A PREVENTIVE CONSERVATION GUIDEBOOK

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Master of Arts

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DEDICATION

This work is dedicate to my parents, Roger and Lorrie Graham, who have given me the problem-solving skills to get here, the ethics to deserve it and the creativity to do it well. Thank you for giving me the organizational skills to handle all the information, books and articles necessary for this project, and the floor to pile it all on. Thank you for being my biggest fan and for refusing to let me be my worst critic. Thank you for being a bouncing board for ideas, stress, moods, rants and raves, and for telling me to knock it off. Thank you for making me such a perfectionist that this project took at least a year longer than planned, for I know it is better for it. And thank you for being so proud of me, and giving me the tools to be a person I can be proud of. I appreciate your support much more than I say.

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CHAPTER I
THE PHILOSOPHY OF BEING A COLLECTIONS MANAGER

Museum theorist and Emeritus Professor of Art History at UCLA, Donald Preziosi states,

We live today in a profoundly museological world—a world that in no small measure is itself a product of effect on some two centuries of museological meditations. Museums are one of the central sites at which our modernity has been generated, (en)gendered, and sustained over that time. They are so natural, ubiquitous, and indispensable to us today that it takes considerable effort to think ourselves back to a world without them, and to think through the shadows cast by the massive and dazzling familiarity of this truly uncanny social technology. Our world is unthinkable without this extraordinary invention (Preziosi 97).

In response to this quote, Janet Marstine, Director and Founder of the Institute of Museum Ethics at Seton Hall University writes in New Museum Theory and Practice: An Introduction, “A Museum theorist Donald Preziosi asserts, museums are such a dominant feature of our cultural landscape that they frame our most basic assumptions about the past and about ourselves” (1). By this interpretation, Marstine has given an extraordinary amount of prominence to the museum as an “institution.” If she is referring to the formal structure or to the idea of a museum as a center of modern thought and practice, Marstine is either ignoring or overlooking that which is perhaps the most important offering of a museological institution: its holdings—the collective items that represent our cultural heritage and provide the information and knowledge that form our most basic
assumptions about the past and ourselves. Cultural works have long been what is seen as the definitive representations for our understanding of antiquity. Through examination and studies of artifacts, we draw conclusions, answering questions such as, who were these people? What did they do? How did they view themselves? What was important to them? This has not changed with the societies of modern times. What truly has the largest impact on our identity as an evolving culture and our understanding of our evolutions is the cultural heritage which is housed within museological institutions. If this concept is correct, then museums are prominent, but not as iconic cultural centers in and of themselves, but rather as the stewards of cultural heritage. While a museum can, in fact, be a center of culture within society, it cannot exist as such without the cultural representations contained by the collection.

Though debatable within the museological field in theory as well as in practice, this line of thought places collections stewardship as the most important responsibility of a museum. The use of the term “responsibility” is paramount, as the operations of museums are often determined and discussed in terms of “functions.” While collections care is a function of museum operations, those within the museum community need to acknowledge that there are ethical responsibilities associated with their roles as museum professionals that must be given appropriate consideration when weighed against other functional needs, especially in terms of resource allocation. In his text, Museum Ethics, Gary Edson, Director of the museum training program and Executive Director of the university museum at Texas Tech, argues that if collection preservation is part of an institutions mission, any staff member not advocating for preservation is being unethical.
“This assumption is based to a degree on the duty incurred through an action (employment in the museum) and the implicit promise to care for collections” (197).

Respect and responsibility- two key terms too frequently missing from discussions of collections care and museological operations- are the underlying philosophies behind the concept of “public trust.” Definitions of public trust often refer to a governmental responsibility to care for the public well being or to the responsibility of society to act for the greater good of all, rather than being directed by individual concerns. In this arena, the idealistic end result of an arrangement involving public trust is a perpetual culture. A definition of public trust on the site Wikipedia presents the topic in a way that sparks a new direction of thinking about public trust and the responsibilities of cultural heritage stewardship.

The concept of the public trust relates back to the origins of democratic government and its seminal idea that within the public lies the true power and future of a society; therefore, whatever trust the public places in its officials must be respected (“Public Trust”).

If that “trust” is cultural heritage, the responsibilities of society are not only to one another (the public), but also to the tangible artifacts, or the trust itself, that demonstrates the heritage. When the public has selected representatives, whether elected official or institution, with the power to manage its cultural perpetuity, these representatives must handle the trust placed in their hands with respect. The responsibility lies not only in caring for cultural heritage because there is a sense of respect for the public and society as an entity, but more so because there is a need to respect the cultural heritage in both its tangible and intangible forms. In other words, we care for the objects because the objects require care, rather than to show respect for the public by caring for its objects. If the
latter were true, as the public’s perception of the value of its heritage diminishes, the level of care for its cultural heritage will decrease as well. The philosophy of public trust is formed on the belief that there is benefit to preserving culture for future generations, regardless of if the benefits are fully apparent and valued by the public today.

It is important to make this distinction because the opposite view allows stewards of cultural heritage to base standards for care on the expressed requirements set by the public. In many cases the precedent might be set by a specific donor’s or lender’s previous standard for care, regardless of said donor’s or lender’s understandings of material needs. The wishes of individuals may be in conflict with the standards for collections care that are ideal for the object(s). A situation encountered through my position as a graduate assistant at a university art gallery explains this difference. When receiving work for a large-scale ceramics exhibition, I was charged with traveling to the home of a prominent American folk-artist to courier work. When a number of objects were selected for inclusion in our exhibition, this artist picked up a large ceramic piece, placed it in the backseat of my personal vehicle and buckled it in with a seatbelt. Even with minimal experience with art handling, I observed the potential threat that this means of handling and transportation and lack of proper packaging would put on the artwork. When it came time to return the body of work, the easy and most convenient thing to do would have been to say, “This is how the artist himself handled the work, and therefore this is how I can get away with handling the work.” Internal and external pressures make it far too easy to set minimum standards for care. Yet, this does not put into consideration the needs of the objects, which I chose to place as priority, setting a higher standard of care by packaging the objects appropriately and safely for return.
May Cassar, Professor of Sustainable Heritage at the Bartlett School of the University College, London and author of *Environmental Management: Guidelines for Museums and Galleries*, argues that by simply entering the museum an object is at risk of losing its “nature” given its placement within a new context and an environment which may potentially be hostile. She says,

…there is one overriding imperative for objects of every age, composition and condition: Preservation. The museum assumes the responsibility for maintaining the object’s physical stability, to slow down the processes that cause decay (14).

The term “preservation” will from this point be stressed in a significant manner as a way in which museums can carry out responsibility to the public and respect the object placed in its trust.

This discussion has outlined the basic philosophy of collections management, or rather what I refer to as the philosophy of “being a registrar”- why we do what we do. We serve as collections managers because we believe in the benefit of cultural heritage stewardship, and we follow through on this belief by respecting our collections and placing their needs as priorities. Whether it is written directly into their job description, their institutional mission, or exists as an unspoken understanding of the responsibility of the position, everyone who accepts the management of a cultural heritage collection must subscribe to this philosophy. It is, or rather should be, the foundation of everything we do within this field. As Edson would state, to do otherwise would be unethical.

As a second year graduate student in the Arts Administration program at The University of Akron, I had the obligation of developing a thesis topic, and subsequent paper. Initially, I attempted to pin-point a narrow topic of museum registration that,
through the process of researching and writing a thesis paper, would become my specialization. I thought about this both in terms of my interests and what would be the most beneficial specialization for me to have in my impending job hunt and career. After months of contemplation, I came to the realization that no single research project would make me an authority on anything, and that most of what I would need to know throughout a career in collections management would come through the avenues of personal experience, trial and error, peer advice, research, training and common sense.

Back at square one, I posed the following question to myself: “What can I do that will prepare me to be the best collections manager I can be?” The answer was that I felt it was important to ensure that through my career I always remembered why I was doing what I was doing, and did my job with that motivator in mind. This, I decided, would be my personal, professional philosophy for collections care, which would serve as an underlying set of ideals and ethics, determining each act I would make within my career.

As modern advances propel an ever fluid technology and best practices continue to change, I feel that it is important for my professional philosophy to remain constant, rooted in foundational principles.

The discussion that was presented earlier serves as the foundation for my professional philosophy and explains why I have chosen to be a museum registrar. Taking direction from Cassar and many others in the field, I value the responsibility for preservation museums have. Yet, I believe there much more that a registrar can do for their collections than simply "slow down the processes that cause decay," and that is to, whenever probable, prevent the processes from beginning. This is referred to as preventive care, or Preventive Conservation- a relatively new and not necessarily widely
accepted theory. Preventive Conservation, I believe, takes my philosophical foundation further by outlining how I will chose to carry out my responsibilities as a registrar.

Because I believe so strongly in the role museum registrars can play in protecting cultural heritage, I have thought a great deal about how this research project could become a useful tool for registrars. It is my goal for this paper is to be a handbook for registrars to begin subscribing to and integrating Preventive Conservation practices into their personal belief system and daily operations. In attempt of this, I will discuss the term, present information pertaining to its practices and introduce a model for providing quality collections care through a combination of Preventive Conservation theory and continuing education.
Preventive Conservation means to think differently, so that: yesterday’s ‘object’ becomes today’s ‘collections’; yesterday’s ‘room’ becomes today’s ‘buildings’; yesterday’s ‘individual’ becomes today’s ‘team’; yesterday’s ‘present’ becomes today’s ‘future’; yesterday’s ‘professionals’ becomes today’s ‘public’ (in its broad sense); yesterday’s ‘secret’ becomes today’s ‘communication’; yesterday’s ‘how?’ becomes today’s ‘why?’ (de Guichen 5).

There is overlap in the terminology of the field of museology, specifically when defining the differences between preservation and conservation. According to the Glossary of Archival and Records Terminology by Richard Pearce-Moses (Society of American Archivists), preservation is defined as “the professional discipline of protecting materials by minimizing chemical and physical deterioration and damage to minimize the loss of information and to extend the life of cultural property” (“Preservation”). In a less scientific, and perhaps more humanistic view of the discipline, the National Park Service (NPS) of the U.S. Department of the Interior describes preservation as a process “about deciding what's important, figuring out how to protect it, and passing along an appreciation for what was saved to the next generation” (“National Park Service”). Using similar terminology, Pearce-Moses defines conservation as “the repair or stabilization of materials through chemical or physical treatment to ensure that they survive in their original form as long as possible” (“Conservation”). To highlight the differences between
the two processes, preservation serves as a discipline designed to protect objects, while conservation seeks to correct object flaws; preservation is concerned with damaged and undamaged objects, while conservation is concerned only with damaged objects; preservation seeks to minimize damage, while conservation seeks to reverse or repair damage.

The third term associated with the others is restoration. Restoration is the process of returning an object as closely as possible to its original condition in an effort to reduce the amount of information that is lost (Pearce-Moses, “Restoration”). It is much more of an aesthetic effort than preservation or conservation, which primarily deals with condition and stability, and secondarily with appearance and loss of information. All of these activities serve essentially the same goal- caring for our cultural artifacts and heritage through mechanical, non-invasive or indirect treatment, in order to preserve our understanding of the objects in relation to heritage and prolong their life.

A more recent term to enter the field of collections management is Preventive Conservation. The practice of Preventive Conservation falls within the umbrella of preservation, which, as a discipline, is more theoretical than conservation. Preventive Conservation is the understanding and practical application of preservation- the means one implements in attempts to preserve- though it is often used hand-in-hand with traditional conservation methods to provide the best quality of care for a collection. Preventive Conservation can be understood as an act or means of achieving preservation. Preservation is based on the concept that the less damage to collections, the better. Conservation is based on the concept that repairing or reversing damage to collections is necessary and can minimize further damage. Preventive Conservation suggests that the
principles and understandings of both preservation and conservation can be applied to prevent damage and/or deterioration from even occurring.

Preventive Conservation techniques are built on the assumption that all objects are at risk of eventually disappearing. The antidote to this process is to care for artifacts in a proactive manner, rather than in the reactive approaches of conservation and restoration. With each of these two approaches, damage has already begun or has significantly reduced the physical or conceptual nature of the piece. The efforts of conservation and restoration are performed in response to damage or inevitable deterioration. Preventative Conservation seeks to eliminate the necessity of such efforts. By providing overall collections care, damage to an entire collection can be decreased, thus lessening the necessity of time consuming and costly object-specific care.

While Preventive Conservation is used to preserve original information and prolong the life of collections, the term is defined more by a theoretical approach to cultural stewardship within the museological community. Rather than approaching collections care with a heavily scientific understanding of materials, as in conservation, Preventive Conservation combines technical approaches with a flexible, and rather organic, philosophical understanding. Preventive Conservation makes use of the same basic understandings of materials, environmental conditions, and deterioration processes, but it approaches collections care with a ‘big picture’ mentality- a concept that is relatively new among the preservation and conservation fields.

Traditionally, Preventive Conservation has focused on the provision of proper environment, quality storage, and safe handling to lessen the predictable, unfavorable effects of a normal course of action. However, recent interpretations have been broadened to include new strategies, such as assessment, management, and continued education (Edson 180).
Not even ten years ago, the concept of Preventive Conservation was referred to in the industry as a ‘passing fad.’

Contrary to what some members of the profession may believe, Preventive Conservation means much more than mere maintenance and climate-monitoring. It is much more than a passing fad and will gradually become part and parcel of the museum profession to which it is certain to bring profound change. These will involve training, organization, planning and the public (de Guichen 5).

Today, Preventive Conservation is comprised of a wide spectrum of activities, including, but not limited to, environmental controls, accessibility, object movement control, handling, processing, record-keeping, inventorying, staff training, loss prevention, emergency disaster planning, and exhibition and storage design. While Preventive Conservation is often thought to be a hands-on approach, it is still very much an administrative function in that it often will be initiated by, and its success determined by, policy. It is also administrative in that such policies for collections care should incorporate a number of professionals within a museum’s immediate and indirect staff structure. No longer is collection care the sole responsibility of a conservator, collections manager or registrar (Fahy 251-3).

Who is the Preventive Conservationist?

In the late 1990s, Preventive Conservation as a theory began gaining acceptance within the museological field. A slew of articles surfaced about this “new” approach, many of which were written by conservators, as were current existing reference texts on the topic (Kissel 34). There are advantages when conservators take the reins in Preventive

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Conservation care, as “they derive unquestionable benefit from their constant contact with the works and their great sensitivity to their materiality,” (36) states Elénore Kissel, a conservator-restorer of graphic documents and a consultant in Preventive Conservation. However, conservator ownership of Preventive Conservation can have a downside. A close familiarity with objects and materials can inhibit conservators from looking at the “big picture” in terms of how Preventive Conservation practices are affected by and/or affect museum functions in general. Their highly specific scientific training may result in an “ignorance of the workings of government and institutional ‘corporate culture’” (36). Preventive Conservationists must be able to balance the needs of the collection with the needs of the museum and its available resources. For example, a Preventive Conservationist may recommend that, in the best interest of the collection, the permanent collection storage spaces be completely refitted with new storage equipment. If the organization does not currently have the funding, is running at a deficit, or has made financial commitments to improvements or updates in other areas of the institution, this recommendation may not be feasible. Given such factors, a Preventive Conservationist needs to be able to provide alternate, and occasionally creative, recommendations. Kissel states that conservators may be too focused on object-specific needs to think about the big picture of overall collection needs (33). This brings up the concept of the micro (object-based) approach, of which conservators often subscribe, versus the macro (environmental or collections-based) approach, which will be discussed in further detail in chapter three.

A Preventive Conservation policy should be built from a foundation that considers the institutions administrative, financial, and spatial restrictions. As discussed
briefly, one of the largest aspects of the Preventive Conservation practice involves environmental management; yet control of the museum environment often lies outside the realm of a conservator’s authority, resulting in the need to work closely with museum administration. Conservationists often are not brought into the administrative decision making level of the institution. While an understanding of object needs is required, it is also necessary that the position responsible for a Preventive Conservation policy is either part of the administrative structure or works collaborative with various administrative departments/offices. The importance of a unified institutional understanding of such policies will be addressed in greater detail throughout this text.

Preventive Conservation theory appears to be best adopted by those who serve as collections managers or registrars, rather than preservationist or conservationists. This is ideal as well as resourceful, as many organizations do not have preservationists or conservationists on staff. Some institutions do not even have a formal collections management position, perhaps due to the size and make-up of collections, or perhaps due to the allocation of personal or financial resources. Defining a specific person responsible for collections care is not only good for the collection, but good for the institution, as that position can be developed as having collection-specific and administrative responsibilities. It is important that whoever is responsible for the care of the collection and whoever will be developing, implement and maintaining the preventative conservation policy have a thorough understanding of the principles behind the philosophy of being a registrar, as discussed in the introduction.
A Philosophy for Preventive Conservation

The need for a personal philosophy is simple: the collections manager is the voice for a collection that cannot speak for itself. Many offices, departments and programs within an institution are charged with fighting for increasingly scarce resources. The collection cannot fight for itself. Therefore, the collections manager must be prepared and equipped not only with an idea of what resources are required and how those resources will be used, but also with a strong argument for why such resources should be invested in collections care. This is especially important as the costs of quality collections care is increasing immensely and financial resources are decreasing.

Why should Preventive Conservation be the primary focus of the philosophy?

According to Heritage Preservation, as reported in the Heritage Health Index, over 4.8 billion artifacts were held in public trust by more than 30,000 archives, historical societies, libraries, museums, scientific research collections, and archaeological repositories in the United States in 2005. Museums alone are responsible for 1.1 billion objects in public trust. This number has no doubt increased within the last three years and will continue to increase. “A Public Trust at Risk: The Heritage Health Index Report on the State of America’s Collections,” published by Heritage Preservation, in partnership with the Institute of Museum and Library Services, reports that over 630 million artifacts are at risk and in need of immediate care. A staggering figure that may have been able to be prevented through Preventive Conservation practices (A Public Trust 1).
CHAPTER III
THE HISTORICAL PROGRESSION OF COLLECTIONS CARE

The position of registrar, or collections manager, began as a “cousin to the book-keeper”—a museum employee who meticulously recorded object records into a register or ledger book (Case 5). Registrars of the past were supervised by curators, and wrote down, in ink, basic data: place and date of acquisition, type or description of specimen, cost or value, and name and address of donor, vendor or collector. Now, registrars’ records bear little resemblance to those of yesterday. Larger collections result in more data. Data is now considered part of the collection, and more value is placed on it, as the intangible collection is “the foundation of knowledge upon which a museum rests” (19). Those that value this data work off the assumption that a collection is only as good as the information we know about it. Objects themselves do not speak. Human beings are responsible for recording the history of objects and perceptions of what it is. Importance is thus directly correlated to information. Additionally, there is a greater demand for information and the registrar of today is responsible for making sure that it is collected and disseminated appropriately. Mary Case, author of Registrar’s on Record and founding director of QM2, a museum consultant firm, remarks:
Museums need information to fulfill their ethical and legal obligations; scholars and scientists need information to do their work; and officials representing the interests of the public ask astute questions about how museums safeguard their collections, dispose of objects, and spend money (18-19).

While Case addresses the traditional role of data keeper, museum registration responsibilities, and specifically the tasks performed by the registrar, have grown substantially. A registrar’s job description will now include a list of sophisticated and multi-faceted responsibilities, calling on an understanding of museological operations, administrative skills, and specialized training. How this transition has occurred throughout time is unclear, as no relevant text has been written on the history of museum registration. What we do know is the history of restoration—the precursor to conservation. The relevant bibliography of collections care texts is revealing, as restorers wrote most early references (Kissel 34).

The historical progression of collections care dates back to the time of antiquity. Early restoration practices generally consisted of repairs performed with the aim of disguising previous damage. While there was no formal or organized training for restorers as a profession, artisans who were learned and skilled in making specific kinds of objects would carry out these mechanical processes (Bachmann 1).

Formal training programs in conservation began in Europe in 1888 with an interdisciplinary approach to conservation at the Berlin State Museum. In 1921 and 1930, the British Museum and the Louvre respectively adopted similar programs. In the mid-1920s, the earliest collaborative effort was undertaken in the United States by conservator George L. Stout, chemist Rutherford J. Gettens, and museum professional Edward W. Forbes at the Fogg Art Museum of Harvard University. The first international conference
on conservation took place in Rome in 1930. The foundation laid at this conference resulted in the formation of the International Council on Museums, or ICOM in 1946; the International Institute of Conservation (IIC) in 1950; and the American Institute of Conservation (AIC) in 1973 (Bachmann 1).

Preventive Conservation approaches have been evidentially implemented as early as the 1800s. The Alte Pinakothek was constructed in 1826 by King Ludwig I of Bulvaria to house his collection of European paintings. A controversial decision in its day, a location well outside the historic center of Munich was selected due to an abundance of clean air. This country air would, presumably, help to preserve the royal collection. This was a Preventive Conservation decision, well before the term was coined (Levin).

At the turn of the 20th century, we begin to find more substantial written evidence of the early methods of mitigating deterioration. Hartley H.T. Jackson, a former Chief of the Division of Biological Investigations for the United States Department of Agriculture, wrote in the 1920s about rather sophisticated approaches to collections care, discussing some of the early practices of Preventive Conservation.

Neatness, accuracy, system and order are absolute essentials. The office of a mammalogist should be as scrupulously neat and orderly… since dirt is injurious to specimens and disorderliness increases the possibility of all sorts of errors. Specimens not in actual use should be kept inside cases; specimens left on the tops of cases or tables are subject to injury from dust, insects, and other agents. It is well, in a large collection, to have all specimens put away by one individual, who should be held responsible for properly locating each specimen when it is needed… Too much crowding of specimens is destructive, and should be avoided… Extreme care should be exercised in handling specimens, and each one whether common or rare should be treated as sacred. The common mammal of today may be the rare one of tomorrow… (113).
When it became clear that some early conservation methods might have compromised the stability of artifacts, non-interventive methodologies, which led to the philosophies and practices of Preventive Conservation, were developed (Edson 200). Marstine elaborates,

> As restoration evolved into the conservation profession, the position broadened to encompass the diverse remit of collections care and all that the term entails. The principals of ‘do not harm’ and ‘reversibility of materials and procedures’ inspired a new era of conservation research to complement and support treatments (89).

While discovering the faults in previously accepted best practices helped, other factors, such as rapid increases and changes in collections and collection environments fueled the drive towards Preventive Conservation. Gael de Guichen, Honorary President of the International Committee for the Conservation of Mosaics and well-known conservator, argues in “Preventive Conservation: A Mere Fad or Far-reaching Change?” that Preventive Conservation was developed in response to drastic environmental changes. “What has previously been private heritage protected by the individual owner against mild forms of aggression has now become public heritage which has to be protected by the public against new and much more violent forms of aggression” (4).

However, it was not until the mid-1970s that Preventive Conservation became a topic of professional conversation and scholarly debate within the museological community (Edson 199-200). The 1976 annual meeting of the AIC in Boston formally presented Preventive Conservation as an applied concept for anthropological collections care. During the mid-1980s, one of the first national assessment surveys on collections management was conducted. According to the study, while museum collections were growing steadily, about two-thirds of museums surveyed had not assessed the condition
of half of their holdings or more. As published in Museum News (Vol. 64, 1985) by Jane Slate, in the article “Caring for the Nation’s Common Wealth: A National Study Assesses Collections Management, Maintenance, and Conservation,” “Available information indicates only 22% of the objects did not require special attention for their continued care; about half of the remainder were in need of special attention, and the needs of the other half were unknown” (qtd. in Edson 201).

George Washington University (GWU) served as a leader in the efforts to implement the philosophies and practices of Preventive Conservation in collections management, as well as being one of the first United States institutions to offer formal training in collections care. “Since the late 1970s, this graduate museum studies program has been training and graduating museum professionals that are knowledgeable about this approach to caring for collections” (Edson 200). Master of Arts candidates in Museum Studies at GWU are now required to complete six credit hours in Preventive Conservation (Museum Preventive Conservation I & II), covering topics from conservation ethics and team approaches to conservation, to conducting risk assessments and grant proposal preparation for collections care initiatives. Similarly, other academic institutions, such as the Museum of Texas Tech University and the University of Nebraska State Museum, have incorporated Preventive Conservation training into their graduate degree museological programs. Additionally, conservation laboratories such as the Getty Conservation Institute (GCI) and the Canadian Conservation Institute (CCI) offer professional level training programs on this topic.

GCI implemented a research program in Preventive Conservation in 1985. Beginning in 1987, GCI, operating as part of the J. Paul Getty Trust, offered an annual
course in Preventive Conservation for a number of years. This two-week course titled ‘Preventive Conservation: Museum Collections and Their Environment” was designed for mid- and senior-level conservators of museums, libraries and archives, regional conservation centers, and training institutions, as a means of updating participants technical knowledge and providing methods for effectively incorporating Preventive Conservation theories into their institutional policies and practices.

The mere philosophy of Preventive Conservation was widely scrutinized in the museum community for many years. “This point is illustrated by the general absence of articles and subject listings, specifically for Preventive Conservation, in the Art and Archaeology Technical Abstracts (AATA) before 1986” (Edson 200). Even today, many within the conservation and museum professions have not accepted its practices. Still, Preventive Conservationists continue to make improvements to the field, providing higher quality standards of collections care and ensuring increased longevity for the life of cultural heritage. The most fundamental change that Preventive Conservation has brought to collections care is the transition from a “micro-care” approach to collections environmental management to that of a “macro-care” approach.

Until the onset of Preventive Conservation, the conservation profession allocated its training, energies and resources almost exclusively to caring for individual objects. Cultural history has shown that since the beginning of conservation as a profession, the number of museums, and the number of objects within museums, has increased. What was found, as a result of this, was that dedication to individual object care requires that the vast majority of collections go under-serviced, as there is only so much staff and resources to spread around.
If a major portion of our heritage is to survive, it must be cared for collectively rather than individually. For the conservator this means focusing on ways of preventing or slowing the deterioration of objects through control of the collections environment. It means, in short, Preventive Conservation (Levin).

Since conservation has historically focused on the “micro-care” of objects, conservators are not trained or accustomed to thinking in this broader-sense. And since conservation as a professional still serves a vital need for the museological community, most continue to be trained and practiced in treating objects on case-by-case specificity. Thus, museum registrars have been recently made a similarly vital component to collections care by providing the “macro-care” for cultural heritage collections.

What the profession is seeing now in terms of the future progression of collections care is a shift in emphasis of research from the macro environment to the micro environment. Essentially, collections management has gone from focusing on the smallest unit of measurement, a single object, to a complete reverse in thought, looking at the largest unit of measurement, the environment. The field is also seeing a downward trend in research focus, shifting from the macro-environment, gallery exhibition and storage spaces, to the micro-environments contained within, such as display cases and storages cabinets (Dardesii).

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i Konstanze Bachmann is a conservator and author of Conservation Concerns: A Guide for Collectors and Curators.

ii Kathleen Dardes is a textile conservator, former Senior Program Coordinator for the Getty Institute Training Program, and is currently the head of the Getty Conservation Institute Education Department.
A Public Trust at Risk: The Heritage Health Index Report on the State of America’s Collections was the result of the first comprehensive survey assessing the condition and preservation needs of United States cultural heritage collections. Approximately a year prior to its publication, the Heritage Health Index (HHI) survey was distributed to over 14,000 institutions of all sizes, from every United States state and territory. These institutions included archives, libraries, historical societies, museums and scientific repositories and research collections. In attempt to evaluate the condition of collections for which they have a preservation responsibility these institutions were asked to report on all aspects of preservation and conservation (“Heritage Health” Ch. 1-2).

The HHI reports that over 4.8 billion objects are being cared for in the United States. Results found that artifacts in America’s collections, including 189 million natural science specimens, 13.5 million historical objects, and 4.7 million works of art, among many others, “are at risk and require immediate attention and care” (A Public Trust 2). As of the time of the survey, results showed that the most immediate preservation need for collection holding institutions was for environmental controls. The following list includes a sample of the results selected to show the severity of the state of need:
• 26% of surveyed institutions have no environmental controls to protect their collections from receiving damage due to temperature, humidity and light.
• 59% of surveyed institutions have the majority of their collections stored in areas too small to safely accommodate them.
• 65% of our nation’s collecting institutions have experienced damage due to improper storage.
• 56% of surveyed institutions do not have sufficient security in place for their collections.
• 80% of surveyed institutions do not have a written emergency plan that includes collections, with staff trained to carry it out.
• 80% of surveyed institutions do not have paid staff dedicated to collections care.
• 70% of surveyed institutions do not have a current assessment of the condition of their collections (A Public Trust 2-8).

The Heritage Health Index painted a grim picture. According to results, if conditions remain as unchanged, over 600 million objects of cultural heritage will be at risk of no longer being accessible for exhibition and research. It is likely that this number grows by the day. Following the survey summary, Heritage Preservation presented recommendations for ways to improve this situation. These include paying attention to what local institutions are doing to improve conditions, reserving funds for collections care, and advocating on behalf of these collections. Based on the findings, Heritage Preservation recommends that:

• Institutions must give priority to providing safe conditions for the collections they hold in trust.
• Every collecting institution must develop an emergency plan to protect its collections and train staff to carry it out.
• Every institution must assign responsibility for caring for collections to members of its staff.
• Individuals at all levels of government and in the private sector must assume responsibility for providing the support that will allow these collections to survive (A Public Trust 1).

Results from the Heritage Health Index served as the motivation for this thesis project. When preparing to write this report, I knew that I wanted this project to be a resource for collection holding institutions. One of the ways that I could do this was to
provide information on the current best practices in Preventive Conservation. However, the scope of that undertaking would be far too large for the capacity of this project. Also, four editions of the reference book, *The New Museum Registration Methods*, which was published by the American Association of Museums and edited by Rebecca Buck and Jean Gilmore, provide overall guidelines for general topics in collections management.\(^i\)

In order to avoid regurgitating general information, I decided to narrow down the topics of best practice to those which institutions appeared to be in the most need of additional information, and to provide a practical application focus and in-depth discussion of those topics. When I discovered the HHI report, over three years had passed since the survey was completed. Feeling that it was important to get a current assessment of what institution needs are, yet knowing the complications of a single individual replicating the Heritage Preservation project, I developed a survey based off the HHI, but designed for cultural holding institutions within a single demographic area— the state of Ohio.

**Methodology**

This assessment instrument was designed using the Heritage Health Index survey as a basis for category structure and question format. Permission was granted by Heritage Preservation to include certain questions verbatim from their survey, which would allow, if desired, for conclusions to be drawn by comparison. Surveys and letters of invitation to participate were mailed to 193 collection-holding institutions within the state of Ohio.
Heritage Preservation’s list of Heritage Health Index’s participating Ohio institutions served as the foundation for this mailing list. Institutions likely to collect predominately live specimens (i.e. botanical gardens and zoos) were removed, as were institutions likely to manage predominately archival works (i.e. libraries). The remainder of the institutions that were added to this list came from the directory of Ohio museums as supplied by the Ohio Museum Association (OMA).

All institutions were mailed a survey packet on December 20, 2007. This packet consisted of an introductory letter explaining the scope and goals of the assessment, as well as the survey itself. The survey consisted of a two-page, double-sided list of questions, including multiple-choice, multiple-answer, and open-ended formats. In order to maintain institutional anonymity, no questions were asked that would provide identification information. A requested return date of February 1, 2008 was included in the informational letter. With eighty surveys returned, the response rate was 41.5%.ii Information provided by the completed surveys was manually entered in an Access Database, designed specifically for this project. With each question, surveys which had failed to provide responses for that particular question were eliminated, and the remaining entries were calculated for statistical data. Results were double-checked for accuracy on a randomly selected basis. An attachment containing the statistical results can be found in Appendix B, as is a copy of the survey documents.iii

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i The Fifth edition is currently being edited by Buck & Gilmore and is slated to be released in 2009.

ii This percentage does not reflect the number of surveys that were returned or undeliverable.

iii Appendix A
CHAPTER V
BEST PRACTICES AND RESOURCES IN PREVENTIVE CONSERVATION

Condition of Collections: Inventorying & Assessment of Collection Damage

Collection inventories are done for a number of reasons, among which are opportunities to determine holes and/or update collections data, to identify objects in need of conservation, and to plan for collection-related projects. One of the most widely referenced texts on collections care is *The New Museum Registration Methods*. According to the editors, Rebecca Buck, Deputy Director for Collections, the Newark Museum, Newark, New Jersey and Adjunct Professor of Museum Registration at Seton Hall University, and Jean Gilmore, Registrar at the Brandywine River Museum in Chadds Ford, Pennsylvania, art, history and other museums should perform regularly; “comprehensive inventories every five to seven years, annual inventories for objects on loan and objects of high value, and frequent spot checks” (119). Looking at survey results, those respondents that supplied a set number of years between which they perform inventories fell, for the most part, within this range of 5-7 years. Only 6% of respondents claimed to perform inventories no more frequently than every 10 years. Of the 53% of respondents that supplied an answer not in the form of a number of years between inventories, approximately half indicated an ongoing or continual inventory. The
other half, however, indicated responses to the effect that their institution has no set policy for frequency of inventorying. Example responses include “very infrequent,” “random,” and “regular schedule not established.” However, approximately 70% of survey respondents appear to be inventorying their collections on a regular basis, meeting the guidelines of recommended frequency.

When asked what factors determine the length between inventories, 58% identified “personnel.” The next two highest selected factors were volume (the size of the collection) and time at 19.4% and 16.4%, respectively. These factors are heavily influenced by a lack of personnel. Given the volume of the institutions’ collection, inventories cannot be accomplished without an appropriate number of staff members dedicated to this function. Also, inventories cannot be accomplished successfully unless dedicated staff members are appropriately trained. Even among those who are trained, it is highly unlikely that their only responsibility is collection inventorying. As indicated earlier, there are a slew of other responsibilities that collections managers routinely perform, not to mention the unexpected day-to-day needs that arise.

Fourteen organizations, representing 17.5% of total respondents, classified themselves as being either a university-affiliated or a cultural institution. Of the remaining 82.5% of institutions, many have education written into their mission statements, or offer educational activities as part of their programming. Whenever public service is built into the institutional culture of a museum, library, archive, etc., demands arise above and beyond an employee’s prescribed job description. Often, and especially in academic settings, collections managers serve as part of a larger support system to specific constituencies, such as students or faculty. Even outside of academia, collections
managers work with and support any number of internal departments. Collections managers serve curatorial and development staff. They also service the public and educational programs by caring for objects in educational collections, providing and monitoring access to collections by scholars, researchers, and the general public, and by fielding questions by phone, email and in person from virtually anyone with an interest. Many institutions view this as a time-sensitive component of customer service.

One would not immediately view customer service as being one of the primary skills required of collections managers, but gone are the days when registrars sit alone in the vault with their collections. In fact, collection managers communicate on a daily basis with just about every department within an institution, as well as with outside colleagues and professionals, and the public. Mary Case, in an essay titled “What Registrar’s do all day,” published in Registrar’s on Record, tells a story about attempting to describe to a board trustee just what a registrar is. She does this is by going through each and every thing she did in that particular day (Case 13-33). What I imagine most of us in this field find is that while we have a “to-do list” each day, we are often pulled aside to handle other crises and other unanticipated situations. While conducting a spot-check inventory may be long overdue, collection managers might find themselves taken off task to respond to an email question from a high school student writing a report, to contact the grand-daughter of an artist whose piece was recently acquisitioned to verify information for the database, to prepare a trunk of objects from the education collection for a presentation to third graders the following day, to double-check information in the new docent educational training packet, to attend a meeting with the acquisition committee about a set of woodcut prints that may potentially be donated to the collection, and to go
to a donor’s home to accompany a painting in transit to the museum. Activities like these may arise unexpectedly in a day and the collections manager is responsible for tending to these tasks, assuming that a few unidentifiable bugs are not found in the galleries or that the director has not requested expedition of a loan request that a fellow institution forgot to send in four months ago.

There just may never be enough of one person to go around; and there is no easy solution to this problem. However, with information and systematic training, a registrar can be better prepared to deal with unexpected situations in a timely and efficient manner. Additionally, with the development of crisis action plans, chaos and bad decisions can be minimized. This is will addressed in the section for emergency planning and security.

It is difficult to offer solutions to assist collections managers with the task of performing inventories at industry standards because of the frequency of scenarios like the one above. At best, I can provide a few tips that I have found to assist myself with the task of performing inventories on the collection I manage. The first is that, due to the nature of our position, flexibility is essential. Being able to set aside a dedicated amount of time to a project that will prove to be long, involved, and potentially compromised by interruptions is a luxury. It may be best to divide tasks into small, manageable segments. Rather than initiating an exhaustive inventory that lasts three weeks every five years, divide the collection by storage areas, medium, or any other method of division that makes sense for that particular collection. Set a goal of inventorizing a limited number of pieces, a section of flat files, or even an individual cabinet. This approach will minimize the amount of time dedicated to this specific project and allow for ease of stopping and
starting as other needs arise. Biting off little chunks at a time and staying dedicated to the process may make it more feasible to reach the goal of a complete inventory within industry standard time frames.

Another suggestion is to charge co-workers, or even the entire staff, with the shared responsibility of inventorying. The Smithsonian American Art Museum in Washington D.C. assigns a different staff member within the Registrar’s Department to complete a spot check of the objects on permanent display in the museum on a rotating schedule. There are many benefits to this process. Dividing responsibility can release individual staff members to perform other tasks so the burden is not solely on one person. Including everyone in the process promotes a unified sense of responsibility and accountability. Each time staff members come on the rotating schedule, they are reminded about the part they play in caring for the collection. Also, multiple sets of eyes on objects can help identify different issues and risk factors, as we all look through different lens.

At first glance, with 55% of collections being reported in “no need of conservation/preservation,” it may appear that we are doing an above average job at caring for our cultural heritage. However, this means that almost 45% of collections are either in need or in urgent need of conservation/preservation. Worse yet, the condition may be unknown. We are currently unaware of the status of almost 14% of Ohio’s cultural collections, which may potentially be in severe need of conservation/preservation. These objects may be beyond the point of repair or even missing. Compared to the HHI inventory from 2004, fewer of Ohio’s cultural heritage collections are in unknown condition than the 25% overall average in the US.¹ In Ohio, a
greater percentage of objects in assessed institutions was reported in need or in urgent need for conservation/preservation (approx. 30%) than by was reported in the national survey (approx. 23%). These figures build the case for the importance of regular and thorough inventorying.

While personnel, time and volume are major factors in determining the frequency of collection inventories, funding limitations are an underlying concern. The first step in preparing to ask for funds to rectify the need for conservation/preservation services is to conduct an inventory, giving hard evidence of the need to develop a consistent inventory program. One must first identify the need for conservation/preservation before repair work to objects can begin. Identifying the severity of a situation can help build the case to museum administrators, trustees, and donors for dedicated funds for conservation/preservation activities. Inventoring is thus a key component of Preventive Conservation and conservation, helping to identify potential situations in order to mitigate damage and helping to identify pre-existing damage in preparation for repair.

With a little bit of creativity, museums can find a way to justify inventorying as a component of another worthwhile, and perhaps more publicly beneficial, project. The State Hermitage Museum of St. Petersburg, Russia, in collaboration with The State Hermitage Museum Foundation of Canada provides a useful example. Given the universal importance of the collection holdings, The State Hermitage Museum has historically reached out to various organizations for assistance with preserving and securing its treasures. Given the size of the collection holdings, over three million objects, inventorying is no easy task. The State Hermitage Foundation of Canada has raised funds to assist the museum with a digitization project which would provide
photographs and an online searchable database for the collection holdings. There are many benefits to this project, including making information available to researchers and scholars outside of the museum, and increasing access to art lovers who may not have the option of traveling to St. Petersburg to visit in person. One of the benefits to the museum directly, however, is that, through this process, a thorough inventory of the collection will be completed- description information will be updated and linked to digital images, condition information will be recorded, and the physical location of each object will be entered into the museum's customized collections management software. While this large project was slated to take eight years for completion, smaller collections could be documented in less time and with far fewer resources (“Collection Inventory”).

Condition of Collections: Written, Long-Range Planning for Collections Care

“If you think that changing tires on a moving car is hard, wait until you try long-range planning.” Anonymous

Long-range collections care plans, typically known as preservation plans (by libraries and archives, are known by a number of other names as well. Sherelyn Ogden, Head of Conservation at the Minnesota Historical Society states, “Preservation planning is a process by which general and specific collections care needs are determined, priorities are established, and resources for implementation are identified” (Ch. 1-2). What they all have in common is a process that sets agendas for the long-range care of collections and identifies policies outlining how the development and management of
collections will occur over time. This process, in and of itself, makes long-range planning an important activity. However, there are two additional services that such policies can provide. First, the development of long-range collections care plans initiates a re-visit to an institution’s mission statement. Ogden says, “A plan validates the role and importance of preservation, helping to make preservation an equal partner with acquisitions and interpretation” (Ch.1-2). Second, long-range plans serve as an important recourse, aiding in the process of securing additional funding and resources for collections care.

Granting agencies report that applications for preservation implementation projects are often confused, revealing a lack of understanding of the priorities identified in survey reports and an inability to develop a long-range preservation plan that relates to the institution’s overall strategic plan (2).

Long-range plans for collections care are occasionally confused with conservation plans. It is important to clarify the difference. The Registrar's Committee of AAM's email listserv, has an email thread in its archives that demonstrates the distinctions between these two planning processes. The initial anonymous email that was sent out requesting information about "Long Range Conservation Plans" stated,

During a staff meeting this morning, discussion came up regarding establishing a formal ‘Long-Range Conservation Plan’ for our museum. My staff and I know what things need conservation work…they are earmarked in our database and are brought to everyone’s attention when found. However, in the past, we have dealt with conservation issues as they arise. We wish to establish a more formal document/plan to be used in concert with our Collections Policy (we are currently in the process of updating this document) and general strategic planning for the museum as a whole.

One anonymous response to this addressed issues of Preventive Conservation and made suggestions that would supplement what the institution wanted to do, making it a long-range collections care plan.
When you are considering long-range conservation plans, do remember to include things such as future storage furniture needs (flat files, painting screens, drawers, cabinets etc.) These aid in conservation efforts, and are generally very expensive items. Sometimes we think of conservation as "fixing things" that have problems, but we should also think in terms of protecting what we have so it doesn't need fixing. Also, if you correctly think of your collection records as part of the collection, then you might also add documentary file cabinets and fire resistant file cabinets to that list.

The AAM offers an Information Center for staff of AAM Institutional member museums including approximately 400 pages of Web content. In 2007, these pages were viewed close to 340,000 times, with almost 1,200 inquiries from member museum staff. According to this site, “The majority of questions—nearly 25 percent—were related to collections stewardship. Museums were particularly interested in writing a collections management policy” (“Information Center”). According to survey results, 45% of institutions do not currently have a written, long-range plan for the care of collections. An additional 21.3% of institutions do not have a written, long-range plan for collections care that is independent from their overall institutional long-range plan. These data, while showing a large number of institutions not planning appropriately for collections care, show a considerable improvement above national averages as presented in the HHI. According to the HHI, 71% of institutions did not (at the time of the assessment) have a written, long-range plan for collections care. An additional 20% only addressed preservation in their overall institutional long-range plan.

Developing and writing a long-range collections care plan is a lengthy and involved process. Implementing it is costly and even more involved. The first step in preparing such a set of policies is a preservation needs assessment, including an evaluation of policies, practices and conditions that effect collections within an
institution. These evaluations may also be identified as general conservation surveys or collections assessments. As object conservator Helen Alten states,

The general survey assesses the level of care at an institution based on a variety of factors. These include: environmental factors such as relative humidity, temperature and light; overall cleanliness, maintenance and organization; storage and exhibit furniture and techniques; pest monitoring, prevention and treatment procedures; written policies, staff procedures and funding allocations; and emergency preparedness. The resulting report, prepared by a conservator, often in conjunction with a preservation architect, provides a set of preservation recommendations for the museum to prioritize.

Traditionally, institutions beginning such a process would hire an outside consultant for assistance. Consultants can offer more experience and provide unbiased objectivity and credibility because they are not encumbered by institutional history or politics. However, they lack knowledge of the history and current practices of the institution, in addition to being costly (“Preservation Needs”). The Northeast Document Conservation Center (NEDCC) states that it takes approximately one or more days of on-site assessment, in addition to two to four days of writing to prepare the final report, requiring additional days depending on the size of the institution and collection. Costs are determined based on the number of days from start to finish to complete the final report and are calculated at a standard daily consulting rate plus travel expenses (“Assessment”).

Funding to pay for needs assessment surveys is available from some organizations such as Heritage Preservation and the AAM. The Conservation Assessment Program (CAP) of Heritage Preservation provides a general conservation assessment of institutional collections, facilities and environmental conditions. CAP is offered as part of collaboration with the IMLS. Eligible museums are granted a stipend up to $6,450 to
cover allocations for one or two assessors. Participants are expected to pay any fees above and beyond their awarded amount. CAP suggests allocating a budget of up to $900 for these costs. A fee-for-service program is also available to those institutions who do not qualify for eligibility or who wish to conduct an assessment outside of application deadlines (“The Conservation”).

AAM offers a Collections Management Assessment program (CMAP) as part of its four-step Museum Assessment Program (MAP).

The Collections Management Assessment focuses on collections management issues in the context of the museum's total operations, including mission, governance, finance, interpretation, and marketing. The emphasis is on collections stewardship, including scope of collections, acquisitions and deaccessioning, legal and safety issues, documentation, backlog, inventory and risk management (“Collections Management”).

Goals of the CMAP program include improving collections care, increasing availability of resources for collections management and increasing an understanding of collections management for institutional staff and trustees. This program involves more of a commitment to self-studying than the CAP program.

Forty-Nine percent of participants in the MAP program are institutions with annual budgets under $250,000. Fees for MAP participation work off a sliding scale, based on annual operating budgets. When applying by the annual deadline, institutions with operating expenses of $125,000 or less may participate free of charge. Rates range from $350-$750 for institutions up to and above $1.75 million. Institutions that wish to apply outside of program deadlines may do so in the “flexible participation” program. The cost is $3,000, in addition to surveyor honoraria and expenses, which typically range from $1,000-$1,150 per surveyor (“Collections Management”).
Resources are available to institutions wishing to perform their own assessment in-house. Publications include:

- **What an Institution Can do To Survey Its Own Preservation Needs** by Karen Motylewski, available through the NEDCC.
- **Assessing Preservation Needs: A Self-Survey Guide** (2003) by Beth Parkus, was published by the NEDCC.v

Once a list of recommendations for collections care needs is determined, either by in-house or private consultant assessments, a long-range plan should be written to outline the implementation of these recommendations. In 1997, AAM, in conjunction with the NEDCC, published **Preservation Planning: Guidelines for Writing a Long-Range Plan**, written by Ogden as part of the Professional Practices Series.vii

The objective of this workbook is to enable institutions to move forward toward implementation of preservation actions by establishing a clear plan based on needs. The purpose of the book is to assist institutions in utilizing the information provided in survey reports to develop a long-range preservation plan. The function of the book is to lead institutions through the process of writing a long-range plan for collections care that is a stand-alone document conforming to and influencing other key management tools in the institution (2).
This workbook was written as a result of a project by Old Sturbridge Village, the largest outdoor history museum in the northeast United States, and the NEDCC. The project was instituted to develop a written training program for museum staff to assist them in understanding needs assessments and in writing long-range preservation plans. Designed as a self-study guide, it was written for smaller and emerging museums, historical societies, libraries and archives, which seek to develop long-range plans without the assistance of outside consultants. Preservation Planning is available through AAM for $29.50 for members and $41.50 for non-members.

Collections Environment & Storage: Environmental Factors for Collections Care
(Monitoring & Mitigating Damage)

When the HHI surveyed damage inflicted on collections by environmental factors, the following elements were assessed: improper storage or enclosure, water or moisture, light, obsolescence of playback equipment, hardware or software, airborne particulates or pollutants, handling, pests, prior treatment(s) or restoration, vandalism and fire. I narrowed down the focus of this assessment to HHI’s five most commonly reported environmental factors- water, light, airborne particulates or pollutants, pests, and improper storage or enclosures. For the purposes of this study, the figures reported for “significant” and “some damage” are grouped together for each factor. The results are as follows—Light 65.3%, Improper Storage or Enclosure 65.3%, Water 37%, Pests 35.3%, and Airborne Particulates or Pollutants 30.7%. Clearly, the most severe threats to
collections are light and improper storage, Water damage is the third most common type reported. When the percentage of institutions reporting unknown amount of damages for each category are factored in, the degree of damage inflicted by airborne particulates and pollutants increase exponentially.

Water

The majority of water damage incurs in one of two ways: fire and facilities repairs. Areas of concern involving facilities, such as leaky roofs and old pipes, can be discovered during a collections management assessment, as buildings and storage environments are two areas of focus by surveyors.

Constant attention is required to minimize adverse impact due to humidity, temperature, theft, vandalism, decay, and fire. Of these, fire constitutes the most serious concern because of the speed and totality of its destructive forces. Vandalized or environmentally damaged objects can be repaired and stolen objects recovered. Fire-destroyed items are gone forever (Artim).

While this is accurate, it is also true that using water to control a fire outbreak can be equally as damaging to collections as the flames themselves. Therefore, this section will discuss various systems available for fire mitigation.

Many museums or historical societies are housed in historic buildings or buildings originally constructed for other purposes, and adapted to accommodate galleries and storage spaces. Such facilities are most likely to have wet-pipe sprinkler systems as their primary means of fire control. There are advantages and disadvantages to sprinkler systems. Sprinkler systems are one of the most safe and reliable means of fire
suppression. To this day, sprinkler systems serve as an effective and cost-efficient, solution for smaller institutions with moderate budgets. Traditionally, the two most common concerns with using wet-pipe systems are the fear of over-use, too many sprinkler heads going off causing damage to collections in areas not at risk from the fire; and accidental discharge, sprinklers going off or leaking outside of crises situations. However, sprinkler systems today contain individually, heat-operated sensors, resulting in 85% of all fires being controlled with one or two sprinkler heads. Nicholas Artim, Director of Fire Safety Network, Middlebury, Vermont states,

The use of fire sprinklers in museums has traditionally been avoided, largely due to fears of accidental sprinkler discharge. While understandable, these fears are statistically unfounded. The industry wide sprinkler failure rate in all occupancies, including industrial and warehousing, is 1 sprinkler per 16,000,000 installed per year. In museum applications, sprinkler failure is almost unheard of. This is due to the testing procedures used by manufacturers which cause defective sprinklers to fail in the factory rather than in application.

There are a variety of other types of fire suppression systems available. Although typically more expensive than the wet-pipe system, they offer advantages over traditional sprinklers. Automatic dry-pipe sprinkler systems work in a similar fashion to wet-pipes and offer the same advantages. Dry-pipe systems contain valves that prevent water from entering the pipes until the system is activated. These valves are held shut by pressurized air. When a fire occurs, the air is released, the valves open, and water is dispersed. However, the mechanics of this system results in a delay in response time of up to a minute. Since the first few moments of a fire outbreak are so critical, this means that a dry-pipe system, while avoiding the risk of accidental discharge, can prove less effective than a wet-pipe system. For museum applications, dry-pipe sprinklers do not
offer a sufficient advantage to justify the additional cost of installation and upkeep. Additionally, the water that is expelled from a dry-pipe system is significantly dirtier than that of a wet-pipe system, which results in additional conservation concerns.

Specialized (or Pre-action) fire sprinkler systems work in a similar manner to dry-pipes, but make use of an electronic detection system, rather than a pressurized automatic system, to control the actuation of sprinklers. While further decreasing the potential for accidental employment, such a system offers no real advantages above and beyond that of the wet-pipe system, while further decreasing reaction time and increasing cost.

Water-mist systems appear to be one of the most recommended means of fire suppression for collection environments. This type of system differs from wet-pipe systems in that water is sprayed in very small droplets, increasing the surface area covered while decreasing the volume of water dispersed by up to 90% over traditional sprinkler systems. Another advantage to the water-mist system is that it employs small-diameter, stainless steel tubing, eliminating concern about metal corrosion and making it relatively easy to install, especially in retrofit situations (Lord and Lordix 188).

In addition to sprinkler and water-mist systems, there are two other types of fire suppression systems—gas and dry chemical. Gas systems gained popularity in the 1960s when the Halon 1301 system was introduced as the “most effective gaseous fire fighting agent ever developed” (“Halon 1301”). The disadvantages to using Halon include low reliability, potential for collection damage as a result of strong discharge forces, and cost. While many cultural institutions installed this type of system in a rush to be updated with “state-of-art” technologies, by the late 1980s it was discovered that Halon gases were environmentally unsafe, causing significant damage to the Ozone. The potential for
damage to artifacts from Halon gases was also uncertain. Eventually, production of Halon gases were halted, though institutions were not legally required to remove these systems from their facilities and some may still be installed today.

Some of the newer gas systems include Ansul® Inergen® (a mix of natural, inert gasses), Dupont™ FM-200® (halogenated), and Ansul® Sapphire®, which uses 3M™ Novex 1230™ (halogenated). Inergen agents were developed to replace Halon 1301. Clean agents, such as those listed above, are clear, colorless and odorless. Though similar in appearance, clean agents evaporate up to five times faster than water. These systems were designed for areas in which sensitive materials, such as artifacts and electronic equipment, are housed. Made from a blend of three naturally occurring gases- nitrogen, argon and carbon dioxide- these agents are safe to humans and the environment, offering zero ozone depletion. Cost seems to be the only apparent disadvantage to this means of fire suppression, though the size of the facility will be a factor in overall expense.

If funding is available, a clean agent system such as Ansul® Inergen® or Sapphire® appears to be the best choice in minimizing the amount of potential water damage from fire suppression. The second most recommended system is a water-mist suppression system. However, if the funds for a new system is not available, and a traditional wet-pipe sprinkler system is already installed, it is essential that the institution keep up with the existing system, providing appropriate maintenance to ensure proper functioning.

Ultimately there is no single recommendation for a fire suppression system. Each institution and collection must be evaluated individually for the best recommendation. It is also recommended that storage in cases or polypropylene bags be used as a means of
secondary protection for the most valuable and water-sensitive items. These can be purchased through archival supplies vendors such as Gaylord Brothers (www.gaylord.com) or Metal Edge, Inc. (www.metaledgeinc.com). The National Fire Sprinkler Association (www.nfsa.org) provides website information on various types of sprinkler systems, as well making informational pamphlets available. One of these is a technical handbook designed specifically for cultural organizations. Cultural holding institutions may find a step-by-step instruction guide on retrofitting one of the most useful sections of this website.

Light

When measured in long-term effects, light is one of the most serious threats to collections. Light damage can range from extreme material deterioration in the most sensitive of objects, to minimal color fading in less sensitive objects such as ceramics. If objects are to be continuously accessible, light exposure can never completely be eliminated. There are, however, several means of reducing the amount of light exposure and subsequent damage. These include “reducing the amount of time an object is illuminated; reducing the illumination to a level necessary for comfortable viewing by visitors; and eliminating ultra-violet (UV) radiation” (Ambrose and Paine 169).

Light intensity is measured by a light meter in lux units of foot-candles (fc). Ambrose and Paine explain the relationship of brightness and time of exposure. “A strong light produces approximately the same amount of damage in one year as a weak light one-tenth the strength will produce in ten years” (169). Recommended light levels range
from 50 lux (5 fc) to 200-300 lux (20-30 fc), depending on the collection. The most sensitive objects include textiles, organic materials, heavily pigmented objects, and specimens (botanical or zoological). Examples of less light-sensitive materials, which can withstand the highest levels of exposure, include stone, glass, and ceramics. Appropriate lighting levels should be determined on a collection-specific basis or object specific-basis relative to when the collection or objects are on public exhibition. Each institution must evaluate its own collection needs and then set lighting levels, both in storage and in exhibition areas, based upon those needs. It is a balancing act to determine an appropriate level of lighting that factors in the needs of the collection (no light) and the needs of constituencies (as much light as necessary to see comfortably) (170).

Because of its intensity and high levels of ultraviolet and infrared light, daylight is the most damaging source of light to objects. One of the most beneficial steps an institution can take to minimize light damage is to eliminate as much daylight from entering storage and exhibition spaces as possible. This can be done in relatively cost-efficient methods, such as covering windows and skylights with curtains, blinds, shutters, and/or UV-filtering or plastic solar control films. It is important to control artificial lighting sources as well. Recommended lighting sources include tungsten lamps, low UV florescent lights, and color-corrected high-pressure sodium bulbs. Lighting sources that are not recommended include fluorescent, mercury, tungsten-halogen lamps and metal high-intensity halide lamps.

Consultation firms can be hired to provide custom lighting and installation services. The Official Museum Directory™ (www.omd-online.com) contains a product and services suppliers’ directory and offers a website where institutions can, without
charge, search for suppliers and consultants. Museums USA (museumsusa.org) also offers a search engine for museum professionals, listing thirty-two lighting vendors, including design firms, consultants and hardware suppliers.

**Museum Basics**, provides a number of bullet points outlining various means of light mitigation. These tips are grouped together as “Simple and Cheap Methods” or “More Sophisticated and Expensive Methods.” They are, as follows:

- Simple and Cheap Methods—
  - installing curtains, blinds with horizontal or vertical louvers, or shutters and closing them when the museum is closed to the public;
  - moving items on display away from window areas;
  - sitting display cases/display screens out of strong daylight zones;
  - fitting screens or covers to display cases;
  - reducing the number and wattage of light bulbs;
  - fitting dimmer or cut-out switches to room/case lights;
  - cutting out illumination when the museum is closed to the public
  - Block out windows.

- More Sophisticated and Expensive Methods—
  - installing photocells to control blinds automatically;
  - fitting time switches to case lights;
  - fitting diffuser panels over lighting systems;
  - Installing ‘grey’ or light sensitive glass in windows (Edson 170).

**The Museum Environment** by Garry Thomson covers museum lighting concerns exhaustively. However, a more recent publication, **Light for Art's Sake: Lighting for Artworks and Museum Displays** by Christopher Cuttle, offers a comprehensive resource for object lighting direction and concerns. **Light for Art’s Sake** contains chapters addressing light-induced damage, methods for controlling daylight and artificial lighting, and methods for putting lighting strategies into practices. Published by Butterworth-Heinemann, Cuttle’s handbook is now available through various suppliers, including Amazon.com ($81.60 at the time of publication).x Also available online is the National Park Service's (NPS) "Museum Handbook Part I: Museum Collections."xi Located in
“Chapter Four: Museum Collections Environment" is a section on light, giving instructions on how to monitor and control light levels. The NPS has also included in this handbook a sample form for recording light measurements ("Publications").

Another small step that museums can employ to try to minimize the amount of light damage to a collection is to control the amount of light exposure to objects during photographic documentation. Many museums have strict policies against flash photography in collection display areas. While one of the primary reasons for this involves copyright restrictions, it is possible for objects to receive light damage from camera flashes. This, however, is a topic of some debate among conservators. Some argue that light damage is cumulative and any unnecessary exposure increases damage to works and should be prohibited. Others, such as Stefan Michalski, a conservation scientist with the Canadian Conservation Institute, feel that the occurrence of flash photography in a typical exhibition is so limited that any measurable increase in light exposure as a result would be insignificant.

An electronic flash on a camera is typically sized to use f8 for a film of 100ASA at a subject distance of 3m (10ft)... For convenience, round up to 50 lx-s for each amateur. Assuming the gallery lighting is the lowest most museums can tolerate, 50 lux (5 foot candles), then each flash adds the equivalent of one second of normal gallery exposure. So, 300 amateur flashes a day is equivalent to adding five minutes to the display day. In order to actually increase damage by 10% on a ten-hour day, one would need to experience 3600 flashes per day. Two large professional flashes would raise the ante a little: they would need 225 flashes a day to add 10%. For museums at 150 lux (15 footcandles) these numbers become 10,000 amateurs, or 700 pros, every day. To actually double fading would need 100,000 amateurs a day. Most museums would kill for those attendance figures!

There has yet to be a concrete scientific report on the long-term effects of flash exposure to museum pieces, so the question each collections manager must answer is "Do
I want to wait until scientific results prove flash exposure is damaging to prohibit flash photography, or would I rather prohibit flash photography until scientific results prove it is not harmful?"

Airborne Particulates or Pollutants

Traditionally, pollution has been associated with the burning of fuel in industrial cities. Today, automobiles provide a new form of air pollution known as oxidant pollution. Dirt, dust, soot and tar particles float through the air, eventually settling on any unprotected surfaces. Many problems occur when they land on museum objects. Pollution and airborne particulates can contain traces of metals, which have the potential for causing deterioration. The air contains moisture and acids, which are absorbed by airborne particulates. Once these particulates land on object surfaces, there is a potential for harmful chemical reactions.

This environmental factor is a concern for museums because, even if outdoor pollutants are eliminated, there are equally damaging indoor pollutants. Indoor pollutants can actually pose a higher risk to objects given that the concentration of outdoor pollution is diluted with open air (Cassar 54). Five of the main factors of museum pollution occur from within the museum environment.

The main sources of museum pollutants are: Emissions or off-gases from building, decorating and furnishing materials; Environmental systems (such as heating and air-conditioning); Office equipment (such as photocopiers); The activities of staff and visitors; Emissions from museum objects themselves; External, especially urban, pollutants (55).
Staff and visitor activities were mentioned above, therefore it is recommended that the number of visitors to museums or specific exhibitions be monitored, perhaps even regulated. Not only are pronounced increases in relative humidity and temperature products of a large people-to-volume ratio, but visitors will unknowingly bring pollutants into the museum, “including perfumes and hair sprays, and residual dry-cleaning solvents in clothing” (55). Clothing is an additional cause for concern as heavy outdoor apparel items, such as jackets, may cause additional heat and perspiration to be produced by visitors, as well as additional moisture brought in from rain coats and umbrellas (20).

Some museum spaces are occasionally used as event halls. Today, architects even design spaces within museum structures for such purposes as a means of bringing in rental income from corporate events, banquets, and weddings. It is important to take into consideration the effects of increased traffic on the collections, bearing in mind that each event held in collection spaces will increase the opportunity for pollutant damage.

Another type of pollutant that must be monitored within museums is that of gaseous pollution. The three main gaseous pollutants in the industrial world are ozone, sulphur dioxide, and nitrogen dioxide. Ozone is a powerful oxidant, causing breakdown in almost all organic materials. It is introduced to the museum environment in a number of ways. It is used as a cleaning product for smoke and water damages and odors, in air conditioning systems, and exists as a by-product of photocopier machines. Whether for museum collections of inorganic of organic materials, ozone should be eliminated completely, if possible. Levin points out, “Though thought to be a modern and efficient cleaning agent, ozone is actually an irreversible and highly destructive treatment that can damage and even destroy cultural property” (Levin).
Sulphur dioxide, which is produced from the burning of fossil fuels (coal, petroleum, oil, etc.), is relatively harmless in its original state. However, when combined with water in the air, it becomes sulphuric acid, a strong and corrosive chemical. Given its potential for creating health risks, efforts are made to minimize the amount of sulphur dioxide in the air we breathe. However not all sulphur dioxide comes from man-made sources. Nitrogen dioxide, like sulphur dioxide, combines with moisture in the air to produce seriously destructive nitric acid. Nitric acid contains an oxidizing agent which attacks metals causing corrosion. While sulphur dioxide levels may continue to decrease, levels of nitrogen dioxide, which is produced primarily by automobile exhaust, are continuing to increase and will prove to be a greater concern for collections care in the future.

“Off-gassing” is a by-product of manufacturing, occurring when volatile chemicals inherent to non-metallic materials evaporate and are emitted into the air. One of the most common sources known to off-gas in a museum environment is wood storage cabinetry, specifically plywood- a common and inexpensive material for cabinetry, which produces formaldehyde. Many collection holding institutions are still fitted with off-gassing wood cabinets in their storage holdings. It is essential that all materials within a museum environment be tested for off-gassing and removed if they are in fact emitting harmful gases. Vendors of archival-quality and museum environment products should be able to provide information about the potential for off-gassing of all products they sell. Inert materials, such a metal or pre-made archival cabinets, should be used in all storage and display areas. It is typically recommended that all new materials be given a period of approximately three months to aerate before coming into a storage environment.
with collection holdings. This is especially important with new constructions, as while storage furniture may be inert, it is certainly not economical to construct an entire building with inert materials. This is something that collection managers and administrative staff should keep in mind when planning major construction projects, as a three month waiting period before moving objects into storage will certainly need to be factored into the project timeline.

Previously, studies in conservation science have focused on pollutant gases, because it was believed that particulates were easier to remove from buildings and that particulate matter was, for the most part, nondestructive. However, particulate matter and effects became the focus of a study by the Getty Conservation Institute (GCI) in 1993, due largely to the fact that, regardless of a lack of toxicity, once particulates land on certain materials, specifically feathers and unvarnished paintings, they cannot be removed. The result of this research initiative was a 145-page document discussing particulate migration through air space, potential for damage to surfaces, and mitigation methods. This report, *Airborne Particulates in Museums*, serves as a valuable resource to large institutions, given the breath of information presented, as well as small institutions, given that the techniques outlined have low associated costs, some of which even yield savings. Available through the GCI as a free PDF, *Airborne Particulates in Museums* presents the following six environmental control techniques:

- reducing the rate of supply of outdoor air to the building;
- improving particle filtration;
- reducing particulate deposition velocities;
- using display cases or framing;
- managing a site to achieve low outdoor aerosol concentrations;
- and eliminating indoor aerosol sources (Nazaroff et al. 19).
Each of these techniques is technically feasible, require no additional equipment to be purchased or is based on commercially available products.\textsuperscript{xii}

The Georgia Department of Archives and History has published a document titled “The Storage Environment,” which outlines practices they attempt to follow in order to preserve their collections. Under the subtitle "Dust and Pollutants," the department lists a number of dust-limiting practices, such as:

- Change furnace and air conditioner filters on a regular schedule, \textit{e.g.}, quarterly.
- Use vacuum cleaners equipped with high-efficiency, particulate air (HEPA) filters if possible, so as not to redistribute dust.
- Avoid introducing materials that create internal pollutants, such as wooden cabinets and shelves, cleaning compounds, and carpeting.
- Do not store records near copying machines, which produce ozone and dust from toner.

In 2006, Cecily M. Grzywacz of the Getty Conservation Institute published a paper titled \textit{Monitoring for Gaseous Pollutants in Museum Environments}. This paper, which is available through GCI\textsuperscript{\textsuperscript{\textsuperscript{\textsuperscript{xiii}}}} for $65 (at time of publication), discusses the nature of pollutants, planning and monitoring methods, and mitigation considerations. Research for the report was based on the Getty Trust Museum Monitoring Project, as well as case studies. \textit{Pollutants in the Museum Environment: Practical Strategies for Problem Solving in Design, Exhibition and Storage} by Pamela B. Hatchfield is another text which outlines sources of museum pollutants, how they do their damage and what to do about it. Hatchfield discusses ways to identify pollutant damage and their sources, as well as damage prevention. Additionally, Hatchfield discusses how to read and use Material Safety Data Sheets.\textsuperscript{xiv}
There are companies that offer environmental control systems and consultation services, and supply pollution and particulate control products. One of these companies, Microclimate Technologies International, Inc., has worked with the Getty Conservation Institute, the National Park Service, and The Field Museum in Chicago. Microclimate’s web page (http://www.microclimate.ca/index.html) offers information, resources and articles for various museum professionals, including designers, conservators, curators, collections managers, exhibit fabricators, engineers and contractors. Museumsusa.org also offers a list of environmental control & monitoring vendors, organized by state. For example, a company located in Georgia, Purafil (http://www.purafil.com/markets/Museums/museums.html), offers air quality assessment, air filtration and air monitoring services and products.

Pests

Pests, typically rodents and insects, have been a constant problem for museums as far back as museums have existed. Rodents have been known to form nests and cause considerable damage. For such pests, a collection vault or storage area provides a buffet of materials to chew and to collect for nesting material. Not only will rodents gnaw at collection objects, they will also chew through packing materials, files and electrical wiring circuits. Fortunately, control of rodent infestation is relative simple and can be inexpensive. Though it is best to contact a professional, tried and true methods of rodent control are usually safe for museum use. In many European institutions museum cats are
still used for their skill at controlling rodent populations. One reference for rodent control is Controlling Vertebrate Pests in Museums by Thomas J.K. Strang and John E. Dawson.

Insects provide a variety of other more complex concerns for museums. The first step in controlling insect damage is to prevent their presence. All objects, especially those made of organic materials, should be inspected for infestation prior to being brought into storage or exhibition areas. Exhibition and storage areas should also be inspected on a regular basis. This subject will be discussed in more detail later in a discussion of Integrated Pest Management (IPM) policies. While insects are usually first detected in their adult form, it is during the larva stage that they inflict the majority of damage.

Traditional forms of pest control have proven to be harmful, not only to collections, but to people as well. Fortunately, many advances have been made in this field, most notably the development of chemicals and methods appropriate and safe for museum environments. Pesticides are not only more regulated by governments now, but the use of pesticides is also frowned upon by the public. Preventive measures are far preferable to chemical application. One reference for controlling insect infestation is Solving Museum Insect Problems: Chemical Control, also by John E. Dawson and revised by Thomas J.K. Strang. This text was designed to guide museum personnel through the process of working with commercial pest control companies in selecting appropriate chemical applications.

Pest damage often goes unnoticed, as pests are likely to attack in areas outside of view and damage is often a slow and gradual process. There are three more steps that institutions can take to begin preventive control. The first is to keep areas sanitary and uncluttered. Beside the fact that food and beverage presence itself can cause damage to
objects, pests are attracted to even the most miniscule crumbs and residual liquids. Food
and drink should never be allowed in collection storage and exhibition areas. Cluttered
areas provide ample opportunity for pests to sneak in and begin their work unnoticed.
Second, the condition of museum buildings is an important concern, as pests can easily
infiltrate the perimeter through even the tiniest cracks and holes in foundations, sidings,
along window seems, etc. A throughout inspection of the building exterior should be
conducted and any gaps should be sealed and monitored. The third step is to conduct
regular inspections of all collection storage and exhibition areas. Should any pests be
found, the National Park Service recommends that the following steps should be taken:

1. Isolate any objects suspected of being infested to prevent spread of
   infestation to other objects. Some objects can be sealed in
   polyethylene Ziploc bags for monitoring and to prevent insects from
   spreading.
2. Identify the pest and its biology (life cycle and behavior).
3. Clean infested areas and destroy insect bodies and debris.
4. Decide on the most appropriate treatment for the object and
   environment (“Controlling” 1).

As it will be necessary to take into consideration the specific needs of any object,
factoring in its condition and materials, it may be necessary to consult a conservator
when selecting an appropriate treatment method. Museumpests.net, a service of the
Integrated Pest Management Working Group, offers a helpful guide to identifying found
pest and their biology. Located on their website are museum pest fact sheets for a list of
the most common pests found in collection holdings. These sheets, which were developed
by pest experts and entomologists, provide general information about each pest, as well
as helpful information on signs of infestation, food sources, life cycles and treatment
methods. They do not contain images of the pests, but they do provide descriptions.
As mentioned there are various other means of pest control than toxic chemical application. These include temperature treatments (low temperature and heating) and modified atmosphere treatments (anoxia, carbon dioxide, and other gases). Pests are killed through rapid temperature decreases in a process called low temperature freezing. Heating treatments cause a bit more concern, as the heating process itself can cause damage to particular objects. The only advantage to using this process is that is can occur much quicker than freezing. Ovens can safely be used for heat treatments. The key to preventing heat damage is to control humidity within the treatment environment.

“Modified atmosphere treatments have been developed as a direct replacement for fumigation with toxic fumigants and the techniques and procedures used are in some cases very similar” (“Controlling” 2). Anoxia refers to the removal of oxygen to kill insects. It is performed in an airtight chamber and can take 2-3 weeks to be fully effective. Carbon dioxide has replaced nitrogen as a standard method of infestation eradication, however use of this material is controlled and/or restricted in some states. While other gases such as Argon can be used, cost rarely makes them a practical option over carbon dioxide. The article “Controlling Insect Pests: Alternatives to Pesticides,” found in the National Park Service’s August 1998 edition of Conserv O Gram. This publication includes a relevant bibliography which can provide additional information on performing any of these methods.
Integrated Pest Management (IPM) Program

Over 60% of institutions surveyed do not have a written, up-to-date Integrated Pest Management (IPM) program. “The term ‘Integrated Pest Management’ was coined to refer to a method of pest control that integrates knowledge in developmental biology of agricultural pests with effective timing of response methods” (Strang). A major driving force in the development of IPM programs over traditional means of pest control was an overall awareness within the public of the dangers of pesticide use. An IPM is not put into place to eliminate the use of chemical application, but rather to outline a game plan for the use of preventive measures in an attempt to minimize the need for pesticide use.

Every pest management professional has a slightly different definition of the term, but there is a general consensus that any control program can legitimately be called an IPM if it emphasizes the following three elements: Prevention, Least-toxic Methods, and Systems approach (Buck and Gilmore 257).

Available through the AAM’s Information Center is a copy of the Minnesota History Center’s IPM program. The excerpts below are taken from the MHC’s IPM and give examples of each of these three elements:

Prevention- The concept behind prevention is to “anticipate and protect” rather than react (Buck and Gilmore 257). Policies related to this element will be written to prevent pests from entering facilities and to minimize, or possibly eliminate, the resources pests will need to survive should they find their way in, such as food and water.

Monitoring: All spaces subject to infiltration and habitations by various pest species will be monitored with glue boards, smaller blunder traps, and live traps for rodents. The contracting PCO (pest control operator) will place the boards and collect them, and communicate the results to the Objects Conservator. The PCO will have to be accompanied by Museum
Collections Dept. staff member into all Level B storage areas, and a Library and Archives Staff member into any storage areas on Level A. A regular schedule must be set up for inspection visits… Building Maintenance: The exterior of the building will be inspected regularly for cracks and settling (Storch 1-2).

Least-Toxic Methods- As the label itself suggests, policies within this concept will be written to ensure that the least-toxic methods are attempted first, before resorting to chemical application. However, an IPM should not prohibit pesticide use when its application is necessary to reach the desired objective. Yet, collections managers should be familiar with alternative processes and feel comfortable with using them as pre-chemical methods. When chemicals are used, an IPM should include a policy that favors “compounds, formulations, and application methods that present the lowest potential hazard to humans and other non-target organisms” (Buck and Gilmore 257).

Eradication: c. the application of insecticides will be done based on the results of the monitoring program. Regular spraying in collections areas will not be done… e. All commercial pest control contractors hired to apply chemicals must use only those products which have been reviewed and approved by the Conservation Dept. An MSDS must be on file in the Conservation and Institutional Services Office for all hazardous materials used… Procedures for Collections: D. Smaller objects will be prepared (i.e. dried of excess moisture, wrapped in plastic, Pest Control form c1 008 will be filled out by the conservation staff, etc.) for freezing in the chest freezer in b-164. The standard process of two 48 hour cycles at –20 degrees C will be followed where applicable or modified to fit the situation (Storch 3-4).

Systems Approach- This refers to policies that require any and all related departments and personnel to become active in doing their parts in order to safeguard the facility and collections from pest damage. An IPM will outline what each department or office is responsible for and how each area will work together for the common goal. For instance,
House keeping: a. The Staff Amenities Subcommittee of the MHC Building Use Committee has made recommendations regarding food and live plants in the building in reference to staff activities:
1. Live Plants and cut flowers will be kept out of all collections use areas. They will be allowed in the Great Hall, food service and office areas in which collections are not located.
2. Food will only be allowed in non-collections handling areas (Storch 2).

The NDCC offers a good overview on pest management and IPM programs, available at
http://www.nedcc.org/resources/leaflets/3Emergency_Management/10PestManagement.php. Museumpests.net offers a number of examples of institutional IMP policies and procedure documents, including training Power Point presentations, a document on how to modify home and chest freezers for museum pest control, as well as lists of texts and online resources on the subject. Also, the Smithsonian Center for Materials Research and Education offers a 19-page PDF checklist, designed to assist institutions with assessing their pest management needs and developing an IPM to meet those needs xv.

Collection Storage & Furniture

A chapter in The New Museum Registration Methods, dedicated to the topic of collection storage, indicates the importance of proper storage and enclosures in collections care. Additionally, the highest percentage of “some damage,” as assessed in this survey was a result of improper storage or enclosures. xvi “Since more than 80% of museum collections nationwide reside in storage, proper housing and care in storage areas are critical to preserving objects for the future” (Buck and Gilmore 109). As Lynn
Swain, author of “Storage” (The New Museum Registration Methods) points out, purchase of state-of-the-art storage equipment may be out of the question for smaller institutions, however large institutions also find themselves struggling with providing not only proper enclosures for their collections, but primarily adequate space. As Swain states, “larger collections cause larger problems” (109). The New Museum Registration Methods suggests a number of valuable tips, provides industry standards for object storage, and lists acceptable and unacceptable storage equipment, materials and solutions.

“Connection to Collections: A Call to Action” is a Leadership Initiative of the IMLS that provides a valuable online resource for a number of collections management topics. Listed under the category of “Care for Collections” are thirteen sub-categories including such topics as Audio-Visual Materials, Photographs and Textiles. By selecting any of these object material categories, one will have access to a number of online links providing resources for object care and storage. These links are provided by institutions such as the Smithsonian Museum Conservation Institute, the American Institute for Conservation of Historic and Artistic Works, the Library of Congress, and the NEDCC.

Because of the specificity and uniqueness of each institutions collection, there is no single standard solution for this collections management problem. It is important for registrars to evaluate a number of storage options in order to select the equipment and materials that will best serve the needs of their specific collection. There are so many collection storage and furniture solutions and vendors that it would be difficult to select which to highlight. This is one issue of collections management where there is no single or select grouping of popular options or resources. However, the institution I work for has
purchased satisfactory storage products from Gaylord (www.gaylord.com), a vendor for library supplies, furniture and archival solutions. Under any circumstances, it is important to select inert and non-off-gassing furniture for collection storage.

The most common storage problem for collections is an overall lack of secure, controlled, and monitored storage space in which to house a collection safely. As long as an institution continues to grow its collection, even one with ample space today will one day face storage issues. One solution is the use of off-site storage, though collection managers should approach this solution with extreme caution, as there are considerable drawbacks to employing such facilities. Each time an object is moved or re-housed, it is handled, which provides an opportunity for damage, especially when being moved over large distances. Moving a collection, or even a portion of a collection, to an off-site facility requires a huge effort and, potentially, a considerable amount of expense, as additional art handlers and packing/shipping materials may be necessary. A collections assessment, a large undertaking, often will need to be performed beforehand, to determine which objects should be relocated. Once the collection is moved, this off-site facility will need to be secured and controlled for access and environmental variables. It is not simply a manner of moving objects to a room and locking the door.

One option is the utilization of shared storage spaces, in which a number of institutions store holdings in one location. Although this may seem like a cost-efficient solution, there are significant risks to be considered. This arrangement may allow a number of unfamiliar individuals access to collection. Additionally, an overlooked infestation in one of the institutions collections may easily be able to spread to all other objects, depending on the design of the facility.
One way to approach this problem is to make additional space by removing objects from the collection completely. Obviously, it is never a good idea to give away, or even worse throw away, objects. However, one may find that by evaluating current holdings, stewardship if being provided for a number of objects that are not officially in the collection or should not be in the collection. While unaccessioning objects that do not fit within the mission or meet the standards of the institution is a complex process, the level of care provided to the overall collection is diluted by caring for inappropriate objects. The entire staff, especially administrative staff and trustees, must be involved in such an undertaking to facilitate and expedite the evaluation and removal of resolved objects.

The most involved aspect of this process may be the amount of research needed to verify that each object does not belong there and can be removed legally and ethically. It is important to dedicate an appropriate amount of time to this process, especially when there may be little information about the object itself. Determining the appropriate amount of research, without excessively draining resources, will be necessary. Occasionally this process is complicated by such issues as trade regulations, such as NAGPRA (Native American Graves Protection and Repatriation Act), which ensures that all culturally sensitive materials are dealt with in a legal and appropriate manner. One should also be aware of the AAM’s Guidelines Concerning the Unlawful Appropriation of Objects During the Nazi Era.

A number of AAM programs and resources are discussed in this paper. One particular program that may be relevant to collections managers during this process is the Collections Exchange Center (CEC). CEC is an online forum designed to match up
member institutions that have an object they would like to exchange or pass off to
another institution better able to care for it or who can better serve their constituencies
with it. “This assists museums to effectively manage their collections while ensuring that
material held in the public trust remains available to the public for its education and
enjoyment” (“Collections Exchange Center”).

Emergency Planning & Security: Written Emergency/Disaster Plan for Collections

As with IPM programs, over 60% of surveyed institutions do not have a written,
up-to-date emergency/disaster plan. Recent events such as Hurricane Katrina in the
southern United States and the tsunamis that struck Southeast Asia highlighted on the
severity of damage and loss that can be inflicted on cultural heritage by a natural disaster.
“A museum disaster-preparedness plan focuses on preparing for and mitigating the
damage from catastrophic events that endanger people and collections” (Buck and
Gilmore 247). Disasters can come in a variety of forms, from natural occurrences such as
hurricanes, earthquakes and flooding, to random situations such as water-pipe leaks and
electrical fires. Each region will have its own set of potential disasters. Damage from
such emergencies can be severely minimized if museum staff respond in a timely manner
and follow a strategic guideline for reaction. Disaster planning is such a vital component
to a sound collections management policy that the American Association of Museums
requires a plan that adheres to professional standards for accreditation.
Before an emergency/disaster plan is prepared, a single individual is usually assigned to be the institutions disaster planner. This person may or may not be assisted by a planning committee. According to a Preservation Leaflet prepared by the NEDCC titled “Disaster Planning,” the following make up the steps necessary for preparing an emergency/disaster plan:

- Identifying Risks
- Decreasing Risks
- Forming a Cooperative Plan
- Identifying Resources
- Setting Priorities
- Writing the Plan;
- Maintaining the Plan (Lindblom Patkus and Motylewski).

Because of the importance of this issue, there are a variety of valuable and useful resources available to institutions who seek to prepare a written emergency/disaster plan. The Central New York Library Resources Council (CLRC) has prepared an 88-page PDF manual titled “In the Face of Disaster: Preparing for Emergencies in Central New York- A Self-Planning Manual for Disaster Prevention, Response and Recovery in Libraries, Museums and Cultural Institutions of Central New York State.” Topics covered in this manual include establishing collection priorities, staff education and training, response steps and disaster recovery and salvage.

“dPlan™: The Online Disaster-Planning Tool” was funded by the IMLS and the National Center for Preservation Technology and Training (NCPTT) and prepared by the NEDCC and the Massachusetts Board of Library Commissioners (MBLC). dPlan™ was designed for small to mid-sizes institutions and serves as a user-friendly tool for preparing a written disaster plan, especially for those institutions that do not have an in-house preservation staff. “dPlan™ is also valuable for large library systems or museum
campuses that need to develop separate but related plans for multiple buildings, locations, or branches” (“Welcome to dPlan™!”). Institutions simply register on the free site and enter data into a template to create a customized emergency preparedness plan.

Heritage Preservation has once again provided a valuable resource for collection managers with their “Field Guide to Emergency Response Downloadable Forms.” On this web page, Heritage Preservation has provided three essential documents that will make emergency preparation a much easier task, especially for small institutions. The first, “Field Guide Assessment Form,” is a two-page document to assist surveyors with the initial inspection following a disaster. It provides a chart to designate which objects are in need of treatment, and an area to denote which are in need of urgent conservation. “Disaster Supplies Shopping List” gives whoever is performing the disaster preparation one form to mark down all the supplies needed on hand. This is a great tool because it gives suggestions for materials and tools that may not come immediately to mind. Last is the “All Field Guide Tabs,” which is made up of four sections:

- Emergency and Institutional Contacts
- Now, Where Is That and What Do I Save First?
- Insurance and Suppliers and Vendors
- Master Supply List

Together these sections contain such things as emergency contact information, contact information for the institutions insurance company, a list of where other emergency tools and materials are location, and a list of which objects are recovery priorities.

States Conservation Center offers an online class called “Disaster Plan Research and Writing." This six-week course is designed to walk participants through preparing their own disaster preparedness plan at a fee of $425\textsuperscript{xxii}. In response to the Hurricane Katrina catastrophe, the Heritage Emergency National Task Force launched an initiative called “Lessons Applied” designed to help develop and implement projects in five main issue areas: incentives for preparedness, working with first responders, effective regional response, funding and coordination among service organizations. Their website\textsuperscript{xxiii} offers additional information on their work, including a number of resources for disaster preparedness planning and training. Information about MayDay events, an annual effort on May 1\textsuperscript{st} designed to set aside time to work to protect collections from disasters, is available on their site as well. Also, a database on disaster preparedness is available online\textsuperscript{xxiv} and maintained by the Michigan State University Libraries and the California Preservation Program. This resource provides examples of preservation plans and offers a database for experts, services and supplies in a variety of disaster-related areas and specialties, searchable by state.

The National Endowment for the Humanities (NEH) offers emergency grants for institutions in need of critical work. Through the NEH, the Chairman’s Emergency Grants have been made available to institutions who have received damage as a result of earthquakes, fires and other natural disasters. These grants have been offered in response to the 9/11 attacks in New York City and following Hurricane Katrina, aiding in the recovery of cultural heritage items.\textsuperscript{xxv}
Of those responding institutions that indicated having a written, emergency/disaster plan, 52% reported that their staff was not trained to carry out their plan. No matter how meticulous or well-written a plan may be, it will only be as successful as the people who are trained to carry it out. While there are a number of resources available to assist with preparing a disaster plan, the responsibility lies to ensure their staff can put their plan into action rests on each institution. One resource that is available for institutions with paper-based collections is a 24 hour, 7 days a week Emergency Phone Assistant program offered by the NEDCC. While on-site assistance is not offered, the telephone bank is available free-of-charge. It is made possible by a grant from the NEH. “Information provided includes advice on drying wet collections and dealing with damage from fire, pests, or mold. Referrals to commercial disaster recovery service providers experienced with library and archives collections can also be provided” (“Services”).

The Heritage Emergency National Task Forks offers an online listing of training courses recommended for individuals who may find themselves responding to a disaster situation. It includes courses such as A National Response Plan (NRP) Introduction, Principles of Emergency Management (I and II), Leadership and Influence, Developing and Managing Volunteers, and Disaster Basics. Smaller institutions may want to consider reaching out to other collection holding institutions in their area to form a disaster alliance. Such an alliance can assist small institutions by pulling together and sharing resources and/or training costs. This could be an especially valuable partnership.
for small institutions needing to know there are reliable helping hands available for emergencies.

Preventive Conservation/Preservation Staffing & Activities: Preventive Conservation

Sixty-three percent of surveyed institutions indicated a need for Preventive Conservation training for their staff, with 2.6% noting an urgent need. The first step to receiving this type of specialized training is to become aware of what preventive care entails. The AAM provides an information fact sheet on risk mitigation for collections.xxvii The information center of AAM provides a wealth of information on Preventive Conservation issues and basic collections care concerns, however most resources are only accessible by registered members. Individual membership dues range from $35 for non-paid staff, retired museum employees and students to $150 for trustees. Institutions may become AAM members as well at a rate of .001% of annual operating budget or $100 for those with a budget of less than $100,000. In addition to gaining access to educational pamphlets and sample forms and documents through the Information Center, AAM members receive a number of benefits such as access to JobHQ, an online job posting forum, subscriptions to *Museum* and *Aviso* publications, and discounts to seminars, the AAM bookstore and participating AAM member museums. After becoming a member of AAM, individuals are able to join a variety of institutional committees at an additional rate of $10-$30. These committees are classified as either Standing Professional Committees (SPC’s), such as Museum Education or
Media and Technology, or Professional Interest Committees (PICs), such as Historic House or Visitor Services. Classified under SPC is the Registrars Committee, or RC-AAM. RCAAM members receive the following additional benefits:

- Membership directory
- *RC-Newsletter*, an update of seminars, workshops and reports from regional and national meetings
- *Occasional Publications* series, in-depth discussions of professional practices and concerns
- *Annual Report*, a review of the RC-AAM and a summary of Task Force and Professional Practices subcommittee activities
- Free access to policies, procedures, forms, job descriptions, and organizational charts.
- A listserv discussion group addressing concerns to all registrars and collections management professionals.
- Website dedicated to registrarial and collections issues with a special access area for members.
- Scholarship applications (“Registrar’s”).

Available through the Canadian Conservation Institute is a “Framework for Preservation of Museum Collections”xxviii. This resource, modeled after a popular wall chart also available through CCI, outlines nine main risk factors for collections, as well as methods to avoid or control collection damage. They are listed in order of potential risk for damage and are as follows:

- Direct physical forces
- Thieves
- Vandals and displacers
- Fire
- Water
- Pests
- Contaminants
- Radiation
• Incorrect temperature
• Incorrect relative humidity (Costain).

For each factor, there are three levels of control: building features, portable fittings and procedures. Each factor is then broken down into five stages: avoid, block, detect, respond and recover/treat. CCI notes that not every control method will be applicable or feasible for each institution, but the design of the framework will allow personnel to select measures that are appropriate to their situation and resources. This resource will provide an easily accessible visual aid for collections care decisions (Costain).

There are currently few training programs available specifically for Preventive Conservation. However, there are a wealth of training courses and workshops tailored to specific Preventive Conservation issues such as pest management and fire suppression/mitigation. These courses are usually offered through conservation and preservation associations, such as the Intermuseum Conservation Association in Cleveland, Ohio or the Campbell Center for Historic Preservation Studies in Mount Carroll, Illinois. George Washington University in Washington, D.C. offers a Distance Education certificate program in Museum Collections Management and Care. This program was designed for staff members and volunteers with collections management responsibilities who are currently working in a museum. Students are required to take four three-credit graduate courses online but are not required to complete an internship or writing requirement, as would be required in GWU’s degree program for collections management. Two courses that students may select from are Museum Preventive Conservation: Philosophy and Theory and Museum Preventive Conservation: Practical Applications. Just as with training programs, singular concerns of preventative
conservation are covered in dedicated publications, or in chapters of related books. However, at the time of the completion of this paper, an all encompassing textbook on Preventive Conservation has not been published.

Continuing Education Programs/Activities

Being that 63% of organizations noted a need for staff training, it is no surprise that only 37.5% of organizations reported having continuing education as part of their preservation program. With the rate of new research and changes in global and local environments, it is difficult to be an expert on all issues of collections management. Additionally, while the field may set best practice standards, each and every object that is stored, handled, exhibited, cleaned, etc. must be evaluated on its own merits. Therefore, while it may be possible to read all the literature that has been published and spend years performing original research within the field, there is no course of action that meets every situation. Collections managers must always think of themselves as practitioners, applying creativity, experience, and forward thinking to their responsibilities.

Additionally, collections managers must always be students of the objects under their stewardship. To stop exploring new information and ideas is to place objects at risk. We fail our collections by not being as prepared as we can be if we become complacent and stagnant. This may be an idealistic way of thinking, but we set the incredibly lofty goal of existing in perpetuity for each and every object of cultural heritage, making it necessary to set equally as lofty goals for ourselves.
As has been mentioned, there are many educational opportunities available for collections managers. They range from local classes to online courses, scholarly publications to free programs, graduate degree programs to preservation guidelines for specific material compositions, and everything in between. Each registrar and organization should identify a list of priorities in terms of training needed and begin there. The following are a sampling of organizations that offer educational opportunities, as well as specific educational programming and activities of interest.

American Association of Museums  
1575 Eye Street NW, Suite 400  
Washington DC 20005  
Phone: 202-289-1818  
www.aam-us.org  
Registrars Committee of the American Association of Museums  
http://www.rcaam.org/

American Association of State and Local History  
1717 Church Street  
Nashville, TN 37203-2991  
Phone: 615-320-3203  
http://www.aaslh.org/

American Institute for Conservation of Historical & Artistic Works  
1156 15th Street NW Suite 320  
Washington DC 20005-1714  
Phone: (202) 452-9545  
Email: info@aic-faic.org  
http://aic.stanford.edu/

The Association for Preservation Technology International  
3085 Stevenson Drive, Suite 200  
Springfield, IL 62703  
Tel: 217.529.9039  
Email: info@apti.org  
http://www.apti.org/

Association of College and University Museums and Galleries  
http://www.mpcer.nau.edu/acumg/index.html
Association of Midwest Museums
PO Box 11940
St. Louis, MO 63112
Phone: (314) 746-4557
Email: info@midwestmuseums.org
http://www.midwestmuseums.org/

Heritage Ohio
846 1/2 East Main Street
Columbus, OH 43205
Phone: 614.258.6200
http://www.heritageohio.org/

Heritage Preservation
1012 14th Street, NW, Suite 1200
Washington, DC 20005
Phone 202-233-0800
http://www.heritagepreservation.org/

Intermuseum Conservation Association, Cleveland
2915 Detroit Avenue
Cleveland, OH 44113
Phone: 216.658.8700
Email: ica@ica-artconservation.org
http://www.ica-artconservation.org/

International Centre for the Study of the Preservation and Restoration of Cultural Property
http://www.iccrom.org/
Via di San Michele 13, I-00153 Rome, Italy
Phone: (+39) 06.585-531
http://www.iccrom.org/

International Council on Museums (ICOM)
Maison de l'UNESCO, 1 rue Miollis, 75732 Paris Cedex 15, France.
Phone: (33 1) 4734 0500
http://icom.museum/

Midwest Registrars Committee
AMM
PO Box 11940
St. Louis, MO 63112
Phone: (314) 746-4557
Email: info@midwestmuseums.org
http://www.midwestmuseums.org/links_mrc.html
National Trust for Historic Preservation  
1785 Massachusetts Ave. NW  
Washington, DC 20036-2117  
Phone: 202-588-6000 or 800-944-6847  
http://www.preservationnation.org/

Natural Science Collections Alliance  
1313 Dolley Madison Blvd., Suite 402  
McLean, VA 22101  
Phone: 703-790-1745 x 30  
http://www.nscalliance.org/

Northeastern Ohio Inter-Museum Council  
http://www.case.edu/affil/NEOIMC/home.htm

Ohio Association of Historical Societies and Museums  
1982 Velma Avenue  
Columbus, Ohio 43211-2497  
Phone: 614-297-2340  
http://www.ohiohistory.org/resource/oahsm/

Ohio Association of Museums  
1982 Velma Avenue  
Columbus, OH 43211  
Phone: 614.297.2375  
Email: oma@ohiohistory.org  
http://www.ohiomuseums.org/

Ohio Historical Society  
1982 Velma Avenue  
Columbus, OH 43211  
Phone: 614-297-2300 or 800-686-6124  
http://www.ohiohistory.org/

Popular Culture Association/American Culture Association  
8A Morrill Hall  
Michigan State University  
East Lansing, MI 48824-1046  
Phone: 517-432-5134  
http://www.h-net.org/~pcaaca/
Continuing Education Programs/Activities: Workshops, Training Seminars, and Certification Programs

The Rutgers School of Communication, Information and Library Studies offers a certificate course in Preservation Management, during which participants learn about preservation issues, technologies and management strategies. The course runs in three week-long sessions at the Rutgers’s University campus in Central New Jersey. Through a curriculum that combines classroom learning, guided assignments and field trips, students gain a knowledge base of both theory and practical application. One of the most valuable benefits of this program is that through the coursework, participants will conduct a survey of their own institutions preservation needs, as well as draft a disaster plan and write a preservation plan. While the tuition cost of $6,500 does not cover travel and board expenses, payment can be made over two fiscal years.

The Intermuseum Conservation Association (ICA) is “the oldest non-profit regional conservation center in the United States, dedicated to the preservation of works of art and objects of cultural significance” (“ICA”). ICA offers a number of valuable programs, workshops and opportunities for its constituencies, in addition to holding a
highly regarded reputation for quality conservation work. Included in ICA’s Preservation Services are the following:

- Analytical Services (examination of structural and chemical compositions)
- Crate and display case construction
- Matting & framing
- Emergency and disaster assistance (on-site surveys that include recommendations for disaster preparedness and technical information to aid in insurance claim filing)
- Fine Art Courier Services and Storage
- Grant Assistance (supplying estimates, condition reports, project planning assistance and letters of commitment and resumes of ICA personnel)
- Photographic Documentation Services
- Surveys & Inspections (to assess physical collections environments)

In October, 2008, ICA hosted its inaugural session of “Preserving Our Cultural Heritage,” a statewide preservation outreach initiative, developed in conjunction with the Ohio Preservation Council. Available free and on-demand, the questions ICA seeks to address with this program include

- ‘Why should we be concerned about our collections?’,
- ‘What is preservation and why is it so important?’,
- ‘What’s the difference between preservation and conservation?’,
- ‘What kind of supplies should I be using to preserve my collections?’,
- ‘How do I prepare for a possible disaster?’,
- ‘What do I do if a disaster occurs?’,
- ‘What Internet and published resources are available to help me?’ and
- ‘How do I pay for all of this?!’.

Additionally in 2008, ICA offered its 2nd Annual Subsidized Survey, in which any non-profit cultural institutions that could demonstrate a commitment to collections care was eligible to apply for a survey of preservation needs. A pre-selected group of artifacts was examined on-site for each institution. Written condition reports and treatment recommendations were provided. Institutions were asked only to cover travel costs. Other program topics offered by ICA include:
Continuing Education Programs/Activities: Professional Publications

The Midwest Archives Conference offers two publications to members: MAC Newsletter and Archival Issues. The MAC Newsletter is published quarterly and contains technical articles, information about archival-related legislation, workshop and meeting notices, as well as job postings. Archival Issues is a journal published semiannually and “is highly regarded in the profession for the range of topics addressed and the quality of its articles on issues facing the contemporary archivist” (“MAC”).

Museum and Society is an independent peer reviewed journal edited by Gordon Fyfe (Keeled University, UK), Kevin Hetherington (Open University, UK) and Susan Pearce (University of Leicester, UK). It was launched in March 2003 and is offered free of charge to individuals and institutions in March, July and November. A successor to New Research in Museum Studies (published by Athlone Press in the 1990’s), “Museum and Society is an interdisciplinary journal with a wide ranging interest in all issues associated with museums and other places of public culture concerned with collecting, exhibiting and display” (“Museum and Society”). In order to receive this publication at no cost, all one needs to do is register on their website. Full text articles are also available online through their searchable archives.
In the Spring, Summer and Fall of each year, The Getty Conservation Institute publishes a newsletter titled *Conservation*. Each newsletter is focused on a specific topic pertinent to the museum field. Past topics include “Emergency Management” and “Outdoor Sculpture.” Previous volumes, as far back as 1991, are available online³³xiv.

*Collections: A Journal for Museum and Archive Professionals: From the Practical to the Philosophical* was awarded the 2004 Best New Journal Award by the American Association of Publishers, Scholarly Division. Edited by Pamela White of the University of Iowa, *Collections* provides up-to-date research in collections management, including the topics of handling, preservation and research, among others.³³xv

Released bi-annually, *Heritage Management* is a peer-reviewed journal, published by Left Coast Press, Inc and edited by Kelley Hays-Gilpin (Associate Professor and Edward Bridge Danson Chair of Anthropology at the Museum of Northern Arizona), and George Gumerman, IV, (Chair of Anthropology at Northern Arizona University).

*Heritage Management*… provides a venue… to address broader societal concerns about managing cultural heritage. We address issues of resource management, cultural preservation and revitalization, education, legal/legislative developments, public archaeology, and ethics. The journal presents an engaging forum for those who work with governmental and tribal agencies, museums, private CRM firms, indigenous communities, and colleges and universities. It facilitates a multivocal arena for disseminating and critically discussing cultural heritage management issues collaboratively among professionals and stakeholders. (“Heritage Management”)

Subscriptions are available through their website for individuals and institutions and begin at $40 (one year, individual) and go up to $600 (3 year subscription, institutional).
The Institute of Museum and Library Services (IMLS) offers a “21st Century Museum Professional” grant. The program overview states:

Museum professionals need high levels of knowledge and expertise as they help create public value for the communities they serve. The purpose of the ‘21st Century Museum Professionals’ program is to increase the capacity of museums by improving the knowledge and skills of museum professionals (“21st Century”).

While there is a 1:1 matching requirement, the granting range is substantial at $15,000-$500,000 and grants are available for up to 3 years. IMLS also offers a grant called “Museums for America” that serves as the organization’s largest museum grant. The program overview reads “Museums for America grants strengthen a museum’s ability to serve the public more effectively by supporting high-priority activities that advance the institution’s mission and strategic goals” (“Museums for America”). Grants are awarded in three categories, one of which is Collections Stewardship (Management of Collections).

The National Endowment for the Humanities offers a “Preservation and Access Training and Education” grant. This grant, usually offered over the course of two years in amounts of between $50,000-$250,000, was designed to support regional and national “education and training programs on the care and management of, and the creation of intellectual access to, library, archival and material culture collections” (“Preservation and Access”).
Conservation Expenditures & Funding: Conservation/Preservation Funding

Only slightly more than 30% of surveyed institutions noted having applied for conservation or preservation funding within the last three years. The remaining institutions indicated the following two reasons as major determining factors for not applying for conservation/preservation funding: not being aware of funding sources, and lack of time/expertise. Applying for grants may be a daunting task, as each granting institution and program sets its own requirement guidelines. Weeding through the assortment of available grants to determine what one’s institution or project is qualified for is yet another frustrating procedure. The AAM provides an extensive list of grant sources and is an excellent place for a first-time or novice grant-writer to begin. AAM also provides links to search engines for federal financial assistance programs. Below is the list as included on AAM’s site:

What follows is a list of federal grant programs in which museums have participated:

1. Institute of Museum and Library Services
   a) Museums for America
   b) Museum Assessment Program
   c) Conservation Project Support
   d) Conservation Assessment
   e) National Leadership Grants
   f) Museum-Library Collaborations

2. National Endowment for the Arts
   a) Creativity
   b) Organizational Capacity
   c) Heritage and Preservation
   d) Education
   e) Access
   f) Challenge America

3. National Endowment for the Humanities
   a) Implementation/production
   b) Preservation and Access
c) Research and Education
d) Challenge Grants
e) We the People
4. National Science Foundation
   a) Informal Science Education
5. U.S. Department of Education
   a) 21st Century Community Learning Centers
   b) Gear Up
   c) The Reading Excellence Program
   d) Learning Anytime Anywhere Partnership Grants
   e) Teacher Quality Enhancement Partnership, Recruitment and State Grants
   f) E-rate
   g) Technology for Tomorrow’s Teachers Grants
   h) Community Technology Centers
   i) Technology Innovation Challenge Grants
   j) Technology Literacy Challenge Fund
   k) Title VI: Innovative Education Program Strategies State Grants
   l) Title I: Grants to Local Education Agencies
   m) Title II: Eisenhower Professional Development State Grants
   n) Star Schools Program
   o) Public Charter Schools Program
   p) Magnet Schools Assistance Desegregating Districts
   q) Safe and Drug Free Schools and Communities State Grants
   r) Field-Initiated Education Research Studies Grant Program
   s) Special Education State program Improvement Grants for Children with Disabilities
   t) Bilingual Education and Minority Languages Affairs: Comprehensive School Grants
   u) Bilingual Education and Minority Languages Affairs: Program Enhancement Grants
   v) Federal Work-Study
   w) Teaching American History Grant Program
6. U.S. Department of Transportation
   a) TEA-21: Transportation Enhancement Grants
7. U.S. Department of Commerce
   a) Technology Opportunities Program
8. Corporation for National Service (AmeriCorps)
   a) National Civilian Community Corps
9. National Institutes of Health
   a) Science Education program
10. U.S. Department of State
    a) Bureau of Educational and Cultural Affairs: International Partnership Among Museums
11. National Park Service
   a) Native American Graves Protection and Repatriations Act grants-in-aid
   b) Save America's Treasures preservation grants (“Federal Funding”).

Through their Save Outdoor Sculpture program, Heritage Preservation has provided a web page xxxvi on funding sources for conservation. This site gives a more in-depth look at specific funding programs. Information provided can also help an organization find an appropriate sculpture conservator.

Unfortunately, finding a potential funding source is not the only hurdle. Once an appropriate funding program has been identified, a grant application meeting each of the specific terms and requirements of that granting institution must then be completed and submitted. Govspot.com offers resources for organizations, including tips on how to prepare grant proposals. Free Management Library, at www.managementhelp.org, offers a page on fund-raising and grant writing designed to help institutions answer questions such as how much to ask for, what is a proposal and how should one be written, and how to design evaluation methodologies for grant proposals.

In addition, there are a slew of texts dedicated specifically to grant writing. One popular online bookstore, Barnesandnoble.com, provided 191 items when searched for “grant writing,” including titles such as Grant Writing for Dummies, The Only Grant-Writing Book You’ll Ever Need, and Complete Book of Grant Writing. Different books will work for different people and organizations, so one should look at a number of resources to select the most useful for their specific need level.
According to survey results, an impressive 73% of institutions are currently promoting awareness for preservation/conservation efforts in at least one way. While this statistic shows that the majority of institutions make some effort to educate the public regarding the value of preserving its cultural artifacts, simple raising awareness will not solve the challenges of collections management. As Heritage Preservation, in partnership with the IMLS states in a report entitled “Capitalize on Collections Care, “continuing care for collections is most successful when there is a stable base of financial support for this purpose” (“Capitalize” 3). That is to say there is a need for a continuous flow of dedicated funds for collections care, a task that is never-ending. The Heritage Health Index reported that 77% of U.S. collecting institutions did not have a line item for preservation in their annual budgets. Capitalize on Collections Care provides organizations with guidelines for building financial support for collections care. It explores methods of using how an institution cares for its collections to increase institutional support, and how to “explain to administrations, governing boards, and other stakeholders that collections care responsibilities need not be a perpetual drain on resources but rather are an exciting opportunity for attracting new support” (“Capitalize” 3).

Capitalize on Collections Care addresses the four main opportunities for contributions: individual, foundations, corporations and government. According to this document, the main philosophy behind fundraising for collections care is that in order to
succeed in the competitive world of nonprofit fund raising, the focus must be placed on making an investment, rather than a gift. This principle clearly applies to collections care—an investment in the preservation of our cultural heritage. Without this investment, future generations will lose the opportunity to experience and advance our heritage. Strategies and tips on how to engage staff and board members are given, as well as examples of how existing organizations have incorporated fundraising philosophies and strategies successfully into their collections care program. xxxvii

The Conservation Department at the University of Delaware and the Winterthur Museum provides a good case study of various ways that institutions can educate the public about collections care, preservation and conservation. Beginning with their website, the Conservation Department offers a general explanation of conservation, including a number of videos discussing the training and responsibilities of conservators, using specific preservations as examples. This video also discusses general collections care issues, such as what has caused damages and various methods for preventing further damage once conservation treatment is completed, bringing on-camera specialists from within the Winterthur Museum, as well as outside institutions. In July 2007, the department released a DVD on conservation. Segments from this DVD are available on their website. On Thursday afternoons, members of the public are invited to reserve a 30-minute appointment at a Conservation Clinic, during which they can receive information about the condition and methods of care for up to three works of cultural heritage. Additionally, on the first Wednesday of each month, staff members of the conservation department give guided tours of the conservation facilities. Lastly, they offer a list of conservation resources on their site for further information.
There is no reason to hide Preventive Conservation from visitors, as though it were a secret matter only to be revealed to initiates. If an object demands special Preventive Conservation care, tell the public; if an exhibition space operates under tightly controlled environmental conditions, put up a notice that says so- and why. Inform and explain. Better still, mount an environmental exhibit- ideally, one that includes objects that have been damaged beyond repair by the wrong temperature, humidity or light conditions. This information policy must reach beyond the exhibition spaces themselves. For example, where a museum decides to introduce a strict coatroom policy to keep outdoor clothing away from the display spaces, the explanation for the policy should be displayed as prominently as the policy itself (Cassar 12).

The content of this chapter has discussed specific information about the best practices of preventive conservation, which collections managers should find useful when providing care to their collection. However, before specific tasks can be performed one may need to implement an institutional or department policy for preventive conservation. This commitment to providing a higher standard of collections care is not always an easy effort. The following chapter will discuss ways to gain support, funding and additional skill-sets to make a policy implementation for successful and beneficial for one’s collection.

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i HHI statistics on overall condition of collection were broken down by type of object. In order to draw a conclusion, statistics were determined only on the types of objects most closely to represent the collections assessed in this survey. The following types of objects are included in these statistics—art objects, historic objects, archaeological collections (individually catalogued), archaeological collections (bulk catalogued), and natural science specimens. The following types of objects were excluded from these statistics—books/bound volumes, unbound sheets in linear feet, unbound sheets in items, microfilm/microfiche, photographic collections, moving image, recorded sound, digital materials and online files.

iii Available through CCA for $17.59 (as of publication) at http://www.cdncouncilarchives.ca/public.html.

iv Printed by the Alberta Museums Association and available for $60 (as of publication) at http://www.museumsalberta.ab.ca/Publications08.pdf.


vii The Professional Practices Series was edited by Roxana Adams, Assistant Director of Programs for Museum Advancement & Excellence, American Association of Museums.

viii Percentage of institutions reporting significant, some and unknown damage to collections from environmental factors—Light 76%, Improper Storage or Enclosure 72%, Airborne Particulates or Pollutants 58.7%, Pests 41.9% and Water 41.1%. (“Heritage Health”)

ix Gail Dexter Lord is President of Lord Cultural Resources Planning and Management Inc., a large cultural planning firm, which she co-founded in 1981 with her husband Barry Lord.

x A brief teaser containing various pages from this text is available for free online at http://books.google.com/books?id=q-btO9xTZYIC&pg=PA191&lpg=PA191&dq=museum+lighting+controls&source=web&ots=kCJNB2ecyW&sig=vdTNptZaGSYJruF-Yv-EcL1OaqM&hl=en#PPA85,M1.


xii This pdf is available at http://www.getty.edu/conservation/publications/pdf_publications/airborne.pdf.

xiii Available at http://www.getty.edu/bookstore/titles/gaseous.html

xiv Pollutants in the Museum Environment is available on Amazon.com.


xvi 61.3%

The National Park Services offers a web-page providing a number of resources for information on NAGPRA laws and regulations at http://www.nps.gov/history/Nagpra/MANDATES/INDEX.HTM.


Available at http://www.clrc.org/downloads/disastermanualrev.pdf

This web page can be accessed at https://www.heritagepreservation.org/pubs/fgforms.htm.

This fee is as of Spring 2008. Additional information can be found at http://www.collectioncare.org/training/trol_classes_ms205.html.

http://heritagepreservation.org/lessons/index.html

http://matrix.msu.edu/~disaster/index.php

Additional information about NEH grants is available through their website at http://www.neh.gov/grants/index.html.

This online listing of courses is available at http://heritagepreservation.org/lessons/courses.html


This can be accessed at http://www.cci-icc.gc.ca/tools/framework/index_e.aspx.

Additional information about courses offered through ICA can be found at http://www.ica-artconservation.org/education/current.htm.

Additional information about courses offered through Campbell Center can be found at http://www.campbellcenter.org/pages/schedule.html.

Additional information is available at http://www.gwu.edu/~mstd/.

Additional information can be found at: http://www.scils.rutgers.edu/professional-development/preservation-management-institute.html.

ICA is a member of the North East Ohio Alliance for Response, part of a national initiative of Heritage Preservation.
Subscription and archive information is available at http://www.altamirapress.com/RLA/journals/collections/.

A pdf copy of Capitalize on Collections Care is available from Heritage Preservation at http://www.heritagepreservation.org/PDFS/COC1o.pdf, and a hard copy can be purchased for $2 (as of publication date) at the Heritage Preservation bookstore.
CHAPTER VI
A FIVE-STEP PROCESS FOR PROVIDING QUALITY COLLECTIONS CARE

In order to implement this policy of Preventive Conservation, it is not enough simply to have at one’s disposal a certain quantity of funds; what is needed above all is the skill and know-how of qualified men and women of goodwill (Blanchegorge 20).

I extracted from analysis of the thesis survey results obstacles that are imposing limitations to Ohio collection managers’ ability to provide quality collections care. These limitations include a lack of resources, a lack of appropriate training, a lack of internal administrative support, and a lack of funding dedicated to this goal. Funding is always an issue. Many of the best practices previously discussed would require some, if not signification amounts of capital to perform. No report can provide a solution to this problem. However, I believe addressing the other issues of resources, training and support in a specific five-step process may encourage the development of more compelling cases for securing financial resources dedicated to increasing collections care standards.

I feel that the current problem is that we often tackle these steps in reverse order, trying to address and overcome the most difficult obstacles first. Some feel if they could just gain additional funding, all the other issues will be easier to deal with. This may be true; but, given the current severe economic situation of our country, it is unlikely to
occur. It is a game of odds. Is the best use of our time to fight the battle for limited funding resources and risk losing? Before answering that question, I believe that we need to be reminded what we are gambling with—our cultural heritage. I propose that we, as collections managers, approach these challenges in the opposite direction. I feel we need to stop taking the big risks and seeking the quick, fast payoff that may never materialize. Some wise person has said, “You can’t fix a money problem with money.” Let’s say that we are successful and are awarded a large sum of money to put towards collections care. Do we have the information, training, and support to know how to use it in the most effective way? In the end, this money will eventually run out and we are back where we started, gambling with our collections. This five-step approach may require more time and effort, but I believe it will provide greater and richer benefits in the end.

Step One: Develop A Personal Philosophy For Collections Care

Step One was presented and defended in some detail in the Introduction to this paper. I discussed my reasoning as I formed my personal professional philosophy. I also presented what I feel is an umbrella philosophy for being a registrar. I subscribe to the practices of Preventive Conservation and Continuing Education as the two core elements for implementing this philosophy into practice. While this approach has made the most sense to me at this point in my career and with experience I have acquired to this point, each collections manager must develop a personal philosophy defining the reason for their involvement in an ambitious effort to care for cultural heritage. The questions I
suggest collection managers ask themselves when developing this philosophy are "Why do I do what I do?" and "How do I do what I do?" The verbalization of a personal philosophy based on the answers to those two questions will serve as the reflection point for each of the remaining four steps and influence the direction, manner and intensity in which one performs the remaining steps.

Forming a Professional Philosophy of Proactivity

I would imagine that we most often become aware of our weaknesses, in any arena, when something bad happens—when information was needed to prevent a negative outcome from occurring, yet was not there. One discovers the importance of savings when their spouse is laid off from work and bills continue coming in. One discovers the need for insurance when the basement floods and valuable possessions are lost. One wishes more time had been spend with a toothbrush as they lie in the dental chair getting a cavity filled. The same goes for continuing education. The need for additional information or training is most apparent when the lack of information results in a problem. There is a big difference between being reactive and being proactive.

In 1976, when he was president of the American Association for State and Local History, Thomas Vaughn spoke about the need for a generally accepted mission statement for our professional community, saying:

A profound weakness pervades part of our professional and institutional life, for we have not established a short and simple code of formal rules and procedures- an oath if you will- a sense of professional conduct and ethics learned, accepted and recognized by all, and therefore seldom referred to (Vaughan 32).
While a professional oath is important, I argue for, the importance of a personal, professional philosophy as well. Personal positions regarding issues such as preventive conservation, obligation vs. accessibility, and continuing education should be addressed in a personal, professional philosophy. One can develop a more sophisticated philosophy by answering questions related to deals, such as: Where are my standards set? Do I demand excellence or am I accepting mediocrity? Am I setting appropriate goals? When we have evaluated what we would like our standards to be, and have identified what we believe in, we are able to set goals and to establish policies to achieve those goals. Whatever one’s philosophy, I encourage us all to build into our beliefs a policy of proactivity.

Policies are set in place to ensure a level and standard of professionalism within our field and our institutions. By making proactivity our policy, we are committing to reaching for our goals (i.e.: quality collections care) in a timely manner. I have discussed how one can go about achieving that. Now, I propose the need to set a policy for achieving this goal sooner, rather than later. The need for this is simply a matter of effect on our collections.

Reactivity can place a collection in harm’s way or, at the very least, lower the standard for care. This entire paper has been focused on being prepared to provide sound care for our cultural heritage. Being prepared involves anticipate situations. Late preparation makes the process reactive rather than proactive. Not taking the time to plan ahead leads to rushed decisions that may jeopardize a collection. An example of how one can provide quality collections care by being prepared is by participating in discussions about new acquisitions.
At first sight, the rate of growth of a museum collection seems to have little to do with preventive conservation. However, new acquisitions demand space and staff time, and may require special protection; unless there are unlimited resources to satisfy these demands— which is highly unlikely—the new objects will increase the pressure on the care of the existing collection. The implications for conservation staff are clear: they will have to be involved at an early stage in any discussions—should the museum be collecting what it cannot adequately care for; and if an acquisition is deemed vital to the collection, where can additional resources be obtained for its care (Cassar 5)?

The reactive approach to this situation would be to not take part in acquisition discussions and simply deal with whatever is brought into the collection. The risk is of allowing objects to come into the collection environment that take resources away from the existing collection. The result could be that, even if for a temporary period, the integrity of both the existing collection and the new acquisitions would be threatened. With a proactive approach, preparation results in preventing this risk from even occurring. Various other means of being proactive will be discussed in the remaining steps.

Step Two: Evaluate the Situation and Identify Weaknesses

One cannot know the next step without knowing where they are. The second step in this process is evaluating the existing situation. The “situation,” as we refer to it, involves personal knowledge, current practices and policies, and current condition of collections, and environmental conditions. Analyzing and evaluating the “situation” can be done through assessment processes and collection inventories, as discussed in chapter
four. Assessments should highlight the areas of need, though an assessment is not restricted to condition, storage or other collection-specific needs. It can also include human assessment of such things as personal goals, current level of training, and commitment to acquiring additional training or certifications.

The information that was presented in the previous chapter is so important because, while it is not comprehensive of the breadth of Preventive Conservation practices, it opens up an opportunity for learning and discussion. As mentioned in the Introduction, new research and understandings within the field will expand and improve upon some of the information previously presented, while possibly even eliminating others from best practice. As we discover new information about existing materials, artists and artisans discover new materials to create cultural objects. Changes in technology mean changes in types of objects in collections, as well as types of resources available. The existence of materials from the 20th and 21st centuries in an institution’s collection causes a unique set of concerns, one of which is the availability of working machinery or hardware to access such items as film, video, sound recordings, and digital media. If technology changes too rapidly for collections, the availability of early technical equipment, hardware and software needed to access the information contained by these media can become scarce. Therefore, the process of transferring collection materials to modern formats is ever important and necessarily ongoing (A Public Trust 6). The result is the need for constant attention to and research into existing materials, as well as forward thinking into the future needs of one’s collection. Evaluation is a way to begin forward thinking. This is why continuing education is such an important part of my
professional philosophy and works in coincidence with Preventive Conservation as the two threads to form the Five-Step Process for Providing Quality Collections Care.

Step Three: Collect Information and Receive Training

Once needs for additional information are determined, collecting that information is the next step. Often, steps two and three occur simultaneously. Areas of need are often apparent without a formal assessment. Or, research may make an unrecognized need for information and training. The previous chapter was designed not only to provide registrars with information on certain topics of collections care, but also to serve as an outline for determining one’s areas of need. Reading through the chapter, it should become apparent which topics are familiar and which topics provide new information. Obviously, no one topic discussed in chapter 5 will be all-inclusive, and additional information may be necessary. For this reason, I have included a variety of additional resources for further research. Also, in this chapter, I addressed the issue of training. By reading through the curricula of a variety of collections care training programs, one can select those most beneficial and take advantage of those training opportunities by accessing the resources provided.

Some may see a lack of information as an obstacle. However, acquiring information is the easiest of obstacles to overcome. It only requires a personal commitment. Part of the process of building the case for the next level of support is committing to continuing one’s own education and advancement as a collections care
professional. A multitude of resources are available to museology professionals, at low or no cost. Most of these resources are available online; and, whenever possible, I have provided information for accessing them.

Because the five-step process works by following a specific order, each step completed better prepares one for the next step. By finding what resources exist and making them available to ourselves and each other, we are in a better position to know what training is necessary. In many ways these two obstacles work hand-in-hand. Informational resources provide a way to receive additional training and training programs serve as resources for professionals. The key is to select appropriate training, and information is necessary to do that. Through independent research, we seek information and improve our personal knowledge pool. This is also a self-reflective process, because as we receive information, we can evaluate what our weak areas are. We can then, by seeing what is available to us, prioritize the training we would like or need to have.

Registrars as Practitioners

In the same way that curative medicine concerns living beings suffering from illness, curative conservation concerns an item of heritage which risks being lost because of the presence in it of an active destructive agent: insects in wool, mould on paper, salts in ceramics, or simply an object unable to bear its own weight. By contrast, preventive conservation, in like manner to preventive medicine, concerns all items of heritage, be they in a sound state or one of active deterioration. It is aimed at protecting them against all types of natural and human aggression (de Guichen 4).

This quote illustrates that registrars, like those in the medical field, can be seen as “practitioners.” Medical practitioners, while obviously highly trained and specialized
professionals, will never know everything there is to know about their field; nor can they ever know with absolute certainty what to do in any situation or predict without a doubt the resulting outcome. Every time a doctor makes a diagnosis, he or she is essentially making an educated guess at what is occurring in the patient’s body. Every time a doctor prescribes a medicine, he or she is essentially making an educated guess at how the patient’s body will react to the medicine. Obviously, the more trained and informed a medical practitioner is, the better he or she will be at making these educated guesses and the higher the chances of reaching the desired outcome. However, experience plays a large part in this as well. Each and every patient that a medical practitioner examines and treats is providing a research and learning opportunity. If a doctor learns something new from each patient treated, then each and every case that doctor works on better prepares him or her for making a more educated guess in the next case.

This is quite similar to what a collections care specialist does. Each and every object that a registrar will be responsible for storing, handling and exhibiting will need to be evaluated individually, and “diagnosed” as to the appropriate method of care necessary. There are best practice standards that dictate how like-groupings of objects should be stored, handled, and exhibited; however, there will always be exceptions, in which the size, condition, construction, chemical make-up, etc. of the object requires it to be dealt with in a different manner. Two photographs may appear to be identical—they may have been printed by the same photographer, in the same year, on the same paper, and in the same size—however, many variable factors, such as length of time in chemicals during processing, or water during rinsing, or the way in which they were each handled and exposed to elements in the past, can result in one of the photographs
deteriorating at a much faster pace than the other. Each time we “treat” an object, meaning house it, move it, display it, etc., we are making an educated guess at what this will do to the work itself. While we may know a lot about object materials and construction, we will never be able to say, “If I store this object this way, it will begin deteriorating on June 18, 2014 and by April 13, 2025, it will have completely disintegrated.” Collection Managers are practitioners and continue their education and training with each and every object they house, store, move, repair, exhibit, ship, etc., as well as in various other ways.

Experience is a form of on-the-job training that should not be overlooked. While training is traditionally viewed as a formalized program provided by an educational or professional institution, much can be learned through experiences such as apprenticeships, internships and shadowing. In addition to reviewing formal training programs available to meet one’s needs, I suggest that collections managers also consider these other types of training situations. A collections manager with little experience with three-dimensional objects could contacting a nearby institution with a strong holding of sculptural works and ask the registration department if they can volunteer, intern, or shadow their registrar for some on-the-job training. I encourage members of this community to work together to provide training opportunities to one another, as we all serve a common goal.
Step Four: Seek Support

By showing a dedication to professional improvement, whether by being dedicated to becoming a better collection manager or to becoming a better employee, one increases the likelihood of securing needed internal and external support. Being well-trained and well-informed makes a registrar an educator and disseminator of information. This ability to advocate intelligently is what prepares us to make the case for more support from museum administrators, other professionals in the field, trustees, and/or the public. It is important to show that one is prepared and committed to providing a higher standard of collections care and that one is capable of speaking convincingly about the benefits and necessities of this care. Hopefully, this will result in respect and support from those constituents from which we seek assistance.

Understanding Oppositions for Support

Support is an important issue as many things we may wish to do as collection managers cannot be accomplished without the support of fellow staff, administration, trustees, or maybe even the public. Support may be needed in the form of funding, reallocation of resources, time off, or simply getting an “okay.” If gaining any form of support has been an issue in the past, we cannot successfully build the case for support in the future without first understanding the opposition’s viewpoint.

According to Jeffrey Levin, an editor for the Getty Conservation Institute, gaining support for Preventive Conservation is much easier to do in theory than in practice. Levin
feels that the lack of attention placed on Preventive Conservation practice and training is due to the inability to “see” its results.

Because the deterioration rate is difficult to quantify, the results of preventive conservation are not easily measured, nor are the results visually dramatic since preventive conservation does not involve improving the appearance of objects. In comparison, attending to the immediate conservation needs of an important or frequently exhibited piece can seem far more significant- and urgent (Levin).

Collection managers are behind-the-scenes employees. What we do on a daily basis may not have occurred to the public as being necessary. Someone can come into the gallery and see works of art on a wall, then come back the next year and see a whole new selection of artworks, without recognizing what it took to remove and replace the works. The easiest thing in the world is to create a museum, says Paul Perrot, the director of the Santa Barbara Museum of Art. The next easiest thing is to add galleries to it. But when it comes to the operation of these galleries—whether it’s the guards, the curators, or the conservators- the funds are not there because there is no glamour to it (qtd. in Levin).

These “unglamorous” jobs are the ones that tend to fall between the cracks, whether in terms of administrative support, public awareness, or funding. While they are essential, they are only noticed when they are absent. They are not immediate, exciting or necessarily apparent.

Conservation can be seen as exciting, because the results are, somewhat, dramatic. Those outside the conservation staff, such as the public, administrative staff, or trustees—can see it take place with their own eyes. They can “ooh” and “ahh” at the magic occurring in front of them, as layers of tarnish and grime wash away from the surface of a Renaissance painting. Preventive Conservation isn’t “seeable.” Outsiders cannot see the halting of deterioration. In fact, if Preventive Conservation does its job, everything stays the same. Consistency in condition is important or even invaluable when
considering an object’s contribution to cultural heritage, but the process does not provide the immediate satisfaction of visible results.

It may be difficult to ask for support, funding and training in Preventive Conservation for this reason. “It means putting money into things that may have no visual impact, and therefore lacks appeal to the public upon whose support the institution depends” (Levin). When public support and perception is a priority to administration, it is important to address the benefits of Preventive Conservation to that constituency. Methods of using preservation, conservation and Preventive Conservation as a tool to engage the public were discussed in chapter four. If the argument for support because of the benefit to cultural heritage is not sufficient, one can find a way to discuss how the public can be engaged, educated, and intrigued by the program they wish to implement. The public is beginning to become increasingly aware of institutional activities, as they should be, as their cultural heritage and perhaps a portion of their tax money is being managed by such non-profit institutions. Promoting good policies of collections care is a method of promoting the institution to the public as a good steward of public trust. Whenever possible, we should be seeking ways to educate the public on issues of preservation and conservation, even if there is support for these activities within the institution.

There has been a long standing struggle between preservationist/conservationists and administrative staff in relation to the debate between obligation and accessibility. This is brought to light in situations in which one party feels it is important to exhibit or loan a work from the collection and another party feels it is unbeneﬁcial or unsafe to do so. It is important to develop a relationship with administrative and curatorial staff that
encourages an open dialogue for discussion when such situations of exhibition and loaning arise. A far better plan than having a single party making these decisions, is to reach consensus among all informed departments within an institution. While we may, as collection managers, feel we are doing the right thing by safeguarding our trusts, we must never become the “collection police.” No one person or group of people should become the single entity who makes calls on uses of objects and brings down punishment on others for doing things that may be adverse to the collections. This all leads back to the concept that we must all work together as a team for the greater good of the collection.

When seeking support for changes in policy, it is important to remember that those who developed or supported existing policy may take your recommendations as a personal or professional insult. The need for change can indicate to some that what was being done initially was being done incorrectly. Professionals within the field may be unwilling to accept, even in theory, the concept of Preventive Conservation because doing so will require pointing out the flaws in current working processes and systems. Accepting a viewpoint such as this is placing pride ahead of our collections. Also, it may be that others have not directly seen the negative consequences yet of bad practices and therefore feel that current standards are working just fine, making improvements unnecessary. It is important to promote the viewpoint that changes are proactive approaches to providing the soundest care possible our cultural heritage.

There is also added value in the increased reputation of an institution that cares for its works; such a profile makes it easier to convince other museums to loan valuable or fragile objects to the borrowing institution (Marstine 90).
Step Five: Seek Funding

Gaining support from one's administration, board, and public is a huge step towards gaining additional funds. However, there is only so much money to go around. Each and every professional within the museological community is fighting for the same dollar, and the collective community in turn is fighting against other organizations and programs. Being a trained and supported professional should prepare one to be the most likely recipient of funding. However, the point of this process is to prepare ourselves in the most beneficial way not only to be the recipients of funds, but to be better equipped to use those funds. Even with no statistical data to back it up, it is safe to assume that each year funds are mismanaged within our industry. We cannot focus only on getting funds. We must also focus on using them resourcefully to ensure maximum benefit to our cultural heritage collections.

Now this process will most likely repeat itself. One will never reach a point of being fully trained in all aspects of a job; this is why it is called “continuing education.” As new research becomes available, and as time proves previously believed facts to be inaccurate or reveals new information and processes, our potential information pool will expand and we will need to seek new resources. As people cycle out of our administrations and our boards, we will once again be challenged with asking for support. And it is highly unlikely that we will ever be the recipients of enough funds to require us to never again need to seek funding. So, as we complete our steps, new obstacles will build up and the process will begin again. This is why it is important as a community of collections managers to think about, discuss and address these issues. If we set a
precedent now for being dedicated, effective, and informed museological professionals, and continue to advance the role of a collections manager within our field, as new professionals replace us, the cycle will hopefully begin again in this same manner. If our generation develops a code of conduct if you will, that begins with reflection on why we do what we do, is grounded by ethical obligations, and searches out the final product in a resourceful manner, the following generation of collections managers can eliminate the step of reinventing the wheel.

Additional Tips for Implementing a Proactive Policy for Collections Care

There are a number of steps that an institution can take to ensure a proactive approach to collections care. This section will discuss a number of options that can help a collection management staff move forward with a proactive approach within their institution. Some of these tasks will provide the opportunity to begin bringing administrative staff and/or trustees on board with collection care and the implementation of a Preventive Conservation program. These suggestions will hopefully result in occasions in which collections care staff can demonstrate its commitment to high standards of Preventative Conservation collections care to those within the institutional framework. Every administrator is happy to find areas of excellence within the institution; and in this case, may be inspired to focus more attention on the importance of such an approach. Certainly administrative commitment is essential to reaching collections care goals.
One of the first guidelines for developing a proactive Preventive Conservation approach is determining who is authorized to carry out the Preventive Conservation plan and who is restricted from such activities until further training. It should be a goal to bring the entire institution staff on board with the Preventive Conservation program; however, it is not safe to grant untrained individuals access and responsibility for carrying out the program. A little forward thinking will indicate that it is likely that this situation will result in damages, wasted resources, and a general slowing down of the process. “As the Preventive Conservation approach to collections care requires responsible behavior by all museum professionals, it is important for individuals to understand their own limitations as well as those of others” (Edson 203). This is not only a responsibility of collections management staff, but also that of each individual within the institution. Part of the initial training and implementation of a Preventive Conservation approach should include a counseling session in which all staff members are charged with the responsibility of seeking assistance, advice, or instruction when faced with a situation which they have not been formally trained to handle. The philosophies of “think before doing” and “there is no such thing as a stupid question” apply well to this situation.

Part of the planning process for implementing a Preventive Conservation program is the efficient allocation of resources for collections care. Often, those responsible for collections are not trained in the administrative functions of management of personnel, time, space, supplies, and money. Likewise, those responsible for the daily management
of such resources are often not trained in collections care. The planning process provides opportunities for these two departments within an institution to begin to work together.

But collections also exist within an institutional context. Problems with the physical environment of collections are better understood and are certainly more likely to be resolved if they are debated and discussed in the context of the institution’s operational framework. This wider setting brings in different people with different ideas for collection use, and introduces broader and more complex issues. The collection can no longer exist in the separate, central position it normally occupies in the minds of conservators and curators (Cassar 4).

Showing a sensitivity and attention to cost-efficient and sensible allocation of resources can show administrative personnel a commitment to the overall health of the institution and a dedication to working together for the common good of the team and the mission. Additionally, this process can lead to training opportunities for institutional staff outside of the collections environment in order to learn about basic collections care, resulting in a larger and stronger body of collection-conscious staff.

You can be as clever as possible when it comes to dealing with technical matters, but if you can’t speak about these things to the director in language he or she can clearly understand— which means understanding the financial implications as well— and if you can’t communicate to curators and exhibition designers, and if you’re not prepared to work with museum colleagues, then nothing’s going to happen. It makes no difference how much you know (Knell 86).

“Preventive Conservation is collaborative in nature… working both with other museum professionals and with external specialists such as architects, designers, engineers, and building contractors” (Dardes). Just as the importance of working with institutional staff on resource allocation was discussed, it is equally as important to work with institutional staff and outside contractors on any project in which the collection is directly or indirectly, immediately or eventually, involved. Such projects would include
developing policies for rental of museum space to outside parties, construction of new 
exhibition wings or installation furniture, or, as mentioned earlier, discussion regarding 
collection acquisitions. Additionally, experience working with such individuals can assist 
collections care providers by providing a more in-depth understanding of how the 
administrative staff functions, who pulls the strings, who one would need to talk to for 
specific matters, and who one would need to go to in order to make thing happen

Preventive conservation staff… cannot remain aloof either from wider 
management issues or indeed from the public world beyond the museum 
doors. And the relationship must be more than a one-sided series of 
demands from the conservation department to the museum management: 
preventive conservation staff should strive to participate in the 
development of museum policies, to be part of the decisions that 
contribute to a well-run museum and not just those that affect the 
collection. It is as important to know the size of the museum and who the 
decision makers are as it is to know the size and location of a 
collection (Cassar 4).

Seek Funding Sources

If an institution has a development department or a professional on staff who 
handles grant writing for the institution, it is a great idea for the collection manager to 
develop a relationship early on, regardless of whether or not there is an immediate need 
to collaborate. This person can assist collection staff with identifying and preparing grant 
and other funding applications. If there is no designated grant writer, collections 
managers should charge themselves with the responsibility of knowing what funding 
sources are available and, if necessary, applying to them. This would apply to funding 
resources not only for preservation and conservation activities, but also for continuing 
education opportunities (such as scholarships to attend professional meetings and
conferences), facility updates, and implementing public programs that educate on preservation and conservation issues.

Attend Outside Learning & Networking Opportunities

Attending workshops, conferences, and seminars is important for the obvious reason that they are sources of training and insight into new materials and techniques available to the industry. However, these kinds of events can offer extremely valuable opportunities for networking—meeting new people in the field who can serve as resources, mentors, sounding-boards, and/or mentees. They also present opportunities to establish a personal and institutional reputation within the field.

Subscribe to Publications

Chapter four listed a number of museological publications that individuals and organizations can subscribe to in order to keep a pulse on the industry, especially during times when one is not able to seek outside education. Scholarly journals offer more than papers on current issues and topics related to museum work. They also serve as sources for information on upcoming training opportunities, recent text publications, and new vendors and vendor offerings. Some, such as AAM’s Aviso, list promotions and appointments in top positions within the field, keeping one informed about “who’s who” in the industry. It is important to read publications related to general museum work as well as those that are specialized to collections management. Keeping a pulse on what is
occurring within the museological community overall increases one’s professional credibility with others within one’s institution and the field. Credibility strengthens relationships and is essential to developing collaborative opportunities.

Form Mentoring Relationships

Having a few mentors at the very beginning of my career was extremely valuable to me as a young professional. By forming relationships during my collegiate education with museological faculty and professionals, I became a sponge for all they could offer me. This not only made me a better student and better trained registrar, but it also helped me solidify what it is I wanted to do for my career and develop a passion and drive for my chosen profession. It was my involvement with these mentors that inspired me to develop a personal philosophy for collections management.

Mentors provide bouncing boards for questions, concerns, and ideas and serve as sources of advice and support. If you do not have a likely mentor within your institution, or even if you do, I encourage you to seek a mentor from an outside organization. Some professional organizations offer mentorship programs, which can assist with pairing one mentees to an appropriate mentor. If one of these programs is not available to you, try contacting someone you admire in the field and ask if they would be willing to serve as your mentor. Most collections managers will be more than happy to do serve this function. I was surprisingly impressed with this community’s willingness to assist with my thesis survey project. A survey response rate of almost 50% is remarkable and a testament to the supportive nature of this professional community. I also want to
encourage everyone to pay it forward. After gaining a few years of experience in this career, find someone whom you can foster and mentor.

There are things we all can do to help foster communication and exchange of information and ideas. Communication is important. Every time we exchange information and ideas we are continuing our education. Here are a few ideas on how one can facilitate this:

Form a “Young Professionals” group. Many of these exist within larger professional groups; however they may not be accessible, especially to those in smaller institutions in rural areas, or they may not meet often enough for a new collections manager needing continual guidance. Find a hand full of museological professionals either within your own institution, or from surrounding institutions, and develop a meeting schedule. You might want to even consider inviting museum studies students to join, which further promotes and supports mentorship and can provide opportunities to discuss issues and seek advice in a supportive and unintimidating setting. Once the group has formed and developed consistency, additional professionals can be invited in to offer experience, advice and specialization on topics of interest, either as regular attendees or occasional speakers.

Visit local collection-holding institutions to meet with professionals and tour other facilities. Scheduling appointments with collection managers at nearby institutions can help foster relationships and communication. By visiting fellow collection managers on their home field, you can see how other institutions are run and possibly even learn new ways of doing things, picking-up tips and suggestions for improvement in your own work environment. Asking a more experienced collection manager to come tour your
facility can also prove to be a learning experience, as they may offer insight into how to solve current issues or point out solutions or improvements that you were not aware of.

Join a listserver, such as the RCAAM Listserver, and read it! Listservers can provide a voice for you in a time of need, by sending out any questions you have to a large community of professionals. Yet, perhaps the most beneficial aspect of listservers is the variety of topics that you can read and learn about. A range of issues float through listservers on a daily basis, including some topics you may not have been aware of. If computer storage space allows it, you might want to consider archiving topics that you feel might be useful in the future, allowing you to refer back at the appropriate time. Taking the time to read incoming emails is key though, because one may never know when a question will be posted on which they can offer some insight. One should not expect the listserver to be there in their time of need, unless they are available when others pose problems and seek solutions.
A Call for Refocusing

According to James Cuno, President and Eloise W. Martin Director of the Art Institute of Chicago, the museological field in general has drifted away from, or perhaps has forgotten the basic principles of collections management. In “Why Art Museums Are Essential,” Cuno defends a statement that he made during the conference “Stewards of the Sacred: Sacred Artifacts, Religious Culture, and the Museum as Social Institution.” Cuno said,

…the biggest problem facing art museums today is the emerging consensus that the art museum ought to be first and foremost a social institution intent on doing ‘good’ in society, a ‘good’ that can be known, demonstrated, measured and justified in terms of particular social benefit… We need to be more modest in our efforts, to get back to basics, to once again regard as our most important contributions the acquisition, preservation, and presentation of research of our permanent collection (28).

Cuno goes on to argue that all museums, though he mentions art museums specifically, have become responsible for more than the stewardship of cultural heritage, to the detriment to their collections.

Art museums are dedicated to collecting works of art, preserving them for all of time, and making them available to visitors: a statement so obvious
and mundane as to be almost meaningless, one would think. But visits to many of our museums suggest that we are expecting art museums to be about many other things as well: shopping opportunities, dining experiences, musical performances, theatrical productions, cocktail conversations, and educational and socially therapeutic activities of various kinds. (28)

Museums receive public funds in various ways, and “In return they pledge to work on behalf of the public, acquiring, preserving and interpreting works of art for the public’s instruction and enjoyment” (28). Cuno uses this museological function to make a distinction between museums as public trusts and land trusts. Both preserve items with perceived public value; yet, governments want museums to affect social change by attracting higher attendance, particularly by people of diverse ethnic backgrounds. The business community wants museums to “trigger financial activity and improve the living conditions for the cities they govern and in which their employees reside” (Cuno), by making museums tourist destinations. Scholars and students want museums to serve as resource forums for research and teaching.

Museums are different things to different people. Often sitting unhappily in this mix are the works of art that museums, and museums alone, collect. That is, virtually everything else that museums do—from lecture programs to school activities, to food and retail operations—is done equally well by institutions other than museums. Only art museums collect works of art for the public’s benefit (29).

Cuno goes on to say,

I said earlier that museums are public trusts like land trusts. They are also like agencies for endangered species. They are dedicated to setting aside and preserving the existence of works of art because works of art are important to our understanding of humankind, its past, present, and future. We do not ask more of land trusts or endangered species than that they exist and add to our planet’s biodiversity. We do not require them to contribute to a region’s cultural tourism or be visited, seen and studied by an ever-increasing number of people, and people of a certain kind. It is simply thought that open land and rare plants and animals are good for us.
Art is good for us too. And museums are dedicated to preserving art as rare, even endangered, specimens of human ingenuity and creativity. (29)

I agree with Cuno’s statements, and believe that museums have lost focus of the basic philosophy of what it means to be stewards of public trust. Pressure has been put on museological institutions from various agencies to provide much more than stewardship. These activities are often at odds with what it takes to provide quality stewardship. Cuno calls for a reevaluation of what we are doing and why. He calls for institutions to revisit the foundational philosophies I presented earlier. When the field directed its focus away from this foundation, our cultural heritage became a piece on the priority totem-pole of museum offerings, rather than the single priority. I believe strongly in the argument Cuno makes. He has told the cultural holding community to refocus its priorities; and I have attempted, with this paper, to outline why and how the community should do so. A refocusing on Preventive Conservation as a theory and practical application is the way for collection managers and museological institutions to perform its necessary functions in the best possible way and for the most appropriate reasons.


APPENDIX A

SURVEY LETTER

Dear Colleague,

My name is Tracy Graham and I am a Master's candidate in the Arts Administration program at the University of Akron. I am currently writing a thesis, which deals with the museum registration field, and its roles in preservation, preventive conservation and continuing education. I have developed a survey to better understand the challenges facing the collections management of cultural heritage in Ohio institutions, as related to these topics.

Since the Neil Armstrong Air & Space Museum is one of Ohio's collection-holders, I am writing to see if you would be willing and able to provide answers to the following questions. My hope is that the results of this survey will give registrars, and administrators collectively, a better understanding of the needs of our cultural holdings. Once compiled, a report on the findings of my survey will be provided to your institution. Participation is voluntary and returning the survey will signify your agreement to participate.

This survey was designed to be completed by your organization's Chief Registrar. If there is no Registrar on staff, then I would like whoever is primarily responsible for the care of your collection to complete the survey. To remain within a reasonable timeline, I would appreciate return of these materials in the SASE provided by February 1st, 2008.

With results of this project, I hope to draw relationships based on a previous survey titled A Public Trust at Risk: The Heritage Health Index Report on the State of America's Collections, a project of Heritage Preservation and the Institute of Museum and Library Services. Even though you may have participated in the Heritage Health Index, this project contains new questions and will provide insight specific to Ohio institutions.

This survey shall remain anonymous, however I would like to have the opportunity to speak with you in more detail about your experiences and views on these topics. If you would be willing to participate in an interview, or if you have any comments or questions in regards to my project or this survey, please email me at tracg45@uakron.edu.

I believe strongly in preserving the cultural heritage of our region, state and nation, and I hope that my thesis research will provide insight into how we can all ensure that our important artifacts are available for future generations.

Thank you,

Tracy Ann Graham
Graduate M.A. Candidate
Arts Administration Program
The University of Akron

School of Dance, Theatre, and Arts Administration
Akron, OH 44325-2902

Dance Program 330-972-7946 • 330-972-7892 Fax
Theatre Program 330-972-7880 • 330-972-7939 Fax
Arts Administration Program 330-972-5989 • 330-972-7182 Fax

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APPENDIX B
SURVEY

General Information

Check the type(s) that best describe your institution:*  
☐ Museum (non-profit)  
☐ Arboretum/Botanical Garden/Aquarium  
☐ Art  
☐ Aquarium  
☐ Children's/Youth  
☐ General  
☐ Historic House/Historical Society  
☐ History  
☐ Natural History/Anthropology  
☐ Nature Center  
☐ Science  
☐ Zoo  
☐ Other: ____________________________
☐ Cultural Organization  
☐ Civic/Rehabilitation Center/Library  
☐ Fair Building/Religious Institution  
☐ Library  
☐ Religious Institution  
☐ Other: ____________________________
☐ University  
☐ Department Museum or Gallery  
☐ Library Student Center/Union  
☐ Museum or Gallery  
☐ Student Center/Union  
☐ Other: ____________________________
☐ Other: ____________________________

Condition of Collections

Frequency of Inventory: ____________________________
Date of Last Inventory: ____________________________

What determines the length of time between inventories (i.e., volume, personnel, etc.)?

Please indicate by estimated percentage how much of your overall collection fall into the following categories (overall condition of collection):**

Unknown Condition: ______
No Need of Conservation/Preservation: ______
In Need of Conservation/Preservation: ______
In Urgent Need of Conservation/Preservation: ______

Does your institution have a written, long-range plan for the care of collections:**
☐ Yes  
☐ Yes, but it is not up-to-date  
☐ No, but one is being developed  
☐ No, but preservation is addressed in our overall, institutional long-range plan  
☐ No  
☐ Don't Know

Has any damage to your collection been caused by the following environmental factors:**

☐ Water:
  ☐ Significant damage  
  ☐ Some damage  
  ☐ None  
  ☐ Don't know

☐ Light:
  ☐ Significant damage  
  ☐ Some damage  
  ☐ None  
  ☐ Don't know

☐ Airborne particulates or pollutants:
  ☐ Significant damage  
  ☐ Some damage  
  ☐ None  
  ☐ Don't know

☐ Pests:
  ☐ Significant damage  
  ☐ Some damage  
  ☐ None  
  ☐ Don't know

☐ Improper storage or enclosure (e.g., bent, creased):
  ☐ Significant damage  
  ☐ Some damage  
  ☐ None  
  ☐ Don't know

Size of Staff**:

☐ # of Full-Time/Paid Employees: ______
☐ # of Part-Time/Paid Employees: ______
☐ # of Full-Time/Unpaid Employees: ______
☐ # of Part-Time/Unpaid Employees: ______

Institutional Budget (annual operating budget):

☐ Large - institutional budget more than $1,500,000  
☐ Medium - institutional budget $300,000-$1,500,000  
☐ Small - institutional budget less than $300,000

Size of Collection:

☐ # of Objects under your institution's care: ______

(survey continues on back)
Collections Environment & Storage

Please answer the following in terms of the use of environmental controls for the preservation of your collections:**

- Temperature:
  - In all areas
  - In some areas
  - In no areas
  - Don’t know

- Relative Humidity:
  - In all areas
  - In some areas
  - In no areas
  - Don’t know

- Light Levels:
  - In all areas
  - In some areas
  - In no areas
  - Don’t know

Do you consider your collection to be housed in an adequate storage facility (defined as large enough to accommodate current collections with safe access to them and appropriate storage equipment)?***

  - YES
  - NO

Does your institution have a need for the following storage improvements?**

- New/Additional On-site Storage:
  - No need
  - Need
  - Urgent Need
  - Don’t know

- New/Additional Off-site Storage:
  - No need
  - Need
  - Urgent Need
  - Don’t know

- Renovated Storage Space:
  - No need
  - Need
  - Urgent Need
  - Don’t know

- New/Improved Storage Furniture/Accessories:
  - No need
  - Need
  - Urgent Need
  - Don’t know

How often is your collections environment (both display and storage) inspected for pests?

- Daily
- Weekly
- Monthly
- 3–4 times per year
- Annually
- Less than once a year

Does your institution have an Integrated Pest Management (IPM) program?**

- Yes
- Yes, but it is not up-to-date
- No, but one is being developed
- No, but pest management is addressed in our overall, institutional long-range plan
- No
- Don’t know

Emergency Planning & Security

Does your institution have a written emergency/disaster plan that includes the collection?**

- Yes
- Yes, but it is not up-to-date
- No, but one is being developed
- No
- Don’t know

If so, is your staff trained to carry it out?**

- Yes
- No
- Don’t know

Does your institution have adequate security systems?**

- Yes
- No
- Don’t know

If no, which areas are not covered?

- Exhibition space(s)
- Vault(s)
- Preparator’s area(s)
- Shipping/receiving area(s)

Preventive Conservation/Preservation Staffing & Activities

Does your conservation/preservation program include any of the following types of activities?**

- Preventive Conservation (e.g., housekeeping, holdings maintenance, re-housing, environmental monitoring)
- Preservation Management (e.g., administration, planning, assessment)
- Conservation Treatment (e.g., repair, mass deacidification, specimen preparation)
- Continuing Education (in the fields of preventive conservation, preservation management and/or conservation treatment)

(survey continues on next page)
Our institution’s conservation/preservation program is:**

☐ Done by institution staff
☐ Dedicated paid staff
☐ Various staff as needed
☐ Volunteers
☐ Done by external provider
☐ Not currently done but planned
☐ Not done
☐ Not applicable

What is the average number of internal staff who perform preventive conservation/preservation activities:**

☐ None
☐ 1-2 Full-Time Employee
☐ 3-5 Full-Time Employees
☐ 6-10 Full-Time Employees
☐ 11 and up Full-Time Employees

Does your institution have a need for staff training in the fields of preventive conservation/preservation?***

☐ Yes
☐ Yes, urgent need
☐ No
☐ Don’t Know
☐ Not Applicable

Preventive Conservation/Preservation Expenditures & Funding

Does your institution have funds allocated for conservation/preservation in the Annual Budget (most recent fiscal year)?**

☐ Yes
☐ Not a specific line item but other budgeted funds are available
☐ No
☐ Don’t Know

What is your institution’s annual budget, if any, for Preventive Conservation/Preservation (most recently completed fiscal year)?**

☐ None
☐ Less than $3,000
☐ $3,001-$15,000
☐ $15,001-$50,000
☐ $50,001-$100,000
☐ More than $100,000

Has your institution applied for conservation/preservation funding (within the last three years)?***

☐ Yes
☐ No
☐ Don’t Know

Why has your institution not applied for conservation/preservation funding (within the last three years)?** (circle all that apply)

☐ Not aware of funding sources
☐ Lack of time/expertise
☐ Needed additional time to plan project(s)
☐ Conservation not a priority
☐ Have sufficient funding
☐ Have been unsuccessful previously
☐ Don’t Know
☐ Other:

Does your institution promote awareness of conservation/preservation?***

☐ Yes
☐ No
☐ Don’t Know

If yes, in what way?*** (circle all that apply)

☐ Educating donors/trustees
☐ Presentations to members/friends groups
☐ Feature at exhibitions
☐ Subject for dedication elements in exhibitions
☐ Providing sources of information for other institutions
☐ Funding opportunity for donors
☐ Feature on websites or in publications
☐ Other:

Continuing Education

How many years experience do you have in the museum field?

☐ In museum registration specifically:

What is your background?

Bachelor’s Degree (field/institution):

Master’s Degree (field/institution):

Doctorate (field/institution):

Apprenticeship/On the job training (length, location):

Other:

Do you carry any professional certifications?

(survey continues on back)
Are you a member of any professional organizations?
☐ American Association of Museums (AAM)
☐ Ohio Association of Museums (OAM)
☐ Internatinal Conservation Association (ICA)
☐ The Society for the Preservation of Natural History Collections (SPNHC)
☐ International Council on Museums (ICOM)
☐ International Centre for the Study of the Preservation & Restoration of Cultural Property (ICOROM)
☐ Association of Midwest Museums (AMM)
☐ American Association of State & Local History (AASLH)
☐ American Institute for Conservation of Historical & Artistic Works (AIC)
☐ The Association for Preservation Technology International (APT)
☐ Heritage Preservation
☐ Other: ____________________________

How frequently, throughout the calendar year, do you attend professional workshops, training seminars, or continuing education programs/activities?
☐ Once
☐ Twice
☐ 3-4 times per year
☐ More than four times a year
☐ Less than once per year
☐ Never

Does your institution provide funding for continuing education programs/workshops/training?
☐ Yes
☐ No
☐ Don't Know

Have you, or your institution, written grants specifically for continuing educational opportunities?
☐ Yes
☐ No
☐ Don't Know

Do you, or your institution, subscribe to any of the following magazines/publications? (please check all that apply)
☐ Museum and Society
☐ Conservation: The Getty Conservation Newsletter
☐ Collections: A Journal for Museum & Archives Professionals
☐ Heritage Management
☐ Common Ground: Preserving Our Nation's Heritage
☐ Cultural Resources Management: The Journal of Heritage Stewardship

Are you aware of any of the following private, state or federal resources?
☐ Save America's Treasures Grants
☐ National Center for Preservation, Technology and Training Grants
☐ National Endowment for the Humanities Grants
☐ Institute of Museum and Library Services Grants
☐ Foundation for the AIC (FAIC) Professional Development Scholarships or Carolyn Horton Grants

Have you previously attended any of the following workshops or participated in any of the following programs?
☐ Collections Management Assessment Program (CMAP) of AAM
☐ AASLH Online or Onsite Workshops
☐ AIC seminars, workshops and study tours
☐ Campbell Center for Historic Preservation Studies Courses
☐ ICA programs
☐ Northern States Conservation Center online museum classes

What other question(s) do you think should have been asked?
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Additional Comments:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

General Information

Check the type(s) that best describe your institution:

92.5% Museum (non-profit)
  0% Arboretum/Botanical Garden
  17.5% Art
  0% Aquarium
  17.5% Children’s/Youth
  2.5% General

45% Historic House/Historical Society
  23.8% History
  6.3% Natural History/Anthropology
  0% Nature Center
  5% Science
  0% Zoo
  0% Other:

8.8% Cultural Organization
  1.3% Civic/Exhibition Center
  0% Fair Building
  3.8% Library
  0% Religious Institution
  0% Other:

8.6% University
  2.5% Department
  0% Library
  6.3% Museum or Gallery
  0% Student Center/Union
  0% Other:

0% Other:

Governing Institution:

10% Academic Entity
2.5% Private College/University
  6.3% State College/University
0% County/Municipality University
  1.3% Other:

6.3% Corporate/For-Profit
2.5% County/Municipal
3.8% Federal
71.3% Nonprofit Org/Foundation
2.5% State
0% Tribal

Size of Staff (averages)
# of Full-Time/Paid Employees: 16.3
# of Part-Time/Paid Employees: 13.4
# of Full-Time/Unpaid Employees: 10.5
# of Part-Time/Unpaid Employees: 59.9

Institutional Budget (annual operating budget):
17% Large - institutional budget more than $1,500,000
19.7% Medium - institutional budget $300,000 - $1,500,000
63.2% Small - institutional budget less than $300,000

Size of Collection:
# of Objects under your institutions care: average – 397,630
Combined total of survey respondents- 31,810,406

Condition of Collections
Frequency of Inventory (# of years between):
1 year- 21.2% ; 2-3 years- 6.1% ; 4-5 years- 12.1% ; 5 or more- 0% ; 10 or more- 6.1% ; other- 53%

What determines the length of time between inventories (i.e.: volume, personnel, etc)?
Volume- 19.4% ; Personnel- 58.2% ; Time- 16.4% ; Funding- 1.5% ; Policy- 9% ; Other- 32.8%

Please indicate by estimated percentage how much of your overall collection fall into the following categories (overall condition of collection):** (averages)
Unknown Condition: 13.9%
No Need of Conservation/Preservation: 55.2%
In Need of Conversation/Preservation: 23.4%
In Urgent Need of Conservation/Preservation: 7%

Does your institution have a written, long-range plan for the care of collections:**
34% Yes
11.3% Yes, but it is not up-to-date
8.8% No, but one is being developed
21.3% No, but preservation is addressed in our overall, institutions long-range plan
22.5% No
2.5% Don’t Know

Has any damage to your collection been caused by the following environmental factors:**
Water:
1.4% Significant damage
35.6% Some damage
59% None
4.1% Don’t know

Light:
5.3% Significant damage
60% Some damage  
24% None  
10.7% Don’t know  

Airborne particulates or pollutants:  
0% Significant damage  
30.7% Some damage  
41% None  
28% Don’t know  

Pests:  
0% Significant damage  
35.3% Some damage  
57.9% None  
6.6% Don’t know  

Improper storage or enclosure (e.g., bent, creased)  
4% Significant damage  
61.3% Some damage  
28% None  
6.7% Don’t know  

Collections Environment & Storage  
Please answer the following in terms of the use of environmental controls for the preservation of your collections:**  
Temperature:  
45.6% In all areas  
39.2% In some areas  
13.9% In no areas  
1.3% Don’t know  
Relative Humidity:  
29.5% In all areas  
48.7% In some areas  
21.8% In no areas  
0% Don’t know  
Light Levels:  
39.7% In all areas  
51.3% In some areas  
9% In no areas  
0% Don’t know  

Do you consider your collection to be housed in an adequate storage facility (defined as large enough to accommodate current collections with safe access to them and appropriate storage equipment)?**  
44.3% YES  
55.7% NO  

Does your institution have a need for the following storage improvements?**  
New/Additional On-site Storage:  
15.4% No need  
57.7% Need  
26.9% Urgent Need  
0% Don’t know  

New/Additional Off-site Storage:  
66.7% No need  
27.8% Need
<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renovated Storage Space:</td>
<td>No need</td>
<td>34.6%</td>
</tr>
<tr>
<td></td>
<td>Need</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>Urgent Need</td>
<td>14.1%</td>
</tr>
<tr>
<td></td>
<td>Don’t know</td>
<td>1.3%</td>
</tr>
<tr>
<td>New/Improved Storage Furniture/Accessories:</td>
<td>No need</td>
<td>18.4%</td>
</tr>
<tr>
<td></td>
<td>Need</td>
<td>64.5%</td>
</tr>
<tr>
<td></td>
<td>Urgent Need</td>
<td>15.8%</td>
</tr>
<tr>
<td></td>
<td>Don’t know</td>
<td>1.3%</td>
</tr>
<tr>
<td>How often is your collections environment inspected for pests?</td>
<td>Daily</td>
<td>7.6%</td>
</tr>
<tr>
<td></td>
<td>Weekly</td>
<td>17.7%</td>
</tr>
<tr>
<td></td>
<td>Monthly</td>
<td>32.9%</td>
</tr>
<tr>
<td></td>
<td>3-4 times per year</td>
<td>10.1%</td>
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<tr>
<td></td>
<td>Annually</td>
<td>16.5%</td>
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<tr>
<td></td>
<td>Less than once a year</td>
<td>15.2%</td>
</tr>
<tr>
<td>Does your institution have an Integrated Pest Management (IPM) program?</td>
<td>Yes</td>
<td>31.3%</td>
</tr>
<tr>
<td></td>
<td>Yes, but it is not up-to-date</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>No, but one is being developed</td>
<td>1.3%</td>
</tr>
<tr>
<td></td>
<td>No, but pest management is addressed in our overall, institutional long-range plan</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>47.5%</td>
</tr>
<tr>
<td></td>
<td>Don’t Know</td>
<td>5%</td>
</tr>
<tr>
<td>Emergency Planning &amp; Security</td>
<td>Yes</td>
<td>32.5%</td>
</tr>
<tr>
<td>Does your institution have a written emergency/disaster plan that includes the collection?**</td>
<td>Yes, but it is not up-to-date</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>No, but one is being developed</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>36.3%</td>
</tr>
<tr>
<td></td>
<td>Don’t know</td>
<td>5%</td>
</tr>
<tr>
<td>If so, is your staff trained to carry it out?**</td>
<td>Yes</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>52%</td>
</tr>
<tr>
<td></td>
<td>Don’t know</td>
<td>10%</td>
</tr>
<tr>
<td>Does your institution have adequate security systems?**</td>
<td>Yes</td>
<td>78.8%</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>17.5%</td>
</tr>
<tr>
<td></td>
<td>Don’t know</td>
<td>3.8%</td>
</tr>
<tr>
<td>If no, which areas are not covered?</td>
<td>Exhibition space(s)</td>
<td>76.9%</td>
</tr>
<tr>
<td></td>
<td>Vault(s)</td>
<td>38.5%</td>
</tr>
<tr>
<td></td>
<td>Preparator’s area(s)</td>
<td>46.2%</td>
</tr>
</tbody>
</table>
30.8% Shipping/receiving area(s)

**Preventive Conservation/Preservation Staffing & Activities**
Does your conservation/preservation program include any of the following types of activities:**
78.8% Preventive Conservation (e.g., housekeeping, holdings maintenance, re-housing, environmental monitoring)
47.5% Preservation Management (e.g., administration, planning, assessment)
40% Conservation Treatment (e.g., repair, mass deacidification, specimen preparation)
37.5% Continuing Education (in the fields of preventive conservation, preservation management and/or conservation treatment)

**Our institution’s conservation/preservation program is:**
48.7% Done by institution staff
7.9% Dedicated paid staff
14.5% Various staff as needed
36.8% Volunteers
25% Done by external provider
4% Not currently done but planned
0% Not done
4% Not applicable

What is the average number of internal staff who perform preventive conservation/preservation activities:** (averages)
29 None
61.1 1-2 Full-Time Employee
6.9 3-5 Full-Time Employees
2.8 6-10 Full-Time Employees
0% 11 and up Full-Time Employees

Does your institution have a need for staff training in the fields of preventive conservation/preservation?**
63.2% Yes
2.6% Yes, urgent need
28% No
2.6% Don’t Know
2.6% Not Applicable

**Preventive Conservation/Preservation Expenditures & Funding**
Does your institution have funds allocated for conservation/preservation in the Annual Budget (most recent fiscal year)?**
44.2% Yes
24.7% Not a specific line item but other budgeted funds are available
29.9% No
1.3% Don’t Know

What is your institution’s annual budget, if any, for Preventive Conservation/Preservation (most recently completed fiscal year)?**
26% None
37.7% Less than $3,000
15.6%  $3,001-$15,000
10.4%  $15,001-$50,000
2.6%  $50,001-$100,000
2.6%  More than $100,000

Has your institution applied for conservation/preservation funding (within the last three years)?**
32.9%  Yes
60.5%  No
6.6%  Don’t Know

Why has your institution not applied for conservation/preservation funding (within the last three years)?** (circle all that apply)
33.3%  Not aware of funding sources
47.1%  Lack of time/expertise
39.2%  Needed additional time to plan project(s)
11.8%  Conservation not a priority
5.9%  Have sufficient funding
2%  Have been unsuccessful previously
9.8%  Don’t Know
13.7%  Other

Does your institution promote awareness of conservation/preservation?**
73%  Yes
24.3%  No
2.7%  Don’t Know

If yes, in what way?** (circle all that apply)
78.2%  Educating donors/trustees
56.3%  Presentations to members/friends groups
29.1%  Feature as exhibition
12.7%  Subject for didactic elements in exhibition
27.3%  Providing sources of information for other institutions
29.1%  Funding opportunity for donors
25.5%  Feature on website or in publications
14.6%  Other

Continuing Education
How many years experience do you have in the museum field?  14.5 years (average)
In museum registration specifically?  5 years (average)

What is your background?
Bachelor’s Degree (field/institution): 63.8%
Master’s Degree (field/institution): 55%
Doctorate (field/institution): 7.5%
Apprenticeship/On the job training (length, location): 26.3%

Are you a member of any professional organizations?
48.8%  American Association of Museums (AAM)
52.5%  Ohio Association of Museums (OAM)
16.3%  Intermuseum Conservation Association (ICA)
3.8%  The Society for the Preservation of Natural History Collections (SPNHC)
2.5% International Council on Museums (ICOM)
0% International Centre for the Study of the Preservation & Restoration of Cultural Property (ICCROM)
18.8% Association of Midwest Museums (AMM)
31.3% American Association of State & Local History (AASLH)
5% American Institute for Conservation of Historical & Artistic Works (AIC)
1.3% The Association for Preservation Technology International (APT)
6.3% Heritage Preservation
Other: 17.5% Ohio Association of Historical Societies & Museums (OAHSM); 5% Northeastern Ohio Inter-Museum Council

How frequently, throughout the calendar year, do you attend professional workshops, training seminars, or continuing education programs/activities?
29.5% Once
19.2% Twice
15.4% 3-4 times per year
3.9% More than four times a year
19.2% Less than once per year
12.8% Never

Does your institution provide funding for continuing education programs/workshops/training?
72.5% Yes
26.3% No
1.3% Don’t Know

Have you, or your institution, written grants specifically for continuing educational opportunities?
19.2% Yes
70.5% No
10.3% Don’t Know

Do you, or your institution, subscribe to any of the following magazines/publications? (please check all that apply)
2.5% Museum and Society
8.8% Conservation: The Getty Conservation Newsletter
10% Collections: A Journal for Museum & Archives Professionals
0% Heritage Management

11.3% Common Ground: Preserving Our Nation’s Heritage
8.8% Cultural Resources Management: The Journal of Heritage Stewardship

Are you aware of any of the following private, state or federal resources?
47.5% Save America’s Treasures Grants
18.8% National Center for Preservation, Technology and Training Grants
62.5% National Endowment for the Humanities Grants
60% Institute of Museum and Library Services Grants
10% Foundation for the AIC (FAIC) Professional Development Scholarships or Carolyn Horton
Grants

Have you previously attended any of the following workshops or participated in any of the following programs?

23.8% Collections Management Assessment Program (CMAP) of AAM
8.8% AASLH Online or Onsite Workshops
3.8% AIC seminars, workshops and study tours
7.8% Campbell Center for Historic Preservation Studies Courses
15% ICA programs
0% Northern States Conservation Center online museum classes

APPENDIX D

IRB PERMISSION LETTER

November 26, 2007

Tracy Ann Graham
1135 Noble Ave.
Barberton, Ohio 44203

Ms. Graham:

Your request for exemption for the protocol entitled "Master's Thesis: Building the Argument for Preventative Conservation and Continuing Education as Necessary Components of Collections Management" was approved on November 21, 2007. The IRB application number assigned to this project is 20071123. The protocol represents minimal risk to subjects and matches the following Federal category for exemption:

☐ Exemption 1 - Research conducted in established or commonly accepted educational settings, involving normal educational practices.

☐ Exemption 2 - Research involving the use of educational tests, survey procedures, interview procedures, or observation of public behavior.

☐ Exemption 3 - Research involving the use of educational tests, survey procedures, interview procedures, or observation of public behavior not exempt under category 2, but subjects are elected or appointed public officials or candidates for public office.

☐ Exemption 4 - Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens.

☐ Exemption 5 - Research and demonstration projects conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine public programs or benefits.

☐ Exemption 6 - Taste and food quality evaluation and consumer acceptance studies.

Annual continuation applications are not required for exempt projects. If you make changes to the study's design or procedures that increase the risk to subjects or include activities that do not fall within the approved exemption category, please contact the IRB to discuss whether or not a new application must be submitted. Any such changes or modifications must be reviewed and approved by the IRB prior to implementation.

Please retain this letter for your files. If the research is being conducted for a master's thesis or doctoral dissertation, the student must file a copy of this letter with the thesis or dissertation.

Sincerely,

Sharon McWhorter
Associate Director

Office of Research Services and Sponsored Programs
Akron, OH 44325-0092
330-972-7668 • 330-972-6281 Fax

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☑ Approved consent form attached