
 Yale University  
 New Haven, CT  
 DELBERT EATOUGH  
 Brigham Young University  
 Provo, UT  
 MARIE ANN LEYKO  
 New York University  
 New York, NY
- 10:45 — Inorganic Nitrogen Compounds in New York City Air  
**#141** MICHAEL T. KLEINMAN  
 NYU Medical Center  
 New York, NY  
 BRIAN LEADERER  
 Yale University  
 New Haven, CT  
 CAROL TOMCZYK  
 NYU Medical Center  
 New York, NY

ROGER TANNER  
Brookhaven National Laboratory  
Upton, NY

11:05 — Gaseous and Particulate Halogens in New York City

#142 KENNETH A. RAHN, RANDOLPH D. BORYS  
Graduate School of Oceanography  
University of Rhode Island  
Kingston, RI

11:25 — The Nature of the Organic Fraction of the New York City Summer Aerosol

#143 JOAN M. DAISEY, MARIE ANN LEYKO  
New York Univ.  
New York, NY  
EVA HOFFMAN  
University of Rhode Island  
Kingston, RI

11:45 — Reduced Species and Acid-Base Components of the New York City Aerosols

#144 LEE D. HANSEN, T. MAJOR, J. RYDER, B. RICHTER, NOLAN F. MANGELSON  
DELBERT J. EATOUGH  
Thermochemical Institute  
Brigham Young University  
Provo, UT

12:05 — PANEL DISCUSSION

**THURSDAY MORNING, MAY 26**  
**Bayou II**  
**ANALYTICAL CHEMISTRY**  
**NON-CHARCOAL SOLID SORBENT SAMPLING**  
**AND ANALYSIS**

**Session Arranger:**

JAMES O. JACKSON  
 Gulf Corporation  
 Pittsburgh, PA

**Session Chairman:**

LOUIS PRESS  
 The Hartford Insurance Group  
 Hartford, CT

**Monitor:**

WILLIAM R. BURG	DAVID T. KILLOUGH
University of Cincinnati	General Electric Co.
Cincinnati, OH	Schenectady, NY

8:00 — Criteria for the Evaluation of Methods for the Collection of Pollutants in Air  
**#145** Using Solid Sorbents

R. G. MELCHER, R. R. LANGNER, R. O. KAGEL  
 Dow Chemical, USA  
 Midland, MI

8:20 — An Evaluation of Long Term (TWA) Detector Tubes: CO, SO<sub>2</sub> & H<sub>2</sub>S

**#146** R. I. ALLEN, R. S. BRIEF  
 Exxon Corporation  
 Linden, NJ

8:40 — Use of Detector Tubes Under Extreme Conditions

**#147** K. LEICHNITZ  
 Drägerwerk AG  
 Lubeck, West Germany

9:00 — A Study of Personal Sampling Pumps for Use with Long Term Detector Tubes

**#148** R. I. ALLEN, R. S. BRIEF  
 Exxon Corporation  
 Linden, NJ

9:20 — Calibration for Long Term Sampling Toluene Colorimetric Detector Tubes

**#149** A. P. YALCINKAYA  
 Union Carbide Corporation  
 Texas City, TX  
 R. B. KONZEN  
 Texas A&M University  
 College Station, TX

9:40 — A New Personal Sampler for Organic Vapors

**#150** J.F. MAZUR, R.L. BAMBERGER, G.G. ESPOSITO, G.E. PODOLAK, B. JACOBS  
 U.S. Army Environmental Hygiene Agency  
 Aberdeen Proving Ground, MD

10:00 — VISIT EXHIBITS ..... **Imperial Ballroom**

## THURSDAY MORNING, MAY 26

### Bayou II

## ANALYTICAL CHEMISTRY/TOXICOLOGY

#### Session Arranger:

CLAUDE H. WOLFE  
Nalco Chemical Co.  
Oakbrook, IL

#### Session Chairman:

H. N. McFARLAND  
Gulf Science & Technology Co.  
Pittsburgh, PA

#### Monitors:

JOAN WRONSKI  
Kemper/Natlisco  
Long Grove, IL  
J. WOODRING  
Argonne Nat'l. Labs.  
Argonne, IL

10:20 — Influence of Ozone and Sulfate Aerosols on Clearance of Inhaled  
#151 Particles in Rats

R. F. PHALEN, J. L. KENOYER, NANCY TRUGLIO  
Univ. Calif. College of Medicine  
Irvine, CA

10:40 — <sup>133</sup>Xenon Washout Method for Assessing Lung Injury in the Rat  
#152 J. DAVIS, R. F. PHALEN, A. WILSON, M. MORESHEAD

Univ. Calif. College of Medicine  
Irvine, CA

11:00 — Ethylene Oxide: Toxicology Review and Field Study Results of Hospital Use  
#153 ZORY R. GLASER MASAO, KOKETSU; LYNN CARSSOW

NIOSH Stanford Research Institute  
Rockville, MD Menlo Park, CA

11:20 — Flow Distribution in a Whole-Body Animal Exposure Chamber  
#154 R. L. BEETHE, R. L. CARPENTER

Inhalation Tox. Research Inst.  
Albuquerque, NM

11:40 — Repeated Exposure Inhalation Toxicology Studies - Experience Using a  
#155 Simulation Model to Control Lung Burdens

R. V. MOKLER  
Inhalation Toxicology Research Institute  
Albuquerque, NM

**THURSDAY MORNING, MAY 26**  
**Grand Ballroom**  
**ANNUAL NIOSH, OSHA, STATES SEMINAR**

**Session Arranger:**

BOBBY F. CRAFT  
NIOSH  
Cincinnati, OH

**Session Co-Chairmen:**

GEORGE L. PETTIGREW  
NIOSH Regional Consultant  
Dallas, TX  
WILLIAM P. DEMERY  
OSHA Regional Industrial Hygienist  
Dallas, TX

8:30 — OSHA Update  
#156 BYUNG KWON  
Office of Field Coordination  
and Experimental Programs  
OSHA  
Washington, DC

9:00 — NIOSH Update  
#157 WILLIAM FELSING, Jr.  
Office of Extramural Coordination  
and Special Projects  
NIOSH  
Rockville, MD

9:30 — General Discussion

10:00 — VISIT EXHIBITS ..... **Imperial Ballroom**

**CONSULTATION SERVICES TO SMALL BUSINESS**

10:20 — NIOSH's Role  
#158 GERALD J. KARCHES  
Division of Technical Services  
NIOSH  
Cincinnati, OH

10:50 — OSHA's Role  
#159 JOSEPH KIRK  
Office of Consultation Programs  
OSHA  
Washington, DC

11:00 — A State's Role  
#160 JOHN C. LUMSDEN  
North Carolina State Board of Health  
Raleigh, NC

11:30 — Discussion

## THURSDAY MORNING, MAY 26

### Emerald Ballroom

### ENGINEERING

#### Session Arranger:

FRANK M. RENSHAW  
Rohm and Haas Co.  
Philadelphia, PA

#### Session Chairman:

JOHN M. HOCHSTRASSER  
G. D. Searle & Co.  
Skokie, IL

#### Monitor:

JOHN POLHEMUS  
Miles Labs, Inc.  
Elkhart, IN

8:00 — Criteria for Utilization of Thermal Barriers

#161 W. N. McKINNEY, JR.

NIOSH  
Cincinnati, OH

8:20 — Relationships Between Air Pollution Abatement and Occupational

#162 Health Engineering

J. E. MUTCHLER  
Clayton Environmental Consultants, Inc.  
Southfield, MI

8:40 — Application of Charged Fog for Suppression of Dust and Sulfur

#163 Dioxide in the Industrial Environment

S. A. HOENIG, C. F. RUSS  
University of Arizona  
Tucson, AZ

9:00 — Local Exhaust Ventilation

#164 G. E. SOCHA  
Dow Chemical Company  
Midland, MI

9:20 — Study of Heat Sources in Underground Mines

#165 F. C. BOSSARD  
Montana College of Mineral Science and Technology  
Butte, MT

9:40 — The Human Factor in Industrial Hygiene Control

#166 M. C. OBERG  
LFE Corp.  
Richmond, CA

10:00 — VISIT EXHIBITS ..... Imperial Ballroom

## THURSDAY MORNING, MAY 26

### University Room

### ERGONOMICS

#### Session Arranger:

JERRY L. PURSWELL  
University of Oklahoma  
Norman, OK

#### Session Chairman:

MOHAMMED M. AYOUB  
Texas Tech. University  
Lubbock, TX

#### Monitor:

RODNEY K. SCHUTZ  
Georgia Tech. University  
Atlanta, GA

8:00 — On Predicting Job Related Worker Strength

#167 G. D. HERRIN  
University of Michigan  
Ann Arbor, MI

8:25 — Strain of Ladder Climbing for Fire Fighters

#168 E. KAMON, G. BLACKBURN  
Pennsylvania State University  
University Park, PA

8:50 — Body Position During Lifting

#169 S. KONZ, T. PARKER, G. DESAI  
Kansas State University  
Manhattan, KS

9:15 — In-Plant Evaluation of Workers' Muscle Strength

#170 E. KAMON  
Pennsylvania State University  
University Park, PA

9:40 — A Model For Predicting Metabolic Rate for Manual Materials Handling Jobs

#171 A. GARG  
University of Miami  
Coral Gables, FL

10:00 — VISIT EXHIBITS ..... Imperial Ballroom

10:30 — Designing Jobs for Women: Productivity Implications

#172 J. L. PURSWELL  
University of Oklahoma  
Norman, OK

10:50 — Predicting Female Lifting Strength

#173 M. M. AYOUB  
Texas Tech University  
Lubbock, TX  
S. E. DEIVANAYAGAM  
Univ. of Texas  
Arlington, TX

- 11:00 — An Investigation of Chronic Wrist Injuries in Women  
#174 T. J. ARMSTRONG, D. B. CHAFFIN  
The University of Michigan  
Ann Arbor, MI
- 11:30 — An Overview of Male-Female Differences  
#175 R. K. SCHUTZ  
Georgia Institute of Technology  
Atlanta, GA



**THURSDAY MORNING, MAY 26**

**Gold Room**

**IONIZING RADIATION**

**Session Arranger:**

D. A. WAITE  
Battelle Memorial Institute  
Richland, WA

**Session Chairman:**

W. L. LAPPENBUSCH  
USEPA  
Washington, DC

**Monitors:**

B. V. ANDERSON  
Battelle Northwest Labs  
Richland, WA  
D. A. WAITE  
Battelle Memorial Institute  
Richland, WA

8:00 — Review of Research Papers and Salient Points to Consider when  
#176 Conducting Radiation and Multiple Stress Studies

WILLIAM L. LAPPENBUSCH  
USEPA  
Washington, DC

8:20 — Multiple Stress and Their Biological Consequences

#177 VERNON RILEY  
Pacific Northwest Research Foundation  
Seattle, WA

8:40 — Mathematical Models Relating to Multi-Event Diseases  
#178 and Multiple Stresses

JOHN BAUM  
Brookhaven National Laboratory  
Upton, LI., NY

9:00 — Mammary and Other Tumors as a Response to Radiation and  
#179 Multiple Stresses

SHIELDS WARREN, CLARK E. BROWN  
New England Deaconess Hosp.  
Boston, MA

9:20 — Radiation and Chemical Mammary Carcinogenesis in Female Rats

#180 CLAIRE J. SHELLABARGER  
Brookhaven National Laboratory  
Upton, LI., NY

9:40 — Interactions of Ionizing Radiation, Nitrosamines, Sulfonylalkanes and  
#181 Antioxidants as they Affect Carcinogenesis and Survival in Mice  
NEAL K. CLAPP, Ph.D.  
Oak Ridge National Laboratory  
Oak Ridge, TN

10:00 — VISIT EXHIBITS ..... Imperial Ballroom

10:20 — Synergism and Additivity in Radiation Carcinogenesis in Rats

#182 D. K. MYERS, H. B. NEWCOMBE, J. F. MCGREGOR  
Atomic Energy of Canada, Limited  
Chalk River, Ontario

10:40 — The Combined Effects of Irradiation and a

#183 Chemical Mutagen (TEM)  
WILLIAM SHERIDAN, EUGENE R. SOARES, RUTH SORG  
National Institute of Environmental Health Sciences  
Research Triangle Park, NC

11:00 — Multiple Environmental Stress Studies with Methylmercury and

#184 Ionizing Radiation  
EUGENE HUPP  
Texas Woman's University  
Denton, TX

11:20 — Effects of Iron Deficiency on the Absorption of Pollutant Metals

#185 H. A. RAGAN  
Battelle Northwest Labs  
Richland, WA

11:40 — Radiation Induced Teratogenesis

#186 ROBERT L. BRENT  
Jefferson Medical College  
Philadelphia, PA

**THURSDAY MORNING, MAY 26**

**Emerald Ballroom**

**PERSONAL PROTECTIVE DEVICES — GENERAL**

**Session Arrangers:**

HENRY M. TAYLOR, JR.  
Stanford Research Institute  
Menlo Park, CA

THOMAS E. KREICHEL  
Bethlehem Steel Co.  
Bethlehem, PA

**Session Chairman:**

GERALD L. HESS  
Goodyear Tire & Rubber Co.  
Akron, OH

**Monitors:**

RONALD L. GUINN  
Ethyl Corp.  
Pasadena, TX  
JOEL M. COHEN  
Stanford Research Institute  
Menlo Park, CA

10:20 — Guidelines for Selection of Recommended Personal Protective Equipment

#187 C. R. TONEY  
Bendix Corp.  
Cocoa Beach, FL

10:40 — Design of a Personal Protective Equipment Survey Scheme and Form

#188 W. L. BARNHART, JR.  
Bendix Corp.  
Cocoa Beach, FL

11:00 — Personal Protective Clothing for Asbestos

#189 D. GIDLEY  
Stanford Research Institute  
Menlo Park, CA

11:20 — Permeability of Glove Materials to Hazardous Chemicals

#190 E. B. SANSONE  
Y. B. TEWARI  
NCI Frederick Cancer Research Center  
Frederick, MD

## THURSDAY AFTERNOON, MAY 26

### Bayou I

## AEROSOL TECHNOLOGY

#### Session Arrangers:

MARVIN I. TILLERY  
Los Alamos Scientific Laboratory  
Los Alamos, NM  
OWEN R. MOSS  
Battelle Pacific Northwest Laboratories  
Richland, WA

#### Session Chairmen:

VIRGIL MARPLE	OTTO RAABE
University of Minnesota	University of California
Minneapolis, MN	Davis, CA

#### Monitors:

THOMAS O. DAVIS	DANIEL TALLEY
Los Alamos Scientific Laboratory	Los Alamos Scientific Laboratory
Los Alamos, NM	Los Alamos, NM

- 1:20 — Generation of Aerosols of Two Immiscible Components  
#191 R. L. CARPENTER, B. V. MOKLER  
Inhalation Toxicology Research Institute  
Albuquerque, NM
- 1:40 — Comparison of the In Vitro Leaching Rate of  $^{51}\text{Cr}$  from Polystyrene  
#192 Latex Microspheres and the Rate of Clearance from Rat Lung  
J. L. KENOYER, R. F. PHALEN, R. HINRICHS  
University of Calif.  
Irvine, CA
- 2:00 — Labeling of Monodispersed Polystyrene Microspheres with Tightly-  
#193 Bound  $^{51}\text{Cr}$   
R. HINRICHS, J. KENOYER, R. PHALEN  
University of Calif.
- 2:20 — Generation and Characterization of Sulfate Aerosols at High and  
#194 Low Relative Humidities  
A. HO, R. WALTERS, R. PHALEN  
University of Calif.  
Irvine, CA
- 2:40 — Generation of Sulfuric Acid Aerosols for Inhalation Toxicity Studies  
#195 R. WALTERS, R. PHALEN, G. S. SAMUELSON  
University of Calif.  
Irvine, CA

#### Break

- 3:20 — Generation and Respiratory Deposition of Particles in the 0.1 — 0.1  $\mu\text{m}$  Range  
#196 DAVID L. SWIFT  
School of Hygiene and Public Health  
Baltimore, MD

- 3:40 — Effect of Electrostatic Charges on Particle Deposition in the  
#197 Human Respiratory System  
TAI CHAN, M. LIPPMAN, R. B. SCHLESINGER  
NYU Medical Center  
New York, NY
- 4:00 — Regional Lobar Deposition Calculations of Inhaled Aerosols in Rodents  
#198 HSU-CHI YEH, G. M. SCHUM, M. T. DUGGAN  
Inhalation Toxicology Research Institute  
Albuquerque, NM
- 4:20 — Local Particle Deposition in Human Airway Models During Exhalation  
#199 CHIU-SEN WANG, TRAN ANH SON  
Syracuse University  
Syracuse, NY
- 4:40 — The Initial Deposition of Inhaled PuO<sub>2</sub> Aerosols in Pigs  
#200 D. K. CRAIG, M. T. KARAGIANES, J. R. DECKER, W. C. CANNON,  
R. L. BUSCHBOM  
Battelle Pacific Northwest Laboratories  
Richland, WA

THURSDAY AFTERNOON, MAY 26

Bayou II

ANALYTICAL CHEMISTRY

NON-CHARCOAL SOLID SORBENT SAMPLING AND  
ANALYSIS

**Session Arranger:**

JAMES O. JACKSON  
Gulf Oil Corporation  
Pittsburgh, PA

**Session Arranger:**

EDWARD J. SOWINSKI  
Uniroyal Chemical  
Naugatuck, CT

**Monitor:**

STEPHEN M. RAPPAPORT  
Univ. of Calif.  
Berkeley, CA

1:00 — Personnel Monitoring for Caprolactam Exposures

#201 W. T. TOLAND  
Dow Badische Company  
Freeport, TX

1:20 — Sampling and Analysis of Aminoethanol Compounds in Air

#202 G. O. WOOD, R. G. ANDERSON  
Los Alamos Scientific Laboratory  
Los Alamos, NM

1:40 — Determination of Ammonia in the Presence of Airborne Concentrations of

#203 Ethylenediamine and Monoethanolamine  
W. J. VINCENT, K. J. HAHN, N. H. KETCHAM  
Union Carbide Corporation  
South Charleston, WV

2:00 — Sampling for Organic Chemicals in Workplace Atmosphere with

#204 Porous Polymer Beads  
M. W. DIETRICH  
Washington University  
St. Louis, MO  
L. M. CHAPMAN, J. P. MIEURE  
Texas A&M University  
College Station, TX

2:20 — Solid Sorbent Sampler for White Phosphorous in Air

#205 H. K. DILLON, W. J. BARRETT  
Southern Research Institute  
Birmingham, AL  
P. M. ELLER  
NIOSH  
Cincinnati, OH

2:40 — Development and Evolution of Novel Devices Employing Solid Sorbents for  
Sampling Phosphorous Pentachloride Vapors in the Field

#206 B. E. GOODWIN, J. L. HARRIS, J. E. OBERHOLTZER  
Arthur D. Little, Inc.  
Cambridge, MA  
P. M. ELLER  
NIOSH  
Cincinnati, OH

## THURSDAY AFTERNOON, MAY 26

### University Room

### ERGONOMICS

#### Session Arranger:

JERRY L. PURSWELL  
University of Oklahoma  
Norman, OK

#### Session Chairman:

ELIEZER KAMON  
Pennsylvania State University  
University Park, PA

#### Monitor:

F. DUKES-DOBOS  
NIOSH  
Cincinnati, OH

#### 3:30 — Maximal Stress Tests With Open Circuit SCBA's

- #207 T. O. DAVIS  
Los Alamos Scientific Lab.  
Los Alamos, NM  
P. RAVEN  
Institute for Aerobics Research  
Dallas, TX

#### 3:50 — Respiratory Responses of Coal Miners for use with Mechanical Simulators

- #208 T. E. BERNARD, R. L. STEIN  
U.S. Bureau of Mines  
Pittsburgh, PA  
E. KAMON  
Penn State Univ.  
University Park, PA

#### 4:10 — Exhalation Time at Exhaustion with Age and Sex

- #209 ARTHUR T. JOHNSON  
University of Maryland  
College Park, MD

#### 4:30 — Physiological Effects of Breathing Resistance and Equipment Dead Space in

- #210 Respiratory Protective Devices: Status of the Problem  
RALPH H. JAMES  
NIOSH  
Cincinnati, OH

**THURSDAY AFTERNOON, MAY 26**

**Emerald Ballroom**

**GENERAL INDUSTRIAL HYGIENE**

**Non-Monitoring Programs**

**Session Arranger:**

SHELDON H. RABINOVITZ  
Ford Motor Co.  
Dearborn, MI

**Session Chairman:**

ROBERT D. SOULE  
Clayton Environmental Consultants  
Southfield, MI

**Monitor:**

THOMAS F. KOHL  
MI Dept. of Public Health  
Pontiac, MI

1:00 — Chemical Material Handling Guides  
#211 E. D. BARETTA, C. A. HAWK, P. S. BODEAU, J. E. ANDERSON  
S. C. Johnson & Son, Inc.  
Racine, WI

1:20 — Standards Completion Program-Technical Resource Documents  
#212 R. F. BOGGS, F. W. MACKISON  
NIOSH  
Rockville, MD

1:40 — The Identification of Adverse Occupational Exposures by an  
#213 Industrial Hygiene Questionnaire  
W. M. LEDNAR, DEBBIE WINN, T. WILLIAMS,  
M. VAN ERT, J. GAMBLE  
George Washington University  
Washington, DC

2:00 —  
#214 PAPER CANCELLED

2:20 —  
#215 PAPER CANCELLED

2:40 — Retrospective Industrial Hygiene Surveys  
#216 N. A. ESMEN  
University of Pittsburgh  
Pittsburgh, PA

3:00 — Industrial Hygiene and Safety in a Think Factory  
#217 J. H. GAMBLE, PATRICIA PAULUS  
University of Iowa  
Iowa City, IA



- 9:15 — Characterization of Aerosols Upwind of New York City I. Aerosol Composition  
**#137** PAUL J. LIOY, GEORGE T. WOLFF  
 Interstate Sanitation Comm.  
 New York, NY  
 K. RAHN  
 University of Rhode Island  
 Kingston, RI  
 THEO J. KNEIP, DAVID M. BERNSTEIN, MICHAEL T. KLEINMAN  
 New York Univ.  
 New York, NY
- 9:30 — Characterization of Aerosols Upwind of New York City II. Transport Processes  
**#138** GEORGE T. WOLFF, PAUL J. LIOY  
 Interstate Sanitation Commission  
 New York City, NY  
 BRIAN LEADERER  
 Yale Univ.  
 New Haven, CT  
 THEO J. KNEIP, DAVID M. BERNSTEIN, MICHAEL T. KLEINMAN  
 New York Univ. Med. Center  
 New York, NY
- 9:45 — New York Summer Aerosol Study: Trace Element Concentration Vs.  
**#139** Particle Size  
 DAVID M. BERNSTEIN  
 New York University Medical Center  
 New York, NY  
 KENNETH RAHN  
 University of Rhode Island  
 Kingston, RI
- 10:00 — VISIT EXHIBITS ..... **Imperial Ballroom**
- 10:25 — Chemical Composition and Size Distribution of Sulfate as a  
**#140** Function of Particle Size in New York City Aerosol  
 ROGER TANNER, ROBERT GARBER, WILLIAM MARLOW  
 Brookhaven National Laboratory  
 Upton, NY  
 BRIAN LEADERER  
 Yale University  
 New Haven, CT  
 DELBERT EATOUGH  
 Brigham Young University  
 Provo, UT  
 MARIE ANN LEYKO  
 New York University  
 New York, NY
- 10:45 — Inorganic Nitrogen Compounds in New York City Air  
**#141** MICHAEL T. KLEINMAN  
 NYU Medical Center  
 New York, NY  
 BRIAN LEADERER  
 Yale University  
 New Haven, CT  
 CAROL TOMCZYK  
 NYU Medical Center  
 New York, NY

ROGER TANNER  
Brookhaven National Laboratory  
Upton, NY

11:05 — Gaseous and Particulate Halogens in New York City

#142 KENNETH A. RAHN, RANDOLPH D. BORYS  
Graduate School of Oceanography  
University of Rhode Island  
Kingston, RI

11:25 — The Nature of the Organic Fraction of the New York City Summer Aerosol

#143 JOAN M. DAISEY, MARIE ANN LEYKO  
New York Univ.  
New York, NY  
EVA HOFFMAN  
University of Rhode Island  
Kingston, RI

11:45 — Reduced Species and Acid-Base Components of the New York City Aerosols

#144 LEE D. HANSEN, T. MAJOR, J. RYDER, B. RICHTER, NOLAN F. MANGELSON  
DELBERT J. EATOUGH  
Thermochemical Institute  
Brigham Young University  
Provo, UT

12:05 — PANEL DISCUSSION

**THURSDAY MORNING, MAY 26**

**Bayou II**

**ANALYTICAL CHEMISTRY**

**NON-CHARCOAL SOLID SORBENT SAMPLING  
AND ANALYSIS**

**Session Arranger:**

JAMES O. JACKSON  
Gulf Corporation  
Pittsburgh, PA

**Session Chairman:**

LOUIS PRESS  
The Hartford Insurance Group  
Hartford, CT

**Monitor:**

WILLIAM R. BURG	DAVID T. KILLOUGH
University of Cincinnati	General Electric Co.
Cincinnati, OH	Schenectady, NY

8:00 — Criteria for the Evaluation of Methods for the Collection of Pollutants in Air  
#145 Using Solid Sorbents

R. G. MELCHER, R. R. LANGNER, R. O. KAGEL  
Dow Chemical, USA  
Midland, MI

8:20 — An Evaluation of Long Term (TWA) Detector Tubes: CO, SO<sub>2</sub> & H<sub>2</sub>S  
#146 R. I. ALLEN, R. S. BRIEF

Exxon Corporation  
Linden, NJ

8:40 — Use of Detector Tubes Under Extreme Conditions

#147 K. LEICHNITZ  
Dragerwerk AG  
Lubeck, West Germany

9:00 — A Study of Personal Sampling Pumps for Use with Long Term Detector Tubes

#148 R. I. ALLEN, R. S. BRIEF  
Exxon Corporation  
Linden, NJ

9:20 — Calibration for Long Term Sampling Toluene Colorimetric Detector Tubes

#149 A. P. YALCINKAYA  
Union Carbide Corporation  
Texas City, TX  
R. B. KONZEN  
Texas A&M University  
College Station, TX

9:40 — A New Personal Sampler for Organic Vapors

#150 J.F. MAZUR, R.L. BAMBERGER, G.G. ESPOSITO, G.E. PODOLAK, B. JACOBS  
U.S. Army Environmental Hygiene Agency  
Aberdeen Proving Ground, MD

10:00 — VISIT EXHIBITS ..... **Imperial Ballroom**

**THURSDAY MORNING, MAY 26**  
**Bayou II**  
**ANALYTICAL CHEMISTRY/TOXICOLOGY**

**Session Arranger:**

CLAUDE H. WOLFE  
Nalco Chemical Co.  
Oakbrook, IL

**Session Chairman:**

H. N. McFARLAND  
Gulf Science & Technology Co.  
Pittsburgh, PA

**Monitors:**

JOAN WRONSKI  
Kemper/NatlSCO  
Long Grove, IL  
J. WOODRING  
Argonne Nat'l. Labs.  
Argonne, IL

10:20 — Influence of Ozone and Sulfate Aerosols on Clearance of Inhaled  
#151 Particles in Rats

R. F. PHALEN, J. L. KENOYER, NANCY TRUGLIO  
Univ. Calif. College of Medicine  
Irvine, CA

10:40 — <sup>133</sup>Xenon Washout Method for Assessing Lung Injury in the Rat

#152 J. DAVIS, R. F. PHALEN, A. WILSON, M. MORESHEAD  
Univ. Calif. College of Medicine  
Irvine, CA

11:00 — Ethylene Oxide: Toxicology Review and Field Study Results of Hospital Use

#153 ZORY R. GLASER MASAO, KOKETSU; LYNN CARSSOW  
NIOSH Stanford Research Institute  
Rockville, MD Menlo Park, CA

11:20 — Flow Distribution in a Whole-Body Animal Exposure Chamber

#154 R. L. BEETHE, R. L. CARPENTER  
Inhalation Tox. Research Inst.  
Albuquerque, NM

11:40 — Repeated Exposure Inhalation Toxicology Studies - Experience Using a

#155 Simulation Model to Control Lung Burdens  
R. V. MOKLER  
Inhalation Toxicology Research Institute  
Albuquerque, NM

**THURSDAY AFTERNOON, MAY 26**  
**Grand Ballroom**  
**NOISE/MEASUREMENT AND CONTROL**

**Session Arranger:**

DONALD R. McFEE  
Occusafe, Inc.  
Wilmette, IL

**Session Chairman:**

E. H. TOOTHMAN  
Bethlehem Steel Corp.  
Bethlehem, PA

**Monitor:**

T. ROBERTS, JR.  
Mobil Oil Corp.  
Princeton, NJ  
GARY MYERS  
Argonne Nat'l. Lab.  
Argonne, IL

3:00 — Measurement Of Noise Levels in The Vicinity Of Occupationally  
#239 Exposed Workers

J. F. LAUDERDALE	R. B. KONZEN
Texas State Dept. Of Health Resources	Texas A&M University
Austin, TX	College Station, TX

3:15 — Personal Protection vs. Engineering & Administrative Controls  
#240 L. F. YERGES  
Downers Grove, IL

3:30 — Plant Design For Occupational Noise Exposure Reduction  
#241 H. CHANG  
Bechtel Corp.  
San Francisco, CA

3:45 — Noise Reduction in Manufacturing Process Through Equipment Product Design  
#242 D. R. McFEE  
Occusafe, Inc.  
Wilmette, IL

4:00 — Hearing Conservation in A Power Plant  
#243 K. MASUMOTO  
Dept. Of The Navy  
Seattle, WA

4:15 — Simplified Occupational Noise Hazard Prediction For New Equipment  
#244 R. M. MAXSON  
Dow Corning Corp.  
Midland, MI

4:30 — Noise Controls for Paper Corrugators  
#245 A. O. LUND  
Michigan Dept. of Public Health  
Kalamazoo, MI

4:40 — Method for Determining Complex Operator Noise Exposure  
**#246**

P. W. HESS  
Hershey Foods, Inc.  
Hershey, PA

P. JENSEN  
Bolt, Beranek, Newman  
Cambridge, MA

4:50 — Noise Measurements System  
**#247**

ABLE J. SAVAGE  
Bendix Corp.  
Baltimore, MD

**THURSDAY AFTERNOON, MAY 26**

**Explorer's Room**

**NON-IONIZING RADIATION**

**Session Arranger:**

C. EUGENE MOSS  
Cincinnati, OH

**Session Chairman:**

WORDIE H. PARR  
NIOSH  
Cincinnati, OH

**Monitor:**

RONALD L. SCHILLER  
Kettering Laboratory  
Cincinnati, OH

1:00 — Estimated Number of U.S. Workers Potentially Exposed to Electromagnetic  
#248 Radiation

C. E. MOSS, D. L. CONOVER, W. E. MURRAY, A. KOHRE  
NIOSH  
Cincinnati, OH

1:20 — Overview of Occupational Radiofrequency and Microwave Radiation  
#249 Program of Finland

MATTI HOKKALA  
Institute of Occupational Health  
Helsinki, Finland

1:40 — NIOSH Criteria Document Development Plans for Radiation Physical Agents  
#250 N. PAGE, Z. R. GLASER

NIOSH  
Rockville, MD

2:00 — The Non-Ionizing Radiation Program of the Physical Agents Branch, NIOSH  
#251 W. H. PARR

NIOSH  
Cincinnati, OH

2:20 — The NIOSH Non-Ionizing Radiation Training Course

#252 R. B. WEIDNER, N. J. BERBERICH

NIOSH  
Cincinnati, OH

3:20 — PAPER CANCELLED

2:40 — Mercury Vapor Lamp Radiation Hazards

#253 F. A. ANDERSEN  
Bureau of Radiological Health, FDA  
Rockville, MD

- 3:15 — Implications of the Behaviour of Macromolecules in  
**#254** Electromagnetic Fields Concerning Human Exposure to  
 Industrial Fields  
 J. W. FRAZER  
 Brooks Air Force Base, TX
- 3:35 — RF (10-40 MHz) Personnel Exposure — Industrial Hygiene Problems  
**#255** D. L. CONOVER  
 NIOSH  
 Cincinnati, OH
- 3:55 — Radiofrequency Power Absorption in Humans  
**#256** C. H. DURNEY, C. C. JOHNSON  
 University of Utah  
 Salt Lake City, UT
- 4:15 — Laser Protective Eyewear  
**#257** K. R. ENVALL  
 FDA  
 Bureau of Radiological Health  
 Rockville, MD



THURSDAY AFTERNOON, MAY 26

University Room

TOXICOLOGY

**Session Arranger:**

CLAUDE H. WOLF  
Nalco Chemical Co.  
Oakbrook, IL

**Session Chairman:**

FRANK D. GRIFFITH  
3M Co.  
St. Paul, MN

**Monitors:**

CHARLES C. CLARKE  
Gulf Science & Tech Co.  
Pittsburgh, PA  
H. W. ELLIS  
Nalco Chemical Co.  
Chicago, IL

- 1:00 — Effects of Short Term Exposure to  $H_2SO_4$  and  $(NH_4)_2SO_4$   
**#258** Aerosols upon Bronchial Airway Function in the Donkey  
R. B. SCHLESINGER, M. LIPPMAN, R. E. ALBERT  
NYU Medical Center  
New York, NY
- 1:20 — Dose Response Studies Following Inhalation of  
**#259** Dimethyl Carbamoyl Chloride  
A. R. SELLAKUMAR, S. LASKIN\*, G. V. KATZ, G. M. RUSCH, M. KUSCHNER  
NYU Medical Center  
New York, NY
- 1:40 — Combined Intubation Inhalation Studies with Sulfuric Acid Mist and  
**#260** Benzo(a)Pyrene  
A. R. SELLAKUMAR, G. RUSCH, S. LASKIN\*, J. L. GURMAN  
NYU Medical Center  
New York, NY
- 2:00 — Pharmacokinetic Evaluation of Rodents Following Inhalation  
**#261** Exposure to Benzene Vapor  
C. SNYDER, M. N. ERLICHMAN, B. GOLDSTEIN, S. LASKIN\*  
NYU Medical Center  
New York, NY
- 2:20 — Dermal Penetration of Three Typical Insect Repellents in Dogs and Rabbits  
**#262** H. L. SNODGRASS, M. H. WEEKS  
U.S.A. Army Environmental Hygiene Agency  
Aberdeen Proving Grounds, MD

\*Deceased

## FRIDAY MORNING, MAY 27

### Bayou I

## AEROSOL TECHNOLOGY

#### Session Arrangers:

MARVIN I. TILLERY  
Los Alamos Scientific Laboratory  
Los Alamos, NM  
OWEN R. MOSS  
Battelle Pacific Northwest Laboratories  
Richland, WA

#### Session Chairman:

THOMAS F. TOMB  
Mining Enforcement and Safety Administration  
Pittsburgh, PA

#### Monitors:

HARRY N. TREAFIS, EILEEN M. THOMPSON  
Mining Enforcement and Safety Administration  
Pittsburgh, PA

- 8:00 — Measurement of Particle Density and Dynamic Shape  
#263 Factor with Aerosol Centrifuge:

WILLIAM C. HINDS  
Harvard School of Public Health  
Boston, MA

- 8:20 — A Stober-Rotor with Reuse of Particle Free Air in the Rotor

- #264 DIETER HOCHRAINER  
PROFESSOR WERNER STOBER  
Institut für Aerobiologie  
Grafchaft, Germany

- 8:40 — A General Method for Fitting Size Distributions to Multicomponent Aerosols Data  
#265 Using Weighted Least-Squares

OTTO G. RAABE  
University of California  
Davis, CA

- 9:00 — Evaluation of Particle Size Distributions with Differing Instruments

- #266 JOSHUA GURMAN  
New York University Medical Center  
New York, NY

- 9:20 — Light Extinction for Multi-Modal Particle Size Distributions

- #267 KLAUS WILLEKE JOHN E. BROCKMANN  
University of Cincinnati University of Minnesota  
Cincinnati, OH Minneapolis, MN

- 9:40 — A Portable Optical Particle Counter System for Analyzing Light-Absorbing  
#268 Irregular Aerosol Particles

VIRGIL A. MARPLE, KENNETH L. RUBOW  
University of Minnesota  
Minneapolis, MN

10:00 — Development of a Prototype Monitor for the Measurement of  
#269 Fibrous Aerosols

PEDRO LILIENFELD, PAUL B. ELTERMAN, MARC YAGJIAN,  
DANIEL P. ANDERSON  
GCA/Technology Division  
Bedford, MA

PAUL A. BARON  
NIOSH  
Cincinnati, OH

10:20 — Application of Stellar Photometry to Aerosol Studies in the  
#270 San Francisco Bay Area

WILLIAM M. PORCH, TERRY R. GALLOWAY  
Lawrence Livermore Laboratory  
Livermore, CA

THOMAS J. GREEN  
Chabot Observatory  
Oakland, CA

## FRIDAY MORNING, MAY 27

Gold

### AIR POLLUTION

#### Session Arranger:

DANIEL LILLIAN  
ERDA  
Washington, D.C.

#### Session Chairman:

OTTO WHITE, JR.  
Brookhaven National Laboratory  
Upton Long Island, NY

#### Monitor:

PAUL LIOY  
Interstate Sanitation Commission  
New York, NY

8:00 — Chemical Agents in Foundry Mold Effluent

#271 W. D. SCOTT  
RUBY JAMES  
W. SPENSER  
Southern Research Institute  
Birmingham, AL

8:20 — Air Pollution Aspects of Hazardous Material Disposal

#272 R. J. MURPHY  
U.S. Army Environmental Hygiene Agency  
Aberdeen Proving Ground, MD

8:40 — A Study of Scrubber Aerosols Generated from Solutions Containing Surfactants

#273 For Removal of Various Industrial Contaminants  
D. HANSEN, G. RIDER, H. LEEMAN  
United States Testing, Inc.  
Hoboken, NJ  
H. COMPSTON, R. BACCAGLINI  
Garden State Paper Co.  
Garfield, NJ

9:00 — Evaluation and Testing of Potential Hazardous Air Pollutant Emissions from

#274 Disposal of Waste Munitions in a Prototype Fluidized Bed Incinerator  
J. W. CARROLL, D. LILLIAN\*, K. WILLIAMS, T. GUINIVAN, R. M. TUGGLE  
U. S. AEHA \*ERDA  
Aberdeen Proving Ground, MD Washington, DC

9:20 — Effect of Chemical Defoliation on Leaf and Bract Content in Raw Cottons

#275 P. R. MOREY, R. M. BETHEA E. B. WILLIAMSON, W. E. GARNER  
Texas Tech University U.S. Dept. Agriculture  
Lubbock, TX Stoneville, MS

M. C. BATTIGELLI  
Univ. of North Carolina  
Chapel Hill, NC

9:40 — Development of a Highly Sensitive and Specific Organo-Phosphorous Monitor

#276 D. C. BEHRINGER  
US AEHA  
Edgewood Arsenal, MD

## FRIDAY MORNING, MAY 27

### Bayou II

## ANALYTICAL CHEMISTRY/MISCELLANEOUS MONITORING AND ANALYSIS

### Session Arranger:

JAMES O. JACKSON  
Gulf Oil Corporation  
Pittsburgh, PA

### Session Chairman:

EDWARD E. LEFEBURE Maj.  
USAF Environmental Health Laboratory  
Kelly AFB, TX

### Monitor:

PETER A. HERNANDEZ  
InterLake, Inc.  
Chicago, IL

R. M. GRIFFIN  
Environmental Science Associates, Inc.  
Burlington, MA

8:00 — Automated Infrared Quartz Analysis on Dust Collection Filters

#277 H. W. LANG, J. E. HAY  
Bureau of Mines  
Pittsburgh, PA

8:20—Field Monitoring and Analysis of Personnel Exposures to Hydrazines at a Rocket  
#278 Propellant Facility

L. R. COOK, R. E. GLENN, G. E. PODOLAK  
U. S. Army Environmental Hygiene Agency  
Aberdeen Proving Ground, MD

8:40—Stabilization Effect of Hopcalite in the Graphite Furnace Determination of

#279 Mercury in Air  
R. McCULLEN  
The Travelers Insurance Companies  
Hartford, CT

9:00 — Analysis: The Right Arm of an Industrial Hygienist

#280 L. W. MICHAEL, D. W. YEAGER  
University of Cincinnati Medical Center  
Cincinnati, OH

9:20 — Analytical Quality Assurance for the US Army Industrial Hygiene Program

#281 P. V. SNEERINGER, F. BELKIN  
US Army Environmental Hygiene Agency  
Aberdeen Proving Ground, MD

9:40 — Rapid Analysis for VCM in the PPB Range Utilizing a Unique

#282 Concentrating Technique  
S. D. HERRON, R. SIEGEL  
BASF Wyandotte  
Geismar, LA

10:00 — Quantitative Analysis of Organic Vapors by Gas Liquid Chromatography Using  
#283 the Technique of Relative Molar Response

V. DOTY, D. McNAMARA, J. D. PICKLE  
The Continental Insurance Companies  
Dallas, TX

- 10:20 — Sampling and Analysis of MDI in the Foundry Environment  
**#284** P. J. MENARDI, A. G. SCHAUDER  
 Ashland Oil, Inc.  
 Dublin, OH
- 10:40 — The Consistency of the Gravimetric and Impinger Methods in Evaluating  
 Hazardous, Dirty Conditions  
**#285** B. SAMIMI J. W. MASON  
 Univ. of Teheran Tulane University  
 Teheran, Iran New Orleans, LA
- 11:00 — A Solid Sorbent Personal Sampling Method for the Determination of  
 Acrolein in Air  
**#286** G. F. HURLEY, N. H. KETCHAM  
 Union Carbide Corp.  
 S. Charleston, WV
- 11:20 — The Determination of Nitroglycerine and Ethylene Glycol Dinitrate in Air  
**#287** W. J. BARRETT, R. H. JAMES  
 Southern Res. Institute  
 Birmingham, AL
- 11:40 — Radioactive Pollutant Determinations Using Gamma-Ray Spectroscopy  
**#288** J. S. ELDRIDGE, T. W. OAKES, M. E. PRUITT  
 Union Carbide Corp.  
 Oak Ridge, TN

## FRIDAY MORNING, MAY 27

Creole Room

### ENGINEERING

#### Session Arranger:

FRANK M. RENSHAW  
 Rohm and Haas Co.  
 Philadelphia, PA

#### Session Chairman:

PAUL J. SNYDER  
 Rohm and Haas Co.  
 Philadelphia, PA

#### Monitor:

RICHARD COOMES  
 Proctor and Gamble Co.  
 Cincinnati, OH

- 8:00 — Incorporating Industrial Hygiene Controls into Plant Process Design

**#289** Cyanamid Procedure  
 W. V. ANDRESEN  
 American Cyanamid Co.  
 Wayne, NJ

- 8:20 — Safe Handling in the Production of Styrene  
**#290** G. E. SOCHA  
 Dow Chemical, U.S.A.  
 Midland, MI
- 8:40 — Some Case Histories of Industrial Hygiene Input in Plant Design  
**#291** RICHARD HENDERSON  
 Olin Corporation  
 New Haven, CT
- 9:00 — How to Work with Corporate Engineers  
**#292** R. F. CLAPP  
 Gulf Oil Corp.  
 Houston, TX
- 9:20 — Industrial Hygiene Engineering in the Petrochemical Industry  
**#293** RICHARD S. BRIEF, JEREMIAH LYNCH  
 Exxon Corp.  
 Linden, NJ
- 9:40 — Decontamination of Chemical Process Equipment  
**#294** FRANK M. RENSHAW  
 Rohm and Haas Co.  
 Philadelphia, PA
- 10:00 — Industrial Hygiene Practices in a Multiprocess Plant  
**#295** R. W. BOHL  
 Dow Chemical U.S.A.  
 Midland, MI
- 10:20 — A Product Stewardship Program for Chlorinated Solvents in the  
 Metal Cleaning Industry  
**#296** LYMAN K. SKORY  
 Dow Chemical U.S.A.  
 Midland, MI
- 10:40 — An Evaluation of Engineering Controls in the Plastics and Resins Industry  
**#297** J. A. GIDEON  
 NIOSH  
 Cincinnati, OH  
 J. BOCHINSKI, K. SCHOULTZ  
 Enviro Control  
 Rockville, MD

## FRIDAY MORNING, MAY 27

### Emerald Room

## GENERAL INDUSTRIAL HYGIENE

#### Session Arranger:

SHELDON H. RABINOVITZ  
Ford Motor Co.  
Dearborn, MI

#### Session Chairmen:

CRITZ E. CULLEN  
Eastman Kodak Company  
Rochester, NY

EDWARD J. KERFOOT  
BASF Wyandotte  
Wyandotte, MI

#### Monitor:

THOMAS J. McBRYAN

#### 8:00 — An Effective Industrial Hygiene Program

#298 R. D. OLSON, R. R. LANGNER  
Dow Chemical Co.  
Midland, MI

#### 8:20 — Industrial Hygiene Monitoring Program for a Solvent Refined

#299 Coal Pilot Plant  
R. T. CHENG, J. O. JACKSON, J. F. SMITH  
Gulf Oil Corp.  
Pittsburgh, PA

#### 8:40 — Benzene Exposure in the Rubber Coating Industry-A Follow Up

#300 L. D. PAGNOTTO, H. B. ELKINS, H. G. BRUGSCH  
Commonwealth of Mass.  
Boston, MA

#### 9:00 — Collection and Analysis of Trace Organic Vapors from Experimental

#301 Foundry Casting Operations  
T. M. HARVEY, S. P. LEVINE, J. D. ALSTETTER, R. S. MARANO  
Ford Motor Co.  
Dearborn, MI

#### 9:20 — Monitoring of Dusty Environments and Determination of Compliance with

#302 Threshold Limit Values  
RUDI KRATEL  
Geneva, Switzerland

#### 9:40 — A Solid Sorbent Personal Sampling Method for the Determination of

#303 Acrolein in Air  
G. F. HURLEY, N. H. KETCHAM  
Union Carbide Corp.  
S. Charleston, WV



- 00 — Identification of Health Problems Through Manipulation of  
 304 Epidemiological Data  
 MARS Y. LONGLEY  
 Standard Oil Co.  
 Cleveland, OH
- 20 — The National Occupational Hazards Survey Data Base, Capabilities,  
 305 and Limitations  
 D. S. SUNDIN  
 NIOSH  
 Cincinnati, OH
- 40 — The Design of a Local Exhaust Ventilation System for the Mixing Hopper of an  
 306 Oilwell Drilling Fluid System  
 H. R. SCHULZ  
 Union Carbide Corp.  
 Texas City, TX
- 00 — Recent Substantial Progress in the Development of  
 307 Hi-V Dust Control Nozzles  
 G. F. CUSUMANO  
 Aeropulse Inc.  
 Cornwells Heights, PA
- 20 — Recirculation Criteria for Industrial Exhaust Air  
 308 R. S. STRICOFF, P. RANGANATH NAYAK, L. J. PARTRIDGE,  
 R. HUGHES  
 Arthur D. Little, Inc.  
 Cambridge, MA

## FRIDAY MORNING, MAY 27

### Explorer's Room

## NON-IONIZING RADIATION

#### Session Arranger:

C. E. MOSS  
NIOSH  
Cincinnati, OH

#### Session Chairman:

W. E. MURRAY  
NIOSH  
Cincinnati, OH

#### Monitor:

RONALD J. ELLIS, MARY C. GAWENDA  
Kettering Lab.  
Cincinnati, OH

8:00 — Aging and Biological Effects Related to the Application of Lighting

#309 C. L. CROUCH  
Illuminating Engineering Research Institute  
New York, NY

8:20 — The Ocular Effects of Ultraviolet in the 290-325 nm Wavelength Range

#310 D. G. PITTS, A. P. CULLEN  
University of Houston  
Houston, TX

8:40 — An Evaluation of Ultraviolet Radiation Personnel Hazards From Selected

#311 High Intensity Discharge Lamps  
H. PILTINGSRUD  
FDA, Nuclear Medicine Laboratory  
Cincinnati General Hospital  
Cincinnati, OH

C. W. FONG  
USAF  
Wright-Patterson AFB, OH

9:00—Establishment of ANSI Sub-Committee Z-311

#312 I. MATELSKY  
General Electric  
Cleveland, OH

9:20 — Infrared Radiation and Its Potential Hazards

#313 A. F. KLASCIUS  
Jet Propulsion Laboratory  
Pasadena, CA

9:40 — Radiation and Electric Arc Welding

#314 J. F. HINRICHS  
A. O. Smith Corporation  
Milwaukee, WI

10:00—A Study of Several Parameters Influencing Irradiance Levels from Welding

#315 T. O'KEEFE, S. W. HORSTMAN  
University of Washington  
Seattle, WA

**FRIDAY MORNING, MAY 27**

**University Room**

**OCCUPATIONAL MEDICINE**

**Session Arranger:**

ERNEST M. DIXON  
Celanese Corp.  
New York, NY

**Session Chairman:**

**Monitors:**

CHARLES S. LAUBLY  
Celanese Corp.  
New York, NY  
JEROME H. BLACKER  
SCM Corp.  
Iselin, NJ

8:00—Occupational Exposure to Synthetic Estrogens-The Need to Establish  
#316 Safety Standards

J. MALCOLM HARRINGTON  
Public Health Service, CDC  
Atlanta, GA

8:20 — Compressed Work-Week: Psychophysiological and  
#317 Physiological Repercussions

M. A. VOLLE, G. R. BRISSON, M. PERUSSE, M. TANAKA,  
Y. DOYON  
Health Sciences Research Center  
University of Quebec  
Quebec, P.Q., Canada

8:40 — The Development of Chemical Dynamic Models of AChE Inhibition by  
#318 Organophosphorus Compounds for Assessing Occupational Hazards

JERRY L. R. CHANDLER  
NIOSH  
Rockville, MD  
WILLIAM P. CLARK  
Computer Sciences Corp.  
Greenbelt, MD

9:00 — Mercury Vapor As a Contaminant of Hospital Environments

#319 A. LAO  
University of Ottawa  
Ottawa, Canada

G. CORTE, G. DOWD  
Air Pollution Control Directorate  
Ottawa, Canada

9:20 — Dermatitis Among Rubber Workers: Relationship to Work Exposure

#320 NANCY J. ELLISH, DRAGANA ANDJELKOVIC  
MICHAEL J. SYMONS, TED M. WILLIAMS  
University of North Carolina  
Chapel Hill, NC

9:40 — Likelihood of Observing a True Increase in Occupational Cancer With a  
#321 Cohort Study

JEANNE M. STELLMAN  
University of Pennsylvania School of Medicine  
Philadelphia, PA

STEVEN D. STELLMAN  
American Health Foundation  
New York, NY

## FRIDAY MORNING, MAY 27

### Gold Room

## PERSONAL PROTECTIVE DEVICES — CLOTHING

### Session Arranger:

HENRY M. TAYLOR  
Stanford Research Institute  
Menlo Park, CA

### Session Chairman:

WILLIAM L. BARNHART, JR.  
Bendix Corp.  
Cocoa Beach, FL

### Monitor(s):

THOMAS J. CIVIC  
Bethlehem Steel Corp.  
Bethlehem, PA  
EVAN F. R. QUARTON  
Johnson and Higgins  
New York, NY

10:20 — Consider the Hazards and What You Wear For Protection

#322 JOHN O. MOLTER  
E. I. duPont de Nemours  
Wilmington, DE

10:50 — Thermal and Mechanical Properties of Aluminized Fabrics for Use in Ferrous  
#323 Metal Handling Operations

W. D. SCOTT, C. E. BATES, Ph.D.  
Southwest Research Institute  
San Antonio, TX

11:00 — Coated Protective Clothing Materials

#324 NEIL SMITH  
Uniroyal, Inc.  
Washington, IN

11:20 — Discussion of Design Parameters Incumbent in the Manufacture of  
#325 Total Encapsulating Suits Used in Corrosive and Toxic Atmospheres

RONALD LADICK  
MSA  
Pittsburgh, PA

***It is a policy of the AIHC to prohibit smoking during all meetings — we request you observe this policy.***

