

ly satisfying result. These considerations represent a major change from the displays of human remains and associated funerary artifacts, as well as ceremonial and sacred objects, that were common in the past.

NAGPRA provides the opportunity for museums to build bridges to Native communities where they were not already in place. In some states, there has been a long-standing commitment to neighboring Native groups. However, for other states this legislation has had a profound effect on how museums interact with local tribal museums. The Arizona State Museum's American Indian Advisory Council, composed of Native representatives from all 20 tribes in Arizona, continuously provides Native opinions regarding museum issues. Such symbiotic relationships create contacts and strengthen networks between museum and Native communities and benefit museum collections.

Lessons Learned and Ongoing

Museums must continue to communicate with Native groups regarding repatriation priorities for individual tribes and their own institutional priorities from a legal perspective. For some Native groups, there is an ambivalence about repatriation of particular ceremonial materials when the society that originally utilized these cultural objects no longer exists. Other tribes/nations such as those in the Pueblo groups of the Southwest do not share the priority of repatriating human remains first. Contrary to what the museum community anticipated at the inception of the legislation, most museums have not been inundated with requests for repatriation of artifacts and human remains by Native peoples.

As legislation, NAGPRA has had both positive and negative effects on museum and Native communities. However, this legislation successfully attempts to release culturally diverse and complex peoples from being trapped in a past where many non-Native museums have displayed Native American cultures in a static way. The intent of the law is to recognize the burial of relatives as a basic human right, to return the physical bones as well as the powerful spirit of the deceased back to the earth, and to return both sacred and ceremonial

objects back to the communities of origin so that they can be used in the context for which they were originally created.

NAGPRA has set a valuable example for conservators. The legislation should give us all pause and an opportunity for reflection about our roles as caretakers of collections. For our profession, this legislation has delineated the importance of moving in the direction of preventive conservation. Additionally, it has taught us that we must continue to scrutinize the types of materials we apply to objects as well as their application techniques. Most important, perhaps, the legislation has provided the opportunity for museums and Native groups to develop stronger and deeper professional relationships with one another. This achievement alone will benefit and strengthen our society as a whole in the 21st century.

Clearly this legislation continues to pose unique challenges for both the museum and the Native communities. Ideally, NAGPRA will continue to serve as a departure point for fruitful discussion. It will be interesting to observe in coming years if NAGPRA creates a ripple effect in other cultures and the care of other nations' cultural patrimony.—
Ingrid A. Neuman, OSG Chair

The author would like to thank the colloquium speakers: Martin Sullivan, Director, Heard Museum; Martha Graham, Registrar for Cultural Resources, American Museum of Natural History; Justine Buck, NAGPRA Project Coordinator, Brooklyn Museum of Art; Betty White, Repatriation Manager, National Museum of the American Indian, Smithsonian Institution; and G. Peter Jemison, Historic Site Manager, Ganondagan State Historic Site, and Chairman, Haudenosaunee Standing Committee on Burial Rules and Regulations, for their informative and well-organized presentation of the subject and for their review of this article. The author would also like to thank Peggy Ellis, Chair, Conservation Center of the Institute of Fine Arts, for her permission to feature the content of this conference for AIC News. Sincere gratitude extends also to those who were interviewed for this article, including: Natalie Firnhaber, Virginia Greene, T. Rose Holdcraft, Marian Kaminitz, Tim McKeown, Judith Levinson, Kathleen Makos, Nancy Odegaard, Ellen Pearlstein, Monona Rossol, and Landis Smith.

Health and Safety News

Results of the Health and Safety Committee Survey

BACKGROUND

In February 1996, AIC's Health and Safety Committee received a new charge from the AIC Board of Directors:

To increase the awareness of safety hazards and general health issues relating to the conservation profession, the committee is charged to study, coordinate, and compile the *Handbook on Health and Safety Issues for Conservators*.

At the Annual Meeting in Norfolk in 1996, sign-up sheets were posted so that members could indicate specific health and safety topics of concern, and committee members began to consider the ways in which a project of this magnitude could best be approached.



GLASS & STAINED GLASS CONSERVATION WORKSHOP

JULY 27-31, 1998

The Ford Conservation Center announces a five day workshop on the restoration and conservation of three-dimensional and stained glass objects.

Instructors will be **Mary Clerkin Higgins** and **Dr. Chandra Reedy**. The workshop will be offered at the new Ford Conservation Center, in Omaha, Nebraska.

Registration/Course Fee: \$250

The Ford Center is pleased to offer two free workshop registrations and scholarships of \$1,000 for the workshop.

For information about the workshop, scholarships, lodging, and accommodations contact:

Lisa Metzger Grotrian
Ford Conservation Center
1326 South 32nd Street
Omaha, NE 68108
402/595/1180
Fax 402/595/1178

Sign-up sheets were summarized and evaluated by the Committee when we met as a group in November 1996 to prepare a strategy for developing the handbook. Our discussions convinced us that a statistically valid survey of the membership would help identify conservator's concerns about health and safety issues.

SURVEY DESIGN

The survey was developed by members of the Health and Safety Committee¹ with statistical input from Donna F. Stroup, Ph.D., M.Sc. It was conducted in October 1997. At the time, AIC had 2,680 individual members.² Committee members determined to target individual members of AIC with North American listings or who had recently engaged in conservation treatments.

Each of seven committee members agreed to survey 23 individual members via telephone, for a total survey population of 161. We used a stratified random sampling design, structured to obtain 80% power in detecting a 5% difference in subgroups.³ Telephone protocols were established to inform potential respondents of the nature of the survey and to assure them of their anonymity.

SURVEY RESULTS

Question 1. Male or Female

Of the 161 respondents, 98 were female (61%) and 63 were male (39%). Because AIC does not maintain data on gender, this figure cannot be compared to an AIC membership profile.

Question 2. Area of Specialization

Representation of specializations was based on first specialty mentioned by respondent. See Table 1.

Question 3. Primary employment: government, private, self

Table 1. Specialties

Specialty	Number	Percent
Paintings	43	27
Objects	43	27
Book & Paper	38	24
Textiles	15	9
Wood	11	7
Architecture	6	4
Photomaterials	4	2
Natural Sciences	1	<1

The survey did not allow participants to distinguish between private-for-profit and private-nonprofit. As the employment response has no impact on health and safety data, this question is not reported.

Question 4. Worksite

Do you ever do treatments at home? (yes or no) If yes, what portion of the time?

Eighty-eight (55%) conservators surveyed do not perform treatments at home. Seventy-three (45%) do perform treatments at home from 0 to 100% of their time. Among this group 32 (44%) work at home 10% of their time or less. Only 26% of the 45% who do treatment at home do so all of the time.

Question 5. Personnel

How many people share your workspace?

One hundred eight (67%) conservators work with 3 or fewer individuals. Thirty-two (20%) conservators do not share their space with anyone else (see Table 2). Only 5% of individuals surveyed work with 15 or more individuals. This figure may have serious implications in the event of an accident and ability to respond. The more people present, however, the greater the number of people potentially exposed to hazards if proper safety precautions are not followed.

Questions 6-14. Information needs

Respondents were asked to select one of the following for each of nine topics:⁴

- I have enough information on the subject.
- I could use more information on the subject.
- I would be interested in a workshop on the subject.
- I am not interested in the subject; it doesn't affect me.
- Other, please specify.

Table 2. Conservators Who Work Alone

Specialty	Number	Percent
Objects	10	31
Paintings	9	28
Wood	6	19
Book & Paper	4	13
Textiles	3	9
Architecture	0	0
Photomaterials	0	0
Natural Sciences	0	0

TOPICS

- Effect of hazardous materials on conservators (includes reproductive hazards)
- Works of art that may themselves prove hazardous to your health
- Handling and disposal of hazardous materials
- Safer substitutes for hazardous materials
- Selection and use of respirators and other personal protective equipment
- Laws that relate to occupational health and safety
- Ventilation systems
- Fire safety
- Power tool safety and machine guarding

If we combine percentages for topics B and C to indicate avid interest, and those to responses A and D to show little interest, we may conclude that the topics with the greatest need for information are safer substitutes (85%) and hazardous materials (72%). Power tools were of least concern (22%), followed by respirators/PPE (44%) and fire (46%).

Respiratory/PPE is an interesting category to examine more closely. Though this category ranked low when compared with other areas of greater concern, 44% of respondents indicated some interest in the topic. When we then compare the level of interest in this category with responses to Question 16, relating to owning a respirator, some provocative results emerge. Question 16 is reported next.

Question 16. Respirator ownership

Do you own a respirator? (yes or no) Have you had a fit test to be sure that the respirator will protect you? (yes or no) Who did the fit-test?

One hundred forty-four (89%) of the individuals surveyed own a respirator. Of the 144 who own a respirator, 69 conservators, or 48% of individuals who own a respirator, had not been fit-tested. Of the 75 (52%) individuals who had been fit-tested, 32—nearly half—may have been inadequately tested (See Table 4).

There are many issues surrounding fit-testing. It is not possible to fit-test oneself. When fit-tested by a sales representative, one is limited to the respirator brand available, and not every brand fits every face. Moreover, the sales representative has an

Table 3. Information Needs (Based on Entire Survey Population)

Response Selected	A Have Enough	B Could Use More	C Interested in Workshop	D Not Interested	E Other
Topic					
Hazardous Materials	27	61	11	1	-
Hazardous Art	14	63	5	18	1
Handling & Disposal	34	53	7	6	-
Safer Subs	12	75	10	2	-
Respirators & PPE	53	35	9	2	1
Laws	29	54	4	12	1
Ventilation	40	46	6	8	-
Fire	47	44	2	7	-
Power Tools	40	19	3	37	1

Table 4: Individuals Performing Fit-test

Description	Number Reporting	Percent
Self	9	12
Colleague	9	12
Sales Rep	8	11
Don't Recall	6	8
TOTAL	32	43
Hygienist/Safety Personnel	15	20
Graduate School*	6	8
Government/Municipality	6	8
Outside Contractor	5	7
AIC 1997/Kathy Makos	4	5
ACTS/Monona Rossol	3	4
OSHA	3	4
Use of Supplied Air	1	1
TOTAL	43	57

*The University of Delaware was the most frequently cited.

interest in selling this product so we can not regard this as a wholly unbiased procedure. Several individuals mentioned that their fit-tests had been performed long ago. Ideally, fit-testing should occur on a yearly basis.

It is also instructive to compare the response to Question 16 with Question 10. Eighty-six of 161 individuals replied A to Question 10, indicating that they had enough information on respirators and other personal protective equipment. Eighty-one individuals who responded A to Question 10 also responded to Question 16a, in which we inquired about fit-testing. Of the 81 who also responded A to Question 16, 28 had not been fit-tested at all; 53 had been fit-tested, but we do not know if

they were adequately tested. The five who did not respond to the fit-test question presumably do not own a respirator.

Despite the low priority placed on the need for respiratory/PPE information, conservators clearly need information on and training in fit-testing. As a result of these findings, we would recommend the inclusion of the following questions for further study:

- Does your organization or company have health and safety staff, contractor, or other resource?
- Do you have a fume hood or other method of extraction?
- How long since your last fit-test?
- Did you have a medical exam prior to fit-testing?
- What is your age or age range?
- How many years have you worked in conservation?
- For males, do you have facial hair?

Despite the low priority placed on respiratory/PPE information in question 10, the need to continue providing fit-testing and training among conservators is clear. Liability issues for performing fit-testing for the AIC membership must be weighed against the obvious health benefits of responsibly providing this service.

Question 15. Chemicals used

Do you have or use any of the following substances?

The chemicals were chosen from a list of chemicals compiled by the Health and Safety Committee specifically because of their potential for use with personal protective equipment

(PPE). According to the results of the survey, the three chemicals most frequently used by individuals who always work at home all of the time are commercial paint strippers (12, or 63%), epoxy and hardener (12, or 63%), and methanol (11, or 58%). The most common substances held by 32 conservators always working alone include epoxy and hardener (26), commercial paint strippers (25), toxic dry pigments (19), methanol (19) polyester resin and hardener (17), and methylene chloride (15). For the entire field, the most common chemical for those always working alone were the same as those chosen by the total respondent population, including epoxy and hardener, commercial paint strippers, toxic dry pigments, and methanol.

Table 5 outlines those substances that conservators have but do not use; we may conclude that conservators are retaining certain substances that they no longer use because they are unavailable to them because of factors such as convenience or cost.

Question 17. Laboratory Hygiene

Do you ever eat or drink in your workspace? (yes or no)

This question indicated that additional education is needed in issues of general laboratory hygiene, but also demonstrated that a majority of members were candid in response to our questions. Ninety-seven (60%) of members acknowledged that they eat and/or drink in their workspace; sixty-four (40%) said they do not allow food or drink in their workspace. Conservators cannot be reminded often enough of the hazards of contamination and the very real possibility of inadvertently mistaking a poisonous substance for one that is potable.

Question 18. Additional needs

What more can the AIC Health and Safety Committee do for you? Are there topics have we missed?

This question afforded respondents the opportunity to stress those areas they thought most critical as well as introduce new topics. Though ventilation did not appear to rank very high among topics on which more information is needed (see Table 3), the membership appeared divided as to its general importance (48% to 52%). More respondents asked about venti-

Table 5. Chemicals used

Substance	Working at home			Working Alone			Total Population
	Have	Have & Use	Have Don't Use	Have	Have & Use	Have Don't Use	Have & Use
Benzene	1	1	-	2	2	-	13
Methylene chloride	8	7	1	15	13	2	57
Chloroform	-	-	-	1	-	1	9
Carbon tetrachloride	5	2	3	3	2	1	11
Trichloroethylene	6	5	1	7	5	2	38
Perchloroethylene	1	1	-	2	1	-	11
Cellosolves	4	2	2	9	6	3	39
Carbon disulfide	-	-	-	-	-	-	1
Methanol	11	11	-	19	18	1	83
Hexanes	8	6	2	8	6	2	56
Ethyl ether	2	1	1	4	4	-	27
Pyridine	2	1	1	3	3	-	16
Dimethylformamide (DMF)	7	5	2	13	11	2	42
Methyl ethyl ketone (MEK)	7	7	-	11	9	2	42
Tetrahydrofuran (THF)	1	1	-	-	-	-	10
Thiourea	1	-	1	5	2	3	16
Powdered dyes	5	2	3	12	10	2	63
Toxic dry pigments	8	7	1	19	18	1	83
Commercial paint strippers	14	12	2	25	21	4	87
Epoxy & hardener	12	12	-	26	25	1	110
Polyester resin & hardener	8	8	-	17	16	1	74
Fumed silica/microballoons	4	3	1	13	13	-	69
Uncoated lead weights	6	6	-	10	9	1	22
Thymol	8	7	1	10	7	3	31
Orthophenyl phenol (OPP)	4	3	1	6	6	-	24
Napthalene (moth balls)	2	2	-	9	7	2	24

lation in response to this question than any other single topic. They wanted to know, for example, how to evacuate harmful fumes from a space, where to turn for specifications, how to communicate with engineers and building personnel, and more about low-tech, small, and packaged systems.

A number of conservators asked for guidance when working on-site. They wanted to know, for example, more about working in spaces occupied by staff and the public, about scaffolding, and about biological hazards. More information about pest management, working with mold, and protocols for responding to contaminants in a disaster were also requested.

Conservators were also eager to add to our list of substances (Question 15) about which more safety data are needed. Information about the properties, uses, and disposal of hazardous materials, as well as knowledge of safer substitutes, received repeated

mention. The long-term effect of solvents on artifacts and people, blending of solvents, and their use, storage, and disposal were cited as noteworthy topics.

Conservators also volunteered comments about future directions for AIC's Health and Safety Committee. Providing updates, compiling written information, and sponsoring both short and comprehensive workshops, are seen as vital activities for the committee. Creative suggestions included placing frequently asked questions on the AIC web site, providing training for allied professionals, and encouraging cooperative efforts with government bodies, such as the National Park Service.

The Health and Safety Committee is grateful to all the AIC members who graciously participated in the survey, sharing their frustrations along with their recommendations. We were gratified by the number of members who told us how pleased they are

Table 6. Need for disposal

Substance	Number of Conservators Who Have, But Don't Use
Pyridine	28
Uncoated Lead Weights	27
Carbon tetrachloride	25
Methyl Ethyl Ketone (MEK)	24
Thymol	23
Cellosolves	22
Hexanes	20
Dimethylformamide (DMF)	20
Methylene chloride	18
Methanol	17
Trichloroethylene	14
Orthophenyl phenol (OPP)	14
Commercial Paint Strippers	13
Benzene	12
Powdered Dyes	11
Ethyl ether	10
Thiourea	10
Chloroform	9
Toxic Dry Pigments	8
Polyester Resin & Hardener	8
Napthalene (Moth Balls)	7
Fumed Silica/Microballoons	7
Tetrahydrofuran (THF)	6
Epoxy & Hardener	6
Perchloroethylene	4
Carbon disulfide	4

with the work we are trying to accomplish and how important they regard the timely distribution of health and safety information.

The committee wishes to give enormous thanks to Donna F. Stroup for her generous input in developing and analyzing survey results. For more detailed information about this survey, please contact Hilary Kaplan.—Hilary Kaplan, Health and Safety Committee Chair,

NOTES

1. At the fall 1996 meeting members of the committee included Hilary A. Kaplan (chair), Kathy Ludwig, Kathryn A. Makos, Dan Riss, Chris Stavroudis, and Shelley Sturman. Catharine Hawks joined the committee in 1997.
2. This figure based on membership records as of September 29, 1997, was obtained from the AIC office.
3. The standard value for power in a scientific survey is 80%. Power is the ability of a study to detect a difference that really exists.
4. While respondents were encouraged to comment on any topic (response E alone or with A-D), we limited the A-D response to one choice. C demonstrated a higher level of interest than B.