

NC ECHO Dublin Core Implementation Guidelines

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North Carolina ECHO, Exploring Cultural Heritage Online, is an evolving statewide, collaborative access to special collections and digitization project. Funded through a Library Services and Technology Act (LSTA) Grant and managed by the State Library of North Carolina, this innovative project was one of the first in the nation to build a statewide framework for digitization and address a full-range of digitization needs of the state's cultural collecting agencies (libraries, archives, and museums).

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Introduction

The NC ECHO Dublin Core Implementation Guidelines seek to assist North Carolina institutions in creating practical and useful in-house rules for constructing Dublin Core metadata records. NC ECHO has adopted Dublin Core because it adequately describes resources found in the library, archival, museum, and other cultural heritage institutions that form the collective NC ECHO community. The standard is open and amenable to involving all of these communities, without excluding groups of users. These guidelines and best practices are based upon the Dublin Core Metadata Initiative's discourse on the Dublin Core metadata standard. These guidelines are designed to be helpful to institutions as they are creating Dublin Core applications; however, they are not meant to give an institution a direct interpretation of their digital materials. Rather, these guidelines provide an easy Dublin Core framework for institutions to apply to their specific uses. The guidelines are necessarily broad to allow application across a variety of types of institutions that will use them – libraries, archives, museums, historic sites, etc.

Dublin Core represents the lowest common denominator for creating metadata to facilitate maximum accessibility of resources across a broad spectrum of institution types. Format-specific metadata standards exist that may be more appropriate for an institution's digital material. Institutions are encouraged to use other metadata systems as appropriate. Crosswalking (mapping from one metadata system to another) helps to provide multiple metadata expressions for digital objects. However, it is recommended that in envisioning a crosswalking system, Dublin Core be generated from the more specific standard rather than mapping the other way. This is a logical way to proceed as Dublin Core is more general than most other standards. These other standards either have established or have in-process interpretations for North Carolina, and the crosswalks are embedded in all standards produced.

Purpose and Scope

These best practices offer assistance in creating metadata records for digitized resources, including those that are born digital as well as those that are reformatted from existing physical resources (photographs, text, audio, video, three-dimensional artifacts, etc). Creators of these metadata records may include catalogers, curators, archivists, librarians, web site developers, database administrators, volunteers, and other persons working in cultural heritage institutions. Application of these best practices in the creation of metadata records will result in standardized records that:

- enhance online search and retrieval accuracy in a shared search environment (NC ECHO), as well as local search solutions;
- improve resource discovery capabilities;
- improve quality control of metadata records;
- facilitate inter-institutional interoperability.

This document uses the Dublin Core element set as defined by the Dublin Core Metadata Initiative (DCMI), <http://www.dublincore.org/>.

Because it addresses a diverse audience of cultural heritage institutions comprised of museums, libraries, historical societies, archives, etc., this document seeks to accommodate different backgrounds and metadata skill levels by explaining terms and concepts as needed and by providing examples describing diverse resources. Terminology can often be confusing in creating these kinds of guidelines, so where possible terms have been defined, and a supplementary glossary is included. In addition, a great deal of literature regarding the Dublin Core metadata standard has been generated, and a Resources section provides a list of some of the most

important documents for further information. While this listing is by no means comprehensive, it will give those interested a starting point into the rich area of research and discussion in the field of information science.

NCDC is a working group constituted at each new edition of the *NCDC Implementation Guidelines* that oversees the establishment of Dublin Core standards for the NC ECHO project. The working group consists of metadata specialists from throughout North Carolina's cultural heritage institutions and is facilitated by the NC ECHO Metadata Coordinator. It is the aim of the group to provide a broad interpretation of the Dublin Core standard and to devise best practices for implementation in North Carolina. This interpretation is intended to be flexible enough for the wide variety of uses that Dublin Core has but provide enough guidance to ensure that quality metadata is created by institutions using the standard. For more information about the working group structure, please see <http://www.ncecho.org/ncdc/ncdcworkinggroup.htm>.

What is Metadata?

Metadata is informally defined as "information about information" or any data associated with a resource that describes that particular resource. A more general definition that is useful for us is "structured information about any information resource of any media type or format."¹ In this context, an information object is anything that can be addressed and manipulated by a human or a system as a discrete entity. The essential aspect of the metadata system, then, is the structured format for that information. Metadata itself is essentially a modern term for the bibliographic information that libraries traditionally entered into their catalogs or registry information on collections that museums have entered into their systems; however, the term *metadata* is most commonly used to refer to descriptive information about World Wide Web resources.

The creation of metadata for digital resources is an important part of a digitization project, and must be incorporated into a project's workflow. Metadata should be created and associated with the digital resource to support the discovery, use, management, reusability, and sustainability of the resources. Metadata is most often divided into three conceptual types (with some overlap among the three):

Descriptive metadata: information used for the indexing, discovery, and identification of a digital resource. Descriptive metadata includes information about subject and context of the resource being described. Referred to as "analytical metadata," this description requires analysis of the resource being described. Analytical metadata terms can include personal and family names, corporate bodies, topical terms, geographical places, temporal periods, genre formats, etc.

Structural metadata: information used to display and navigate digital resources; also includes information on the internal organization of the digital resource. Structural metadata might include information such as the structural divisions of a resource (i.e., chapters in a book) or sub-object relationships (such as individual diary entries in a diary section).

Administrative metadata: information needed for the management of the digital object, which includes information regarding access and display and rights management. Administrative metadata also includes information on the creation of the digital object in order to ensure long-term sustainability. This is called *preservation metadata*. Fields include

¹ Pricilla Caplan, *Metadata Fundamentals for All Librarians*, (Chicago: American Library Association, 2003), p. 3.

the resolution at which the images were scanned, the hardware/software used to produce the object, compression information, pixel dimensions, etc. For more information about NC ECHO's preservation metadata standards, see **Preservation Metadata for Digital Objects** (<http://www.ncecho.org/presmet/index.htm>).

Recognizing that today's users are accessing digital resources from their home, work, school, etc., at any time of the day, and often without the assistance of a librarian, archivist, curator, museum educator, or other cultural heritage professional, metadata needs to provide information that:

- certifies the authenticity and degree of completeness of the content;
- establishes and documents the context of the content;
- identifies and exploits the structural relationships that exist between and within information objects;
- provides a range of intellectual access points for an increasingly diverse range of users;
- provides some of the data that an information professional might have provided in a physical reference or research setting.

What is Dublin Core and why use it?

The Dublin Core metadata standard is a set of elements used to describe a variety of networked resources. The semantics of these elements have been established through consensus by an international, cross-disciplinary group of professionals from the library, museum, publishing, computer science, and text encoding communities, as well as from other related fields of scholarship. The Dublin Core Metadata Initiative (DCMI) Element Set has been approved by the American National Standards Institute (ANSI) and assigned the number Z39.85.

The Dublin Core metadata standard embodies the following characteristics:

- *Simplicity of creation and maintenance*
The intention of the Dublin Core element set is to remain as simple and accessible as possible in order to allow a non-specialist to create descriptive records for online resources both easily and efficiently, while providing for optimum retrieval of those resources in an online environment.
- *Commonly understood terminology*
Dublin Core was developed with the "non-specialist searcher" in mind. By supporting a common set of elements, the semantics of which can be universally understood and supported, resource discovery across different descriptive practices from one field of knowledge to another will increase. By using terminology that is generic yet applicable to a variety of disciplines, the visibility and accessibility of resources across these disciplines is enhanced.
- *International in scope*
The involvement of representatives from almost every continent in establishing Dublin Core specifications ensures that the standard will address the multicultural and multilingual nature of networked resources.
- *Extensibility*
Although the Dublin Core element set was developed with simplicity in mind, the need for precise retrieval of resources has also been recognized. As the standard develops, the Dublin Core element set could serve as the core descriptive

information that will be usable across the Internet, while also allowing other, additional elements to be added that make sense within a specific discipline. These additional element sets can be linked with Dublin Core to meet the need for extensibility, to aid in additional resource discovery, and to accommodate the precision and granularity needed for access.

NC ECHO has adopted Dublin Core because it adequately describes resources found in the library, archival, museum, and other cultural heritage institutions that form the collective NC ECHO community. The standard is open and amenable to involving all of these communities, without excluding groups of users. Other metadata standards, such as MARC, have historically been difficult to adopt by non-library communities, such as museums or historical societies for their non-library collections. While more robust metadata standards exist and are encouraged by NC ECHO, Dublin Core provides a minimum standard that is internationally accepted. It provides a framework for metadata expression and includes the minimum amount of information that should be included. Dublin Core is relatively simple to learn and easy to use for those institutions that might not have a professional cataloger on staff, and its elements cover the most essential information about a resource. These implementation guidelines focus on defining Dublin Core fields (content) and provides examples using HTML <meta> elements (syntax). The Dublin Core standard is independent of syntax, though, and these implementation guidelines can be used to construct data in a variety of different systems. For assistance on applying these implementation guidelines in a local system, please contact the NC ECHO Metadata Coordinator (kwisser@unc.edu).

Overview of Dublin Core Elements and Metadata Types

Metadata Type	Element	Metadata Type	Element
Descriptive/Analytical	Title	Structural	Source
	Creator		Relation
	Subject	Administrative	Publisher
	Description		Date
	Publisher		Format
	Contributor		Identifier
	Date		Source
	Type		Language
	Format		Rights
	Identifier		Publisher
	Source		Date
	Language		
	Relation		
	Coverage		

Interoperability: "Shareable" metadata

Traditionally, as cultural heritage institutions automated collections information, each sector developed unique practices, procedures, and semantics for describing their objects. Interoperability is a set of hardware, software, policies, and procedures that allows for the exchange and re-use of information across a collaborative network. This network aims to encompass the entire state through the broad cultural heritage framework using a variety of technical initiatives. In order to share data effectively, institutions need to be aware of the impact that semantic choices create (particularly for describing similar concepts, such as "author" or "creator." In addition, accurate syntactic information enables computer operations to work effectively in the computer environment. By adopting a common set of best practices, controlled vocabularies, and input tools, and by participating in interoperable networks, institutions can increase their visibility and provide opportunities to create new connections with other cultural

heritage institutions. These efforts better serve the needs of constituent communities and have the potential to create new user communities.

Controlled Vocabularies

For many fields in the NCDC implementation, best practice is to select terms from controlled vocabularies, thesauri, and subject heading lists for completion of the subject elements, rather than just using keywords. Employing terminology from controlled vocabularies ensures consistency and can improve the quality of search results, while reducing the likelihood of spelling errors when inputting metadata records. It also allows metadata from multiple institutions to be pulled together and provide meaningful results. Recognizing the diverse nature of the statewide initiatives and the involvement of a broad range of cultural heritage institutions, controlled vocabularies have been expanded to include subject discipline taxonomies and thesauri. Several states are developing geographic-based lists of terms that can be helpful in achieving a level of consistency in terminology. Many thesauri, subject heading lists, and taxonomies are currently available via the web and online links are provided wherever possible. As well, there are several standards for expressing information, such as date (these are referred to as data value standards). These data value standards are also used throughout these guidelines and links are provided to promote better understanding of the variety of different standards that comprise quality metadata generation.

Crosswalks

Crosswalks involve the mapping of the elements of one metadata standard to the corresponding elements fields of another metadata standard. A fully specific crosswalk contains a semantic mapping as well as a conversion specification. Crosswalks provide the ability to create and maintain a set of metadata and to map that metadata into any number of related content metadata standards. In order to build successful crosswalks and mapping schemes, it is important to maintain consistency across metadata standards. NC ECHO is striving to construct such consistent applications to assist in the crosswalk process using metadata best practice guidelines created for the variety of metadata standards being implemented throughout the state. In addition, NC ECHO seeks to promote the creation of metadata that will be consistent with national standards and interpretations.

General Input Guidelines

The best practice is to follow the general grammatical rules of the language involved when entering descriptive information about resources. In addition, it may be useful to consult the *Anglo-American Cataloging Rules, 2nd Edition* or *Describing Archives: a Content Standard* for more information and details on general rules and guidelines for data entry. Dublin Core metadata also involves syntax that makes it easier for the computer to understand the metadata information. Separating content and input is important in understanding the relationship between metadata and traditional modes of description. These guidelines include information about content and about an input structure for Dublin Core in HTML. Below are a few general input guidelines. After that, there is a discussion on the HTML input structure which may be used.

Punctuation

Avoid complicated punctuation in describing your resource. Use consistent English punctuation rules. In transcribing information from the resource itself, follow the punctuation present in the resource.

Abbreviations

In general, the following abbreviations are allowed: common or accepted abbreviations (such as "St." for "Saint"); designations of function (such as "ed." for "Editor"); terms used with dates (such as "b." for "born" or "fl." for "flourished"); and distinguishing terms added to names of persons, if they are abbreviated on the item (such as "Mrs."). These are particularly important when part of a controlled vocabulary. We suggest, however, that abbreviations not be used if they would make the record unclear. In most instances, though, spell out words rather than using abbreviations. For example, use "circa" rather than ca. This general rule provides greater interoperability of metadata and increased potential for understanding by users. Abbreviations assume a familiarity with the language that the World Wide Web has largely dismantled.

Capitalization

In general, capitalize the first word (of a title, for example) and proper nouns (place, personal, and organization names) as capitalization is used in the English language. If a resource is in another language, follow the capitalization rules for the language of the resource (i.e., capitalizing all nouns in German). Capitalize content in the description element according to normal rules of English language writing. For all other elements, enter content in lower case except for acronyms, which should be entered in capital letters.

Initial Articles

Omit initial articles at the beginning of the title, such as: the, a, an, le, la, los, el, der, die, das, etc.

Keywords versus Subject Terms

Best practice recommends that subject terms be taken from a controlled vocabulary whenever possible for more accurate retrieval and collocation of resources. However, other non-controlled terms or keywords that identify the resource with some precision can be added to a record to enhance resource retrieval and discovery, especially in cases where such terms are too new to be included in controlled vocabularies. The Description field provides a free-text arena in which to include keywords that will enhance retrieval.

Authorities

Personal names, corporate names, and geographic names should follow the controlled vocabulary of the Library of Congress Name Authority File (<http://authorities.loc.gov/>) or other controlled vocabularies for authorized form of names. While not all names are available in these resources, the *Anglo-American Cataloging Rules 2nd Edition* (AACR2) or *Describing Archives: a Content Standard* (DACS) provide guidelines to establish the authoritative form of names that may be associated with any resource.

In entering this information, personal names should be entered as last name first, separated by a comma, then first name, then middle name or initial. If birth and death dates are known, enter them following the last name element. Separate these dates with a hyphen.

For corporate names, enter the highest level of hierarchy and any middle stages of the hierarchy necessary to understand the role of the subdivision. Separate these stages with a period (full stop). Other stages in the hierarchy may be eliminated if they are not essential for distinguishing the function of the group being described. Corporate body names can be very complex to establish. Chapter 23 of AACR2 provides guidance on the varieties of corporate bodies that can be encountered and solutions for establishing authorized forms of names.

Mandatory elements

The NC ECHO application guidelines specify 11 mandatory elements. These are considered essential in the description of any resource and are critical in supporting an interoperable environment. Some of these elements are mandatory only if applicable. For instance, language is required only if a language is represented. For a three-dimensional artifact, language may not be applicable. A chair does not have language information associated with it unless there is text of some sort on the chair. The same would be true for a photograph of an object or a non-textual image.

Mandatory Elements	Recommended/Optional Elements
Title	Contributor
Creator (if available)	Type
Subject	Coverage.Spatial
Description	Coverage.Temporal
Publisher	Relation
Date	Format.Extent (Digital)
Format.Extent (Original)	Format.Medium (Digital and Original)
Identifier	
Language (if applicable)	
Rights	
Source (if applicable)	

Guidelines for the application of each element appear below.

Qualifiers

The basic elements available in the Dublin Core metadata set are intended to cover most of the information needed to give an adequate description of the digital resource. However, there is often a need to be more specific about a resource than is possible using the basic element set. To help remedy this situation, the NC ECHO Dublin Core application is a “qualified” Dublin Core that consists of the elements and also their official qualifiers. These qualifiers are defined as refinements or schemes. Specific refinements and schemes are discussed within the individual element sections of the guidelines.

Refinements

Qualifiers defined as refinements serve to refine or specify the meaning of the content of an element.

Schemes

Qualifiers defined as schemes define rules for constructing a term, date or other type of data in accordance with a controlled list of terms or a specific format of representing a type of data (e.g., dates). Values for schemes are represented through a coding system used in the description of resource. The purpose of the scheme qualifier is to introduce a degree of consistency and standardization into the Dublin Core record and to communicate the standards or controlled vocabularies used in constructing the content of a given element.

HTML Syntax for Dublin Core

These guidelines primarily focus on the implementation of Dublin Core in a World Wide Web environment, although Dublin Core may be effectively applied in other environments. In fact, these implementation guidelines can guide the creation of information in various collection management systems such as CONTENTdm, PastPerfect, Re:discovery, and so on. While the examples included in the guidelines are expressed in HTML <meta> elements, it should not be assumed that the guidelines only apply to HTML.

Below are procedures for the syntactic expression of Dublin Core in the HTML 4.0 standard. The correct syntactic expression is important for the harvesting of metadata information both locally and consortially, but the syntactic requirements of Dublin Core are not complex.

Here is the way a Dublin Core element is written in HTML:

```
<meta name="DC.[Dublin Core element].[Dublin Core refinement]" scheme="[scheme code]" content="[textual content of the element]">
```

The <meta> tag is used for all Dublin Core elements. All of the information relating to each DC element goes within the <meta> tag.

name refers to the name of the element. This can include just an element's name or an element's name with a refinement. The element name and refinement are separated by a period (full stop). The DC preceding the element name indicates that a Dublin Core element is being used; prefacing all **name** values with DC is required.

Examples of values:

```
DC.Title  
DC.Title.Alternative  
DC.Creator  
DC.Coverage.Spatial
```

scheme refers to the scheme used in formulating the content of the element. Codes are used to identify the schemes. Examples of this are lcsch (Library of Congress Subject Headings) and lcnaf (Library of Congress Name Authority File). Scheme codes are listed in appropriate elements. If no controlled vocabulary or data value standard is in use, the **scheme** can be left out entirely. It should not be entered with an empty value.

Examples of values:

```
iso8601  
lcsch  
lcnaf
```

content refers to the textual content of the element. This may include alphanumeric expressions or uniform resource locators (URLs) to indicate where the metadata is located. Directions on the construction of content are included in the Input Guidelines for each element below.

Syntax requires an equal sign (=) between the attribute (**name**, **scheme**, or **content**) and the value. The Value is always represented in quotation marks. All of the DC <meta> tags are located in the <head> section of the HTML document:

```
<html>
<head>
<title>[title]</title>
<meta name="DC.Title" content="NC ECHO Dublin Core Implementation Guidelines">
<meta name="DC.Creator" scheme="lcnaf" content="Wisser, Katherine M.">
<meta name="DC.Language" scheme="iso639-2b" content="eng">
... [other meta tags] ...
</head>
<body>
[body of the html document]
</body>
</html>
```

Dublin Core Metadata Element Set

Each element is described in detail below, including its mandatory status and whether or not it can be repeated. The Dublin Core standard as promoted by the Dublin Core Metadata Initiative (DCMI, <http://www.dublincore.org/>) does not specify required elements and labels every field as repeatable. In an effort to promote quality metadata creation, however, the NCDC working group considered how essential each of the DC elements is and if the ability to repeat a given field is important. The result is that, in the NC ECHO Implementation of Dublin Core, certain fields have been identified as required and/or repeatable.

Following the description of each element, available refinements and schemes (with corresponding codes) are listed. Finally, input guidelines are detailed for creating the content of the particular element. These guidelines are a work in progress, and input from a variety of institutions as to how they are meeting or not meeting individual institution's needs are requested.

If an institution is using a particular scheme, NC ECHO would like to present that scheme with these guidelines so that other institutions can consider it for use. Institutions willing to share their scheme implementations should forward the schemes and a description of how they are used to NC ECHO for inclusion in these guidelines. Please contact the NC ECHO Metadata Coordinator (kwisser@unc.edu) with suggested additions to the **scheme** lists.

These input guidelines are meant to be helpful rather than confusing; therefore, if there is any point at which there is confusion in the application of a particular element, please contact the NC ECHO Metadata Coordinator immediately. This will result not only in better metadata application in your institution, but more clearly written guidelines and overall improved metadata creation.

In many cases, we have relied upon well-established content guidelines from the library cataloging community as represented by the *Anglo-American Cataloging Rules, 2nd Edition* (AACR2) or archival description standards as represented by *Describing Archives: A Content Standard* (DACS). Museum metadata content (as represented by the related document *NC ECHO Museum Core*) are based upon the new content standard *Cataloging Cultural Objects* (CCO). A crosswalk to NCDC elements is included in those guidelines. If there are content guidelines currently in use in a particular institution, please convey that information to the NC ECHO Metadata Coordinator. As new content guidelines are formulated or received from institutions, they will be incorporated into these Dublin Core Implementation Guidelines.

Complete record examples appear at the end of the element guidelines. These examples come from cultural institutions in North Carolina and are illustrative of the principles covered in the individual element structures. It should be noted that all examples include the required fields, but optional fields are only included where appropriate.

An ancillary document has been created (<http://www.ncecho.org/ncdc/COCEancillarystandard.htm>) for the description on digital projects at the project level. Included is element-specific guidelines and an example of that description for a digital project.

Title

Element: Title

Mandatory: Yes

Repeatable: Yes

(only with the Refinement, see below)

Description: Name or label given to the resource by the creator or publisher; may also be identifying phrase or name of the resource supplied by the holding institution.

DACS provides a useful distinction between formal and supplied titles that will help in filling out this information. In DACS a Formal Title is defined as a title “that appears prominently on or in the materials being described” whereas a supplied title is provided by the metadata creator when there is no formal title. (DACS, 2.3, p. 17). In many cases, the metadata creator will be supplying the title using a brief identifying phrase or name of the resource.

Refinements: Title.Alternative

Schemes: none

Input Guidelines:

- 1) Transcribe the title if one is available from the physical copy of the resource or enter the title given by the holding institution.
 - Omit initial articles from the title.
 - Capitalize only the first letter of the title and proper nouns contained within the title.
 - In general, use the punctuation provided with the title or, if the title is created by the holding institution, use English language punctuation standards.
- 2) If no title appears on the item being described, create a brief identifying phrase that can serve as a title. This can include description, object name, creator name in combination to provide identification of the item and distinction for other similar items. Do not, however, be concerned with creating a *unique* title for the item.
- 3) The Title element is repeatable only with the refinement “Alternative.” The Title element should be used only once, and all other title information should be expressed as Title.Alternative. Title.Alternative can be used for other titles useful for access, i.e., caption title, former title, spine title, artist’s title, object name, translation of title, and other variations of the title.

Creator

Element: Creator

Mandatory: Yes (if available)

Repeatable: Yes

Description: Entity or entities primarily responsible for creating the intellectual content of the resource, including individuals, families, and corporate bodies. Examples include authors of written documents, artists, illustrators, photographers, collectors, organizations, etc. For archival collections, the creator is the entity that is responsible for the collection's existence. This can include authorship but also focuses on the reason that the collection is brought together.

Refinements: none

Schemes: Library of Congress Name Authority File (lcnaf)

Input Guidelines:

- 1) Enter the individual(s), family(ies), or corporate body(ies) primarily responsible for the creation of the resource, using the authoritative form of the name. Use national standards, such as Library of Congress Name Authority File (<http://authorities.loc.gov>) to find the authoritative form.
- 2) For more than one Creator, use separate Creator elements.
- 3) If an authoritative form of the name does not exist, create one based upon the AACR2, chapters 22 (personal names), 23 and 24 (corporate headings) or DACS chapters 12 (personal names), 13 and 14 (corporate headings). Rules for creating family names can be found in DACS Chapter 12 (12.29). These chapters will give you guidelines on the basic structure of authority formats and help you make decisions on how to write a name.
 - Enter personal names in inverted form: Last name, First name, Middle name or initial. If known, use birth, death, or flourished dates.
 - For corporate names, use shortened hierarchy when possible to uniquely identify the body in question. For state laws and other kinds of resources use the jurisdiction as a corporate body. For questions about entering a corporate body directly or indirectly (expressing subordination to another corporate body), please see AACR2, chapter 23.
 - For family names, use the family surname followed by the word "family." (DACS, 12.29.1)
- 4) Use the **Contributor** element to record people or corporate bodies who perform a secondary, rather than primary, role the creation of the intellectual content of the work (see below for more information).

Subject

Element: Subject

Mandatory: Yes

Repeatable: Yes

Description: The topic of the content of the resource reflecting what the resource is about or what it is. Subjects can be expressed by topical, personal, family, or corporate body terms for significant people, places, organizations, events, and topics reflected. For geographic or temporal topics, see the element **Coverage**.

Refinements: none

Schemes: REQUIRED: Use codes to indicate from which controlled vocabulary the term was derived.

Controlled Vocabularies List Including Code Scheme

Code	Name of Controlled Vocabulary
aat	Art and Architecture Thesaurus http://www.getty.edu/research/tools/vocabulary/aat/
gmgpc	Thesaurus for Graphic Materials: TGM II Genre and Physical Characteristic Terms http://lcweb.loc.gov/rr/print/tgm2/
lcnaf	Library of Congress Name Authorities File http://authorities.loc.gov
lcsb	Library of Congress Subject Headings
lctgm	Thesaurus for Graphic Materials: TGM I Subject Terms http://lcweb.loc.gov/rr/print/tgm1/
local	Locally controlled list of terms*
mesh	Medical Subject Headings http://www.nlm.nih.gov/mesh/meshhome.html
mim	Moving Image Materials: Genre Terms
Ncg	North Carolina Gazetteer
nimacsc	NIMA Cartographic Subject Categories
nmc	Revised Nomenclature for Museum Cataloging: a revised and expanded version of Robert C. Chenhall's system for classifying man-made objects.
rbbin	Binding terms: A Thesaurus for Use in Rare Book and Special Collections Cataloging (ACRL)
rbgenr	Genre Terms: A Thesaurus for Use in Rare Books and Special Collections Cataloging (ACRL)
rbpap	Paper terms: A Thesaurus for Use in Rare Book and Special Collections Cataloging (ACRL)
rbpri	Printing & Publishing Evidence: A Thesaurus for Use in Rare Book and Special Collections Cataloging [used for printing terms] (ACRL)
rbprov	Provenance Evidence: A Thesaurus for Use in Rare Book and Special Collections Cataloging (ACRL)
rbpub	Printing & Publishing Evidence: A Thesaurus for Use in Rare Book and Special Collections Cataloging [used for publishing terms] (ACRL)

Code	Name of Controlled Vocabulary
rbtyp	Type Evidence: A Thesaurus for Use in Rare Book and Special Collections Cataloging (ACRL)
sears	Sears List of Subject Headings (H.W.Wilson Company)
she	SHE: Subject Headings for Engineering
test	Thesaurus of Engineering and Scientific Terms
tgn	Getty Thesaurus of Geographic Names http://www.getty.edu/research/tools/vocabulary/tgn/

* Be wary of using the locally created vocabularies. The purpose of controlled vocabularies is to provide an environment where terms assigned by various metadata creators are represented in the same way.

**If you are using a locally created vocabulary, you'll need to create a thesaurus so that approved terms are uniformly applied.

Submitting New Vocabularies:

The vocabularies listed here are those most likely to be in use in North Carolina. In order to ensure that this list remains updated, useful, and consistent across all cultural heritage institutions in North Carolina, please contact the NC ECHO Metadata Coordinator if a vocabulary you are using is not on this list so that it can be added and a code can be devised.

Input Guidelines:

- 1) Each subject gets its own subject tag.
- 2) Use controlled vocabularies for subject terms. Keywords can be input into the **description** for keyword access.
- 3) Include a **scheme** qualifier for the controlled vocabulary used. Identify applicable vocabulary using standardized abbreviations noted above. If using controlled vocabularies not included in the above list, please see Submitting New Vocabularies above.
- 4) Use specific rather than general words where possible:
 - Cats rather than Felines
 - Siamese cats rather than Cats
- 5) Subjects can include:
 - Personal names
 - Families
 - Corporate names
 - Topics
 - Genres
 - Events
- 6) To establish a distinction from other elements: creator of a resource goes in **Creator** element. Use the creator as a subject if the resource is also *about* the creator. For instance, a diary is created by a person, but also is about that person (use the person as creator and subject). A chair, however, is created by a person, but does not contain information about that person (use the person as creator only).
- 7) Subjects can describe what the resource is about or what the resource is.

Description

Element: Description

Mandatory: Yes

Repeatable: Yes

Description: A textual description of the content of the resource, such as an abstract, table of contents, or a free-text account of the resource. The description element allows for the inclusion of natural language descriptors (keywords) as well as narrative explanation of the content of the resource.

Refinements: none

Schemes: none

Input Guidelines:

- 1) Enter descriptive text, remarks, or comments about the resource. This information can be taken from the resource or provided by the metadata creator.
- 2) Enter here specialized information not included in other elements (i.e., measurements of a depicted object, description, provenance, technique, distinguishing features, inscriptions, condition, history of the work) that is considered to be significant for identification or understanding.
- 3) Enter keyword terms not available in the **Subject** element.
- 4) Separate different elements of the description (i.e, separate paragraphs) using multiple description tags.

Publisher

Element: Publisher

Mandatory: Yes

Repeatable: Yes

Description: Entity or entities that make the resource available. Publisher is the institution that published the digital resource and/or the institution that is hosting the digital resource.

Refinements: none

Schemes: Library of Congress Name Authorities File (lcnaf)

Input Guidelines:

- 1) Use the authority form of the institution name found in the authorities file (<http://authorities.loc.gov>).
- 2) If the name does not appear in the authorities file, establish a heading as instructed in the **creator** element and in AACR2 and DACS.
- 3) Use separate publisher elements for digital resource publisher and the institution hosting that resource.
- 4) For those resources that are born digital, if the entity that is making the resource available is the same as the creator, enter the name in both **creator** and **publisher**.

Contributor

Element: Contributor

Mandatory: No

Repeatable: Yes

Description: Person(s), family(ies), or organization(s) who made significant intellectual contributions to the resource, but whose contribution is secondary to the person(s), family(ies) or organization(s) specified in the **Creator** element(s). Examples include editor, transcriber, translator, illustrator, etc.

Refinements: none

Schemes: Library of Congress Name Authorities File (lcnaf)

Input Guidelines:

- 1) Enter each contributor in a separate contributor element.
- 2) Use the authority form of the name (<http://authorities.loc.gov>).
- 3) If the name does not appear in the authorities file, establish a heading as instructed in the **Creator** element and in AACR2 or DACS.
- 4) The function of the contributor *may* be included in the description field.

Type

Element: Type

Mandatory: No

Repeatable: Yes

Description: A broad term drawn from a controlled vocabulary that describes the genre or nature of the resource.

Refinements: none

Schemes: DCMI Type Vocabulary
<http://dublincore.org/documents/dcmi-type-vocabulary/>

Input Guidelines:

- 1) Use the DCMI Type Vocabulary (below) to establish the type value for a resource.
- 2) Some digital objects may involve more than one Type, i.e. a manuscript collection may have text, image, sound, etc. Use separate Type elements to enter multiple types.

DCMI Type Vocabulary List

DCMI Type	Definition
Collection	A collection is an aggregation of items. The term collection means that the resource is described as a group; its parts may be separately described and navigated. This should only be used in the context of describing an online collection (see NC ECHO's <i>Catalog of Online Collections and Exhibits Dublin Core Implementation</i>)
Dataset	A dataset is information encoded in a defined structure (for example, lists, tables, and databases), intended to be useful for direct machine processing.
Event	An event is a non-persistent, time-based occurrence.
Image	An image is a primarily symbolic visual representation other than text.
Interactive Resource	An interactive resource is a resource which requires interaction from the user to be understood, executed, or experienced.
Service	A service is a system that provides one or more functions of value to the end-user.
Software	Software is a computer program in source or compiled form which may be available for installation non-transiently on another machine.
Sound	A sound is a resource whose content is primarily intended to be rendered as audio.
Text	A text is a resource whose content is primarily words for reading.
Physical Object	An inanimate, three-dimensional object or substance.
StillImage	A static visual representation. Note, the difference between image and still image is not clear. NC ECHO recommends the use of Image rather than StillImage.
MovingImage	A series of visual representations that, when shown in succession, impart an impression of motion.

Format

Element: Format

Mandatory: Yes

Repeatable: Yes

Description: The physical or electronic format of the resource being described. Format may include the physical extent, dimensions, or media-type of the original resource, or the electronic media-type or extent of the digital resource, such as file format, file size, or playtime. This element can be used to identify the software and hardware needed to load and to use the digital resource.

Refinements: Format.Extent
Format.Medium

Schemes: see **Subject** for Format.Medium (Original) schemes
Internet Media Types (IMT)
<http://www.iana.org/assignments/media-types/>

Input Guidelines:

- 1) For Format.Extent (Original), recommended best practice to enter the extent of the original form of the resource using measurements such as the number of linear feet, cubic feet, boxes, folders, items, etc., or dimensions. You may also choose to use combinations of those measurements. If you do choose to represent multiple measurements, include separate Format.Extent elements for each measurement.
- 2) For Format.Extent (Digital), recommended best practice is to include file size for large media files that have high bandwidth as kilobytes (kb), megabytes (mb), etc. For large media files, such as digital audio and video, best practice is to include the playtime of the resource.
- 3) Format.Medium (Original), recommended best practice is to select a term from a controlled vocabulary that expresses the physical manifestation of the original resource. For controlled vocabularies, see table in **Subject**.
- 4) Format.Medium (Digital), recommended best practice is to select electronic format terms from the Internet Media Types standardized list (<http://www.iana.org/assignments/media-types/>), also known as MIME types. New media types and applications are always emerging. If the resource format being described is not yet part of the MIME type list, follow the MIME convention by selecting a broad category of object format (audio, video, application, etc.) for the first part of the MIME type, then use the file name extension usually attached to files of this format as a brief identifier for the second half of the MIME type.

Examples from Internet Media Types

Element/Value	Definition
Image/jpeg	Visual file in JPEG format
Text/html	Text file in HTML format
Text/xml	Text file in SGML format
Video/mpeg	Video file in MPEG format
Audio/mp3	Sound file in MP3 format

Identifier

Element: Identifier

Mandatory: Yes

Repeatable: Yes

Description: An unambiguous character string or record number that clearly and uniquely identifies a digital resource. The *Identifier* element ensures that individual digital resources can be managed, stored, recalled, and used with reliability.

Refinements: none

Schemes: URI, ISBN, Public Identifier

Input Guidelines:

- 1) **Required** for all resources posted on the web: use the full path URL (beginning with http://) for the digital resource.
- 2) If the URI is not used in the initial Identifier element, adding another Identifier containing the URI is recommended. URI and URL are synonymous for these purposes.
- 3) Other identifiers can include local call numbers, accession or registry numbers, or ISBNs.

Source

Element: Source

Mandatory: Yes (if applicable)

Repeatable: Yes

Description: When applicable, use the Source element to cite any aggregated resource from which the digital resource was derived. For instance, a digital resource could represent a letter from an archival collection. The collection then becomes the source for this digital resource. Some digital resources are “born digital” and may derive from no pre-existing resource; in these cases, the Source element is not used.

Note the relationship between the Source element and the **Relation** element. Source is a specific kind of relationship. Because the Source element shows a derivative relationship with another resource, do not repeat that information in a **Relation** element. See **Relation** for more detail on the role of that element.

Refinements: none

Schemes: none

Input Guidelines:

- 1) Use separate Source elements to enter multiple sources. Usually there will only be one source from which the present digital resource has been derived.
- 2) The Source element may consist of a combination of descriptive aspects, such as free text combined with an ISBN to describe a book.
- 3) Whenever possible, include a unique standard identifier, such as an ISBN or ISSN for published works. If no standard identifier exists, use a local call number, control number, accession number, or barcode. Identify the institution associated with such locally derived number.
- 4) Clarify the nature of the relationship between the two resources by using an initial phrase, such as Excerpted from: , From: , In the: , etc.

Language

Element: Language

Mandatory: Yes (if applicable)

Repeatable: Yes

Description: Indicates the language(s) of the intellectual content of the resource. This is the language(s) in which a text is written or the spoken language(s) of an audio or video resources. Visual images do not usually have a language unless there is significant text in a caption or in the image itself.

Refinements: none

Schemes: ISO639-2 <http://www.loc.gov/standards/iso639-2/englangn.html>

Input Guidelines:

- 1) Enter only one language per element. For resources that have multiple languages, repeat the language element for each language represented.
- 2) Indicate language using the ISO 639-2b code. For a list of these codes, see ISO 639-2 (<http://www.loc.gov/standards/iso639-2/englangn.html>)
- 3) In addition to using language codes, if needed, a textual description of the nature of the language may be included in the **Description** element. Example: In German and English, in parallel columns.

Example language codes

Code	Language
chr	Cherokee
eng	English
fre	French
ger	German
grc	Ancient Greek
gre	Modern Greek
lat	Latin
por	Portuguese
rus	Russian
spa	Spanish
yid	Yiddish

Relation

Element: Relation

Mandatory: No

Repeatable: Yes

Description: Contains information necessary to find or to link to a related resources. Content of this element may include an identifier, such as the title or a URL, URI, etc., the physical location of the related resource, if important, information about the nature of the relationship between the two resources, and so on. A resource may be related to other resources in a variety of ways that require more than one Relation element to describe. The same resource can be part of a larger resource while simultaneously containing a smaller resource within itself; it can be a different version of another resource; or contain the same intellectual content as another resource, but in a different format.

Note that **Source** is a specific kind of relationship (see **Source** above for more information). Relation elements are less common in the description of digital surrogates than other applications of Dublin Core. The options below are included in case they are relevant to the description being created. In particular, many of the relation elements refer to aspects of description for those objects that are “born digital” rather than digital surrogates that typically form a digitization project.

Refinements: REQUIRED. Use one of the following refinements to explain the nature of the relationship between the described resource and the related resource described in the Relation element. Include the refinement in the label name, not the element text. The “described resource” is the resource for which you are creating Dublin Core. The “related resource” is what you are referring to in the **Relation** or **Source** elements.

Refinement Label	Relationship between the two resources
Relation.IsPartOf	The described resource is a physical or logical part of the related resource. Note: if the described resource is part of an aggregated resource, such as an archival collection, use Source .
Relation.HasPart	The described resource includes the related resource either physically or logically.
Relation.IsVersionOf	The described resource is a version, edition, or adaptation of the related resource.
Relation.HasVersion	The described resource has a version, edition, or adaptation of the related resource.
Relation.IsFormatOf	The described resource has the same intellectual content of the related resource, but is presented in another format.
Relation.HasFormat	The described resource existed before the related resource, which is essentially the same intellectual content presented in another format.
Relation.IsReferencedBy	The described resource is referenced, cited, or otherwise pointed to by the related resource.
Relation.References	The described resource references, cites, or otherwise points to the related resource.
Relation.IsReplacedBy	The described resource is supplanted, displaced, or superceded by the related resource.

Refinement Label	Relationship between the two resources
Relation.Replaces	The described resource supplants, displaces, or supercedes the related resource.
Relation.IsRequiredBy	The described resource is required by the related resource either physically or logically.
Relation.Requires	The described resource requires the related resource to support its function, delivery, or coherence of content.
Relation.ConformsTo	Reference to an established standard to which the resource conforms.

Schemes: none

Input Guidelines:

- 1) Use separate Relation elements to describe multiple relations.
- 2) Refinement is required for the Relation element. Select refinements from the above list of qualifiers.
- 3) Include sufficient information in the Relation element to enable users to identify, cite, and either locate or link to the related resource.
- 4) Note that the **Source** is a specific kind of relationship. Do not repeat that information using the Relation element.

Coverage

Element: Coverage

Mandatory: No

Repeatable: Yes

Description: Describes the spatial or temporal characteristics of the intellectual content of the resource. Spatial refers to the location(s) covered by the intellectual content of the resource, *not the place of publication*. Temporal coverage refers to the time period or era covered by the intellectual content of the resource, *not the publication date*. For artifacts or art objects, the spatial characteristics usually refer to the place where the artifact/object originated while the temporal characteristics refer to the date or time period during which the artifact/object was made.

Refinements: REQUIRED. There are two refinements for the Coverage element in order to distinguish either the spatial or temporal characteristics of the element:

Coverage.Spatial: describes geographical/place information using controlled vocabularies or conventions, such as coordinates in a defined grid system

Coverage.Temporal: describes a date/time period according to accepted standards and controlled vocabularies.

Schemes:

Spatial

Getty Thesaurus of Geographic Names (tgn)

(<http://www.getty.edu/research/tools/vocabulary/tgn/>)

Library of Congress Subject Headings (lcsb)

(<http://authorities.loc.gov>).

Temporal

DCMI Period (<http://dublincore.org/documents/dcmi-period/>).

W3-DTF, a profile based on ISO 8601 (w3cdtf)

(<http://www.w3.org/TR/NOTE-datetime/>).

Library of Congress Subject Headings for time periods (lcsb)

(<http://authorities.loc.gov>).

A subset of eras have been created from the Library of Congress that NC ECHO encourages you to use:

Era terms for American History

Eras	LCSH Terminology for DC content
Colonial	United States -- History -- Colonial period, ca. 1600-1775
Revolutionary War	United States -- History -- Revolution, 1775-1783
Early Republic	United States -- History -- 1783-1815
Antebellum	United States -- History -- 1815-1861
U.S. Civil War	United States -- History -- Civil War, 1861-1865
Reconstruction	United States -- History -- 1865-1877
World War I	World War, 1914-1918

Progressive Era	United States -- History -- 1898-1914
Roaring 20s/Jazz Age	United States -- History -- 1919-1933
New Deal	New Deal, 1933-1939
World War II	World War, 1939-1945
Cold War	Cold War
Vietnam War	Vietnam War, 1961-1975
Jim Crow	United States -- History -- 1877-1955
Civil Rights	United States -- History -- 1955 - 1968
Great Depression	Depressions -- 1929

*Note that the dates for these eras are flexible. They are provided to give you a general range for the era, and should not be considered definitive from a historical perspective. Aside from the date ranges for wars (which do begin on a certain date and end on a certain date), eras are fluid occurrences and subject to a multitude of interpretation. We are attempting to tie cultural heritage materials, particular people, corporate bodies, and families with social, cultural, economic, and intellectual climates, and we are using the era labels to achieve that. These are not meant to convey any historical interpretation beyond the general understandings of American history.

Input Guidelines:

- 1) Multiple places and time periods may be associated with the intellectual content of the resource. No hierarchy is implied. Use separate qualified coverage elements for each place or time period.
- 2) If using place names, select terms from a controlled vocabulary.
- 3) Use free text to input B.C.E. dates as in 200 B.C.E.
- 4) For a range of dates, enter the dates using the ISO 8601 W3C Date-Time Format (see **date** element for more information on this data value standard).
- 5) To show that a date is approximate, follow it with a question mark, as in 1997?

Rights Management

Element: Rights

Mandatory: Yes

Repeatable: Yes

Description: Contains a rights management or usage statement, a URL that links to a rights management statement, or a URL that links to a service providing information on rights management for the resource. A rights management statement may contain information concerning accessibility, reproduction of images, copyright holder, restrictions, securing permissions for use of text or images, etc.

Refinements: none

Schemes: none

Input Guidelines:

- 1) Enter either a textual statement or a URL pointing to a use and access rights statement for digital resources on the Internet.
- 2) The statement can be a general copyright statement for the institution, for the whole collection, or it may be a specific statement for each resource. The statement may be general, providing contact information, or specific, including the name of the copyright holder.
- 3) Make sure that the rights statement corresponds to the digital resource; for example, link to a copyright statement for the digital resource instead of for the original resource.

Dublin Core Examples

Below is the compilation of examples used throughout the implementation guidelines.

Example 1: Photograph

Image courtesy of the North Carolina State Archives



```
<html>
<head>
<title>Fayetteville Street Business District, Raleigh, N.C., circa 1947 </title>
<META NAME="DC.Title" CONTENT=" Fayetteville Street Business District, Raleigh, N.C.,
circa 1947" >
<META NAME="DC.Title.Alternative" CONTENT="Raleigh, North Carolina Fayetteville Street
business district, circa 1947" >
<META NAME="DC.Subject" SCHEME="lcsch" CONTENT="Photography" >
<META NAME="DC.Subject" SCHEME="lcsch" CONTENT="Streets" >
<META NAME="DC.Subject" SCHEME="lctgm" CONTENT="Commercial streets" >
<META NAME="DC.Subject" SCHEME="lcnaf" CONTENT="North Carolina State Capitol
(Raleigh, N.C.)" >
<META NAME="DC.Subject" SCHEME="lcsch" CONTENT="Hotels" >
<META NAME="DC.Subject" SCHEME="lcsch" CONTENT="Stores, Retail" >
```

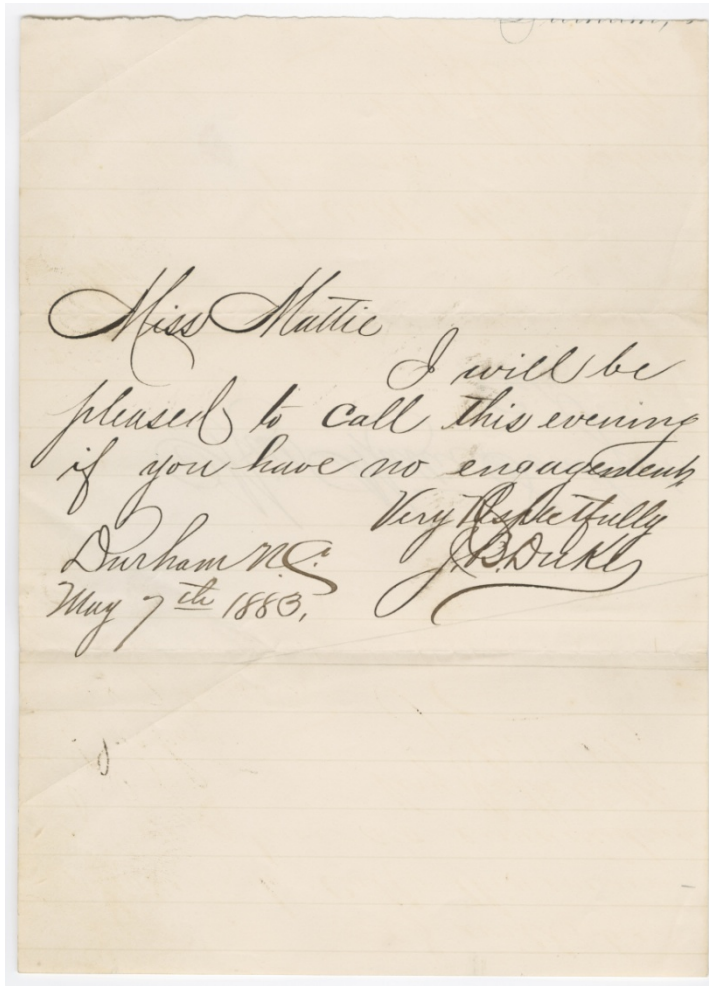
```

<META NAME="DC.Subject" SCHEME="lcsh" CONTENT="Motion picture theaters">
<META NAME="DC.Subject" SCHEME="lcsh" CONTENT="Skyscrapers">
<META NAME="DC.Subject" SCHEME="lcsh" CONTENT="Automobiles">
<META NAME="DC.Subject" SCHEME="lcsh" CONTENT="Aerial photographs">
<META NAME="DC.Subject" SCHEME="lctgm" CONTENT="Cities & towns">
<META NAME="DC.Description" CONTENT="A circa 1947 street scene depicting Fayetteville
Street in Raleigh, North Carolina, and ending at the State Capitol building in the distance. The
street is quite busy with cars, and demonstrates the parking along the street at the time of the
photograph. The photograph shows the landscape and tall buildings that lined Fayetteville Street at
that time.">
  <META NAME="DC.Publisher" SCHEME="lcnaf" CONTENT="North Carolina State Archives.
Audio Visual and Iconographic Materials.">
  <META NAME="DC.Date.Created" SCHEME="iso8601" CONTENT="1945/1949">
  <META NAME="DC.Type" SCHEME="DCMIType" CONTENT="Image">
  <META NAME="DC.Format.Medium" SCHEME="gmgpc" CONTENT="Aerial views">
  <META NAME="DC.Format.Medium" SCHEME="lcsh" CONTENT="Photographic prints">
  <META NAME="DC.Format.Extent" CONTENT="1 item">
  <META NAME="DC.Identifier" SCHEME="URI"
CONTENT="http://www.ncecho.com/dublincore/guidelines/">
  <META NAME="DC.Identifier" CONTENT="4.4.1.96">
  <META NAME="DC.Coverage.Spatial" SCHEME="lcsh" CONTENT="Raleigh (N.C.)">
  <META NAME="DC.Coverage.Spatial" SCHEME="lcsh" CONTENT="Wake County (N.C.)">
  <META NAME="DC.Rights" CONTENT="The North Carolina State Archives owns copyright to
this document.">
  <META NAME="DC.Source" CONTENT="Carolina Power & Light Company">
</head>
<body>
[body of the html document]
</body>
</html>

```

Example 2: Letter

Image courtesy of the Digital Durham project, <http://digitaldurham.duke.edu>



```
<html>
<head>
<title>Letter from James Buchanan Duke to Mattie Logan Southgate, May 7, 1883</title>
<META NAME="DC.Title" CONTENT=" Letter from James Buchanan Duke to Mattie Logan
Southgate, May 7, 1883">
<META NAME="DC.Title.Alternative" CONTENT="James B. Duke to Mattie Logan Southgate,
May 7, 1883">
<META NAME="DC.Creator" SCHEME="lcnaf" CONTENT="Duke, James Buchanan, 1856-
1925">
<META NAME="DC.Creator" SCHEME="lcnaf" CONTENT="Jones, Mattie Logan Southgate">
<META NAME="DC.Subject" SCHEME="lcsch" CONTENT="Courtship – North Carolina – 19th
century">
<META NAME="DC.Subject" SCHEME="lcsch" CONTENT="Durham (N.C.) -- History">
<META NAME="DC.Subject" SCHEME="lcsch" CONTENT="Men – North Carolina – Social
conditions – 19th century">
<META NAME="DC.Subject" SCHEME="lcnaf" CONTENT="Duke, James Buchanan, 1856-
1925">
```

```

    <META NAME="DC.Subject" SCHEME="Icsh" CONTENT="Women – Southern states – Social
Conditions – 19th century">
    <META NAME="DC.Subject" SCHEME="Icnaf" CONTENT="Jones, Mattie Logan Southgate">
    <META NAME="DC.Subject" SCHEME="Icsh" CONTENT="Letters">
    <META NAME="DC.Description" CONTENT="James Buchanan Duke makes a formal request
to call on Mattie Southgate.">
    <META NAME="DC.Publisher" SCHEME="Icnaf" CONTENT="Duke University Libraries">
    <META NAME="DC.Date.Created" SCHEME="iso8601" CONTENT="18830507">
    <META NAME="DC.Type" SCHEME="dct" CONTENT="Image">
    <META NAME="DC.Format.Extent" CONTENT="1 page">
    <META NAME="DC.Identifier" SCHEME="URI"
CONTENT="http://www.digitaldurham.duke.edu/hueism.php?x=letter&id=435">
    <META NAME="DC.Source" CONTENT="Southgate-Jones Family Papers, 1760-1982. Rare
Book, Manuscript and Special Collections Library, Duke University">
    <META NAME="DC.Language" SCHEME="iso639-2" CONTENT="eng">
    <META NAME="DC.Coverage.Spatial" SCHEME="Icsh" CONTENT="Durham (N.C.)">
    <META NAME="DC.Coverage.Spatial" SCHEME="Icsh" CONTENT="Durham County (N.C.)">
    <META NAME="DC.Rights" CONTENT="The copyright interest in the material in this digital
collection has not been transferred to the Digital Durham project. These text and images may not
be used for any commercial purpose without the permission of the Duke University Rare Book,
Manuscript and Special Collections Library and the Digital Durham Project. Copyright permission for
subsequent uses is the responsibility of the user. The electronic form of the letter is the property of
the Duke University Libraries. It may be used freely by individuals for research, teaching, and
personal use as long as this statement of availability is included in the text.">
    </head>
    <body>
    [body of the html document]
    </body>
    </html>

```

Example 3: Collection of Papers

Charles Phillips Russell Papers, 1883-1974, University of North Carolina at Chapel Hill (excerpt)

```
<html>
<head>
<title> Charles Phillips Russell Papers, 1883-1974</title>
<META NAME="DC.Title" CONTENT="Charles Phillips Russell Papers, 1883-
1974">
<META NAME="DC.Creator" SHEME="Icnaf" CONTENT="Russell, Charles
Phillips, 1884-1974.">
<META NAME="DC.Subject" SCHEME="Icnaf" CONTENT="Ehle, John, 1925- .">
<META NAME="DC.Subject" SCHEME="Icsh" CONTENT="Emerson, Ralph
Waldo, 1803-1882--Biography.">
<META NAME="DC.Subject" SCHEME="Icnaf" CONTENT="Russell, Charles Phillips, 1884-
1974 .">
<META NAME="DC.Subject" SCHEME="Icsh" CONTENT="Associations, institutions, etc. –
North Carolina – History – 20th century">
<META NAME="DC.Subject" SCHEME="Icsh" CONTENT="Authors and publishers – United
States – History – 20th century">
<META NAME="DC.Subject" SCHEME="Icsh" CONTENT="Biographers – North Carolina – History –
20th century">
<META NAME="DC.Subject" SCHEME="Icnaf" CONTENT="Brentano's (Firm).">
<META NAME="DC.Subject" SCHEME="Icsh" CONTENT="Chapel Hill (N.C.) --
Photographs">
<META NAME="DC.Subject" SCHEME="Icsh" CONTENT="College teachers – North Carolina
– History – 20th century">
<META NAME="DC.Subject" SCHEME="Icsh" CONTENT="Diaries">
<META NAME="DC.Subject" SCHEME="Icsh" CONTENT="University of North
Carolina (1793-1962)--Faculty--History--20th century.">
<META NAME="DC.Subject" SCHEME="Icnaf" CONTENT="Williams, Henry Horace, 1858-
1940">
<META NAME="DC.Decription" CONTENT="Charles Phillips Russell was a
journalist, biographer, and member of the faculty of the English Department, 1931-1937, and the
School of Journalism, 1937-1954, at the University of North Carolina in Chapel Hill, N.C. The
collection includes correspondence, writings, financial and legal material, diary volumes, subject
files, and drawings and photographs of Charles Phillips Russell. Professional correspondence,
primarily 1931-1969, relates chiefly to writing and publishing books and articles, to the work of
colleagues and former students, and to higher education. Included is correspondence with
publishers (Brentano's, William Morrow, Scribners, and others) and with newspapers and
magazines in North Carolina and New York. Letters from Russell's mother, Lucy Phillips Russell,
deal with life in Rockingham, N.C.; with her writing; and with Russell's career. Writings include
drafts, research notes, outlines, synopses, and printer's proofs of Russell's books, plays, short
stories, articles, poems, and newspaper columns and of works by others. Much of this material
relates to Russell's biographies of Ralph Waldo Emerson, Benjamin Franklin, and John Paul Jones.
There are also papers documenting Russell's financial affairs; short diary and other volumes;
subject files pertaining to organizations with which Russell was associated and topics of interest
to him; scrapbooks of clippings of articles by and about Russell and on other topics; photographs and
photograph albums with images of Chapel Hill, N.C., Russell, family members, and friends;
drawings by Russell and family members; an audio tape of a radio production about Horace
Williams by John Ehle; and a home movie.">
<META NAME="DC.Description" CONTENT="Almost all of the material was
received from the Russell House of Chapel Hill, N.C., through Avery Russell of New York, N.Y., in
March and July 1975. Small numbers of items were received from the Carnegie Bookshop, New
```

York, N.Y., in January 1977; from Susan (Russell) Crosland in August 1977; and, as a transfer, from the Charles Phillips Papers (#2462) in August 1977. The items from the Charles Phillips Papers were originally received from Charles Phillips Russell.">

<META NAME="DC.Publisher" CONTENT="Manuscripts Department, Library of the University of North Carolina at Chapel Hill">

<META NAME="DC.Date.Created" SCHEME="iso8601" content="1883/1974">

<META NAME="DC.Format.Extent" CONTENT="7,800 items (14.0 linear feet)">

<META NAME="DC.Format.Medium" CONTENT="manuscript">

<META NAME="DC.Identifier" SCHEME="URI"

CONTENT="http://www.lib.unc.edu/mss/inv/ead2/04004.xml">

<META NAME="DC.Relation.References" CONTENT="Cornelia Phillips Spencer Papers (#4004) in the Southern Historical Collection, University of North Carolina at Chapel Hill">

<META NAME="DC.Relation.References" CONTENT="Charles Phillips Papers (#2462) in the Southern Historical Collection, University of North Carolina at Chapel Hill">

<META NAME="DC.Language" SCHEME="iso639-2" CONTENT="eng">

<META NAME="DC.Rights" CONTENT="Copyright is retained by the authors of items in these papers, or their descendants, as stipulated by United States copyright law.">

</head>

<body>

[body of html document]

</body>

</html>

Glossary

AACR2: *Anglo-American Cataloging Rules*, 2nd Edition. Content rules used in the creation of cataloging records.

AAT: *Art and Architecture Thesaurus*; a publication of the Getty Information Institute, a thesaurus for terms to describe art and architecture.

abstract: information relating to the general contents, nature, and scope of the described materials. One way to write an abstract is to consider four elements: 1) specific types and forms of material present, noting the presence of graphic or other non-textual materials; 2) the dates within which the material bulks largest; 3) the functions or activities resulting in the creation of the records; 4) the most significant topics, events, persons, places, etc.

access point: a name, term, phrase, or code that is used to search, identify, or locate a file, document, record, or object.

acquisitions information: information about the acquisition of the collection or objects by the repository.

administrative information: information regarding the administration of the collection or object. May include acquisitions information, provenance, user restrictions, access restrictions, copyright ownership, citation information, and general processing information. Administrative information can refer to all or part of a collection.

administrative metadata: metadata primarily intended to facilitate the management of resources.

angled brackets: an SGML/XML syntax convention to set apart a *tag*, < >.

APPM : *Archives Personal Papers and Manuscripts: A Cataloging Manual for Archival Repositories, Historical Societies, and Manuscript Libraries* by Steven Hensen. Archival cataloging rules published by SAA as a supplement to AACR2 and superseded by *Describing Archives: A Content Standard (DACS)*.

attribute: modifier for the meaning of elements, named properties of an element that may carry different values depending up on the context in which they occur.

authority control: the process of verifying and authorizing the choice of unique access points, such as names, subjects, and forms, and assuring that the access points are consistently applied and maintained in an information retrieval system. See also **controlled vocabulary**.

authority file: a group of authority records searchable by all established headings and cross-references.

authority record: an entry that contains information about an access point. An authority record establishes the form of the heading and determines cross-references and relationships of the heading to other headings.

biographical/historical note: description of the life and activities of a person, family, or corporate body that generated the document described therein. A biographical/historical note is intended to provide contextual information for researchers.

boilerplate text: standardized text used for labels and other information supplied for all of an institution's digital files (i.e. copyright notice, citation format, etc.).

CCO: *Cataloging Cultural Objects*, a content standard for the description of cultural objects and their images sponsored by the Visual Resources Association.

CDWA: *Categories for the Description of Works of Art*, a metadata schema for describing works of art for the purpose of art historical scholarship.

close tag: the tag that closes an element, also called *end tag*.

controlled access: a list of index terms for a finding aid.

controlled vocabulary: formal limits on a vocabulary, useful for consistent use of vocabulary terms.

crosswalk: an authoritative mapping from the metadata elements of one scheme to the elements of another.

DACS: *Describing Archives: A Content Standard*, a content standard for archival description, including single- and multiple-level description. Maintained by **SAA**, the standard was first published in 2004 and supersedes **APPM**.

DCMI: Dublin Core Metadata Initiative, an open forum engaged in the development of interoperable online metadata standards that support a broad range of purposes and business models, responsible for the maintenance of the Dublin Core metadata schema.

descriptive metadata: metadata primarily intended to promote discovery, identification, and selection of information resources.

dtd: Document Type Definition. Documentation of the XML markup language that lists constraints and instructions for the markup language. The dtd is used in the validation of XML.

Dublin Core: metadata schema created for the World Wide Web. Consists of 15 elements typically used in conjunction with **HTML**. Maintained by the **DCMI**.

EAD: Encoded Archival Description. An SGML/XML dtd for the construction of archival finding aids that reflect the hierarchical arrangement of archival materials. EAD provides a framework for information retrieval and display on the World Wide Web. Maintained by **SAA** with support from the Library of Congress.

element: an essential building block of metadata schemas that serves to identify and surround the content of sections of the metadata. Elements are constructed of an **open tag** (start tag) and a **close tag** (end tag). Elements may contain other elements, attributes and values, or **PCDATA**. They can also be empty.

encoding rules: the **syntax** or prescribed order of the elements contained in a metadata description.

end tag: See **close tag**.

HTML: hypertext mark-up language; most common mark-up language found on the web. Used for display manipulation only. An international standard for coding text to make it appear with formatting on web pages. HTML includes the structure of documents (title, headings, etc.) and the formatting (bold, fonts, and font size). For example, `<i>Headline</i>` would make the word *Headline* appear in italics.

instance: the text and tags (excluding the dtd and related files) of an individual SGML/XML-encoded document, such as a single EAD-encoded finding aid.

interoperability: the ability of multiple systems using different hardware and software platforms, data structures, and interfaces, to exchange and share data.

ISAD(G): General International Standard Archival Description, a general framework for archival description developed by the International Council on Archives.

ISBN: International Standard Book Number, an identifier for nonserial print publications.

LCNAF: Library of Congress Name Authority File. A **controlled vocabulary** used for the names of persons, corporations, uniform titles, and series titles.

LCSH: *Library of Congress Subject Headings*. A **controlled vocabulary** used for creating subject terms and geographical terms.

MARC : Machine-readable Cataloging. Data structure standard used in Integrated Library Systems (ILS) for Online Public Access Catalogs (OPACs).

metadata: structured information that describes, explains, locates, and otherwise makes it easier to retrieve and use an information resource.

metadata harvesting: a technique for extracting metadata from individual repositories and collecting it in a central catalog to facilitate search **interoperability**.

metadata schema: a set of metadata elements and rules for their use that has been defined for a particular purpose.

metalanguage: a language used to describe other languages. SGML and XML are examples of metalanguages.

METS : Metadata Encoding and Transmission Standard, a specification for structural metadata.

OAI: Open Archives Initiative, an organization that maintains a protocol for harvesting metadata from distributed repositories.

open tag: the tag that opens an element, also called *start tag*.

preservation metadata: metadata primarily intended to help manage the process of ensuring the long-term preservation and usability of information resources.

provenance : history of ownership of materials prior to acquisition by the current institution.

qualifier: in Dublin Core and other metadata schemas, a term that restricts the meaning of an element or identifies the encoding scheme used in representing the value of the element.

rights metadata: metadata primarily intended to enable the management of rights related to information resources; a type of administrative metadata.

SAA: Society of American Archivists.

schema: a formally defined metadata scheme. In XML, a way of defining a document type used as an alternative to a dtd.

semantics: the definitions of metadata elements, as opposed to the rules for encoding or representing the values of the elements (**syntax**).

SGML: Standard Generalized Markup Language. XML (eXtensible Markup Language) is a subset of SGML and has been widely implemented on the World Wide Web.

source code: the code (usually **HTML**) behind any web page viewed in a browser. To see the source code of a page in Internet Explorer, right click on the page and select View Source or click on View on the tool bar and then select View Source. In Netscape, it is referred to as Page Source.

start tag: See **open tag**.

structural metadata: metadata that describes the internal organization of a resource and its place in an external organization.

surrogate: a secondary object meant to substitute for the original, such as a photograph of an artwork used in place of the artwork.

syntax: how a metadata schema is structured for exchange in machine-readable form, including the rules regarding that structure, definitions of metadata elements (**semantics**). Common syntaxes include MARC, SGML, and XML.

tag: another term for **element**, it refers to the syntactic structure of expressing elements. For all intents and purposes, these terms are used interchangeably, although tag refers to the actual representation of the element, while element refers to the intellectual content of the tag.

tag library: a document that lists the names of the SGML or XML elements and attributes alphabetically, along with their definitions and rules for their use.

technical metadata: metadata primarily intended to document the creation and characteristics of digital files.

thesaurus: an arrangement of a **controlled vocabulary** in which all allowable terms are given and relationships among terms are shown.

URL: Uniform Resource Locator – the “address for a web site” (Ex.: <http://www.ncecho.org/Guide/index.htm>). **HTTP** is the method of connection; www.ncecho.org is the name of the host computer or server, also known as the **domain name**; /Guide/ is the particular folder on that computer; and index is the specific file; .htm is the kind of file that index is (also referred to as “URI”).

vocabulary: the universe of values that can be used in a particular metadata element.

VRA Core: Visual Resources Association Core Categories, a metadata schema for representing visual resources.

W3C: World Wide Web Consortium, an international committee that provides vision and standards for the Internet.

XML: eXtensible Markup Language, an SGML language that is constructing of a set of rules that allow for the definition of tags that separate a document into individual parts and subparts. Stored in ASCII Text format, XML documents are text files that store structured information.

Resources

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