How have global classification systems inspired content organization on the web?

Joseph Busch

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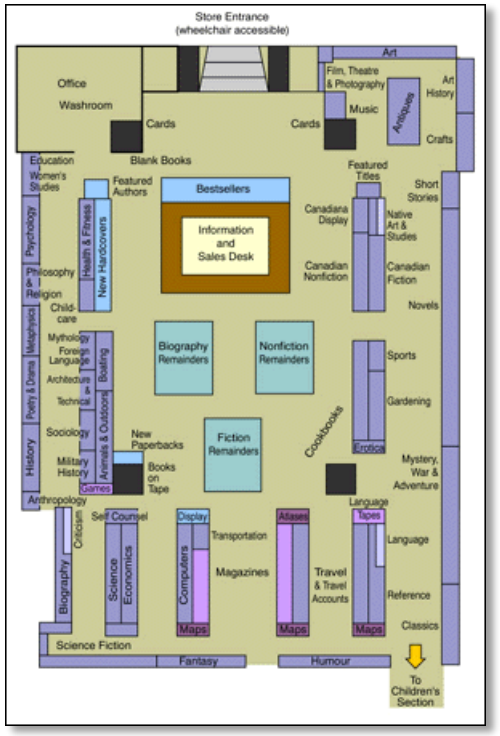
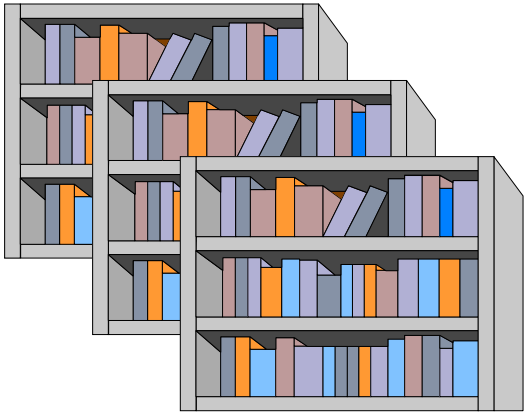
Classification schemes physically locate objects in one dimension



Store or Warehouse



Shelf Location

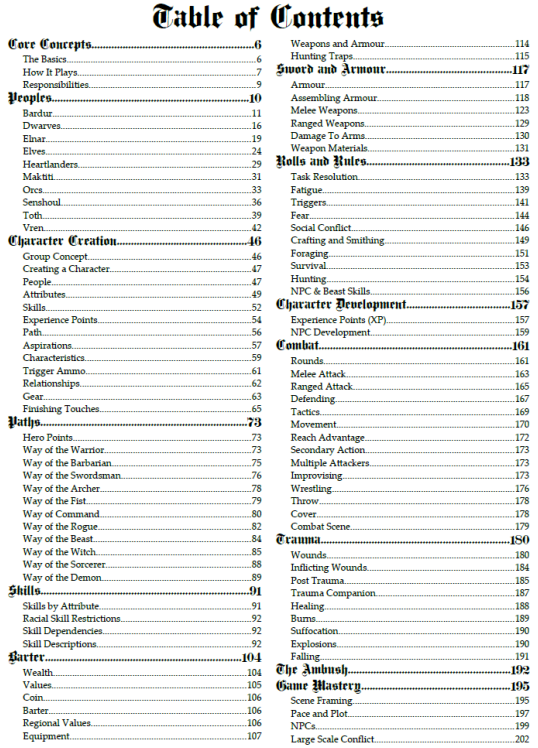


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Table of Contents or Bill of Materials (BOM)

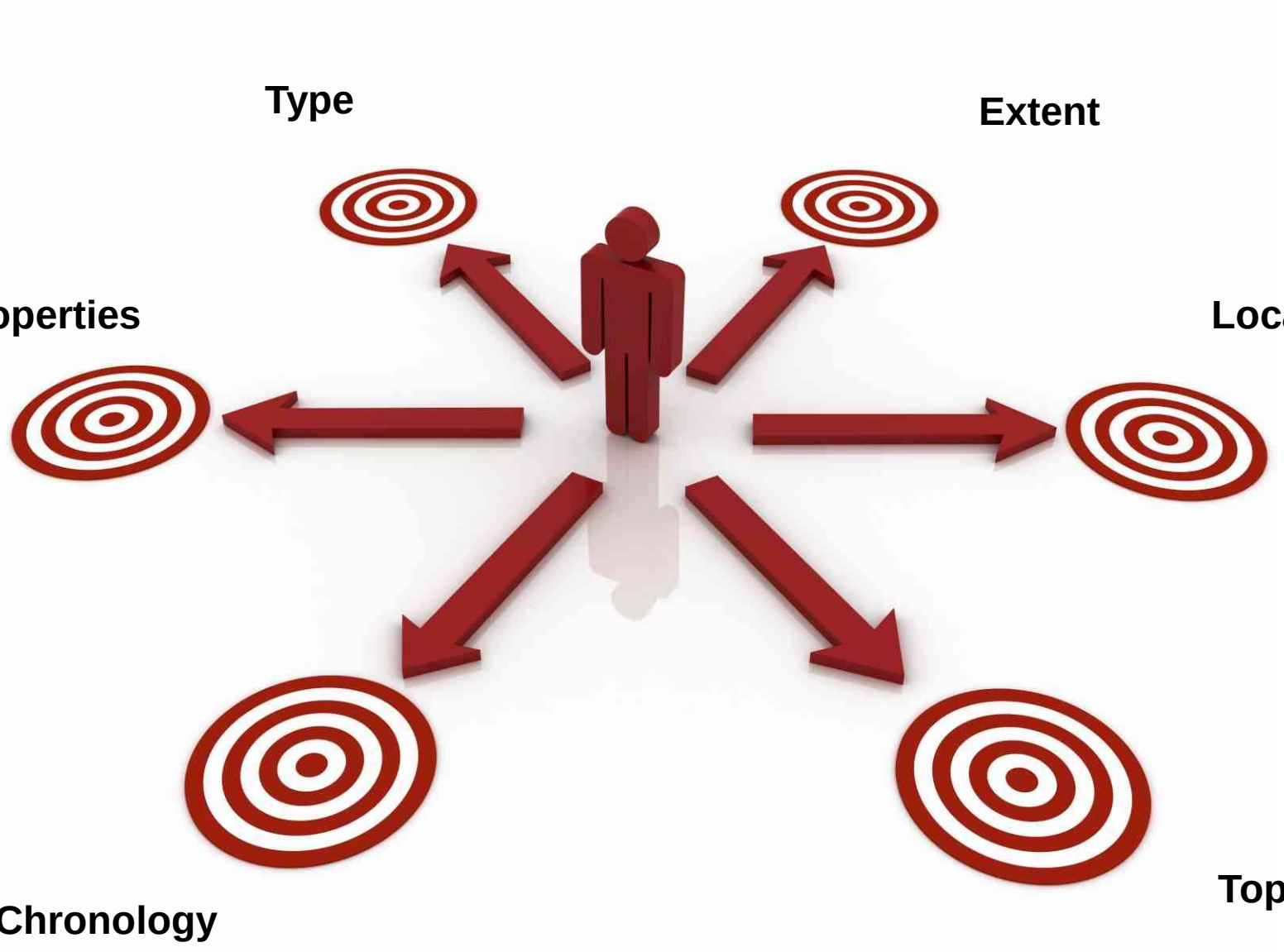
GCS Example: Physics & Astronomy Classification Scheme (PACS)

- Alphanumeric codes
- Strict (single-parent) hierarchy
- Incomplete and complex labels
- Some concepts are repeated many times

Semiconductors

Classification Code	Descriptive Label	Contextual Note
61.43.Dq	Amorphous semiconductors, metals, and alloys	
61.72.uj	III-V and II-VI semiconductors	[61.72.U- - Doping …]
61.82.Fk	Semiconductors	[61.82.-d - Radiation effects …]
64.70.kg	Semiconductors	[64.70.K- Solid-solid transitions]
64.75.Qr	Phase separation and segregation in semiconductors	
66.70.Df	Metals, alloys, and semiconductors	[66.70.-f … thermal cond. …]
68.35.bg	Semiconductors	[68.35.-p - Solid surfaces …]
68.55.ag	Semiconductors	[… Nucleation & growth of thin films …]
… + about 50 more instances (71.20.Mq, 71.20.Nr, 71.55.Cn, …		

The *real* world of concepts is multidimensional



Shopping for shoes on Zappos

- Size
- Width
- Styles
- Occasion
- Color
- Brand
- Price
- Heel Height
- Materials
- Pattern
- Accents

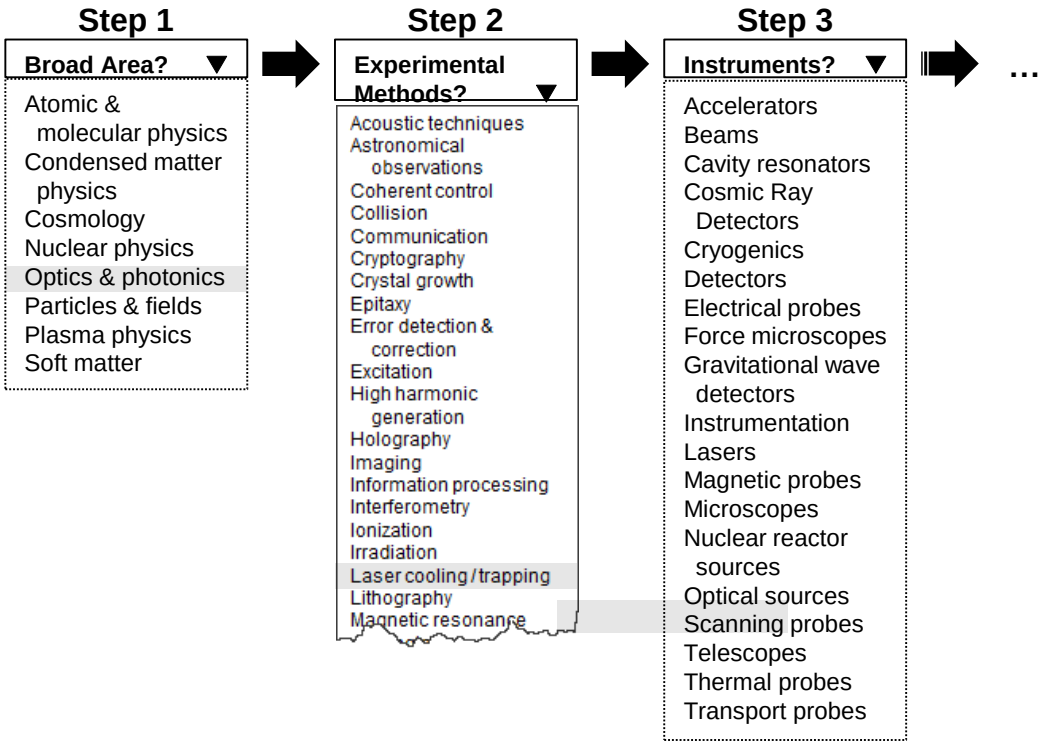
9 Common taxonomy facets

Facet	Definition	Example Source
Content Type	The various genres of content being created, managed and/or used.	AGLS Document Type, AAT Information Forms , Records management policy, etc.
Audience	Subset of constituents to whom a content item is directed or intended to be used.	GEM, ERIC Thesaurus, IEEE LOM, etc.
People	Names of important people such as authors, politicians, leaders, actors, etc.	LC NAF, NYTimes Topics-People
Organization	Names of organizations, their aliases and the relationships between them.	FIPS 95-2, D&B, Ticker Symbols, LC NAF, NYTimes Topics-Organizations, etc.
Industry	Broad market categories such as industry sector codes.	FIPS 66, SIC, NAICS, etc.
Location	Names of places of operations, activities, constituencies, etc.	ISO 3166, FIPS 5-2, FIPS 55-3, USPS, NYTimes Topics-Places etc.
Function	Activities and processes performed to accomplish goals.	FEA Business Reference Model, AAT Functions, etc.
Product	Names of products and services that are produced by an organization or people.	Household Products Database, etc.
Topic	Topical subjects and themes that are not included in other facets.	LCSH, NYTimes Topics-Subjects, etc.

Facetted classifications deconstruct complex concepts into a grammar

Physics Taxonomy

- What you're studying → Broad area, materials & systems
- Why you're studying it → Phenomena & properties
- How you go about studying it → Apparatus, theory & techniques



APS Taxonomy use cases

- Organizing & facilitating editorial & publishing process.
  - Taxonomy term selection (indexing).
  - Authors assigning topics to their submissions.
  - Defining areas of responsibility and interest for editors.
  - Assigning articles to APS editors.
  - Referees describing their areas of expertise.
  - Selecting referees to review articles.
  - Assigning articles to journal sections.
  - Statistical and article list reports by various subject criteria.
- Applying the new taxonomy to journal search/browse interfaces
- Applying the new taxonomy to multiple APS sites
  - Link journal articles and meeting abstracts by topic.

Dell use cases

Use Case	Context-ual Nav	Site Archi-tecture	Syno-nyms	Import Files
Associate learn content with specific products.	X			
Google search.	X		X	
Consistent terminology.	X		X	
Provide context within industry solutions.	X			
Moving from learn to product content.	X			
Consistency of experience among sites.				
Pulling together support & community content.	X			
Community content availability.	X			X
Surfacing software & peripherals information.				X
Integrating product support into product details.	X			
Find & share solutions content & best practices.			X	X
Pivot btwn service & product using technology.	X			
De-segmentation.		X		
Integrating external content.	X			X
Product-related parts & accessories.	X			X

Semantic relationships commonly manifested in web classifications

Concept	A unit of thought, an idea, meaning, or category of objects or events. A Concept is independent of the terms used to label it.
Preferred Label	A preferred lexical label for the resource such as a term used in a digital asset management system.
Alternate Label	An alternative label for the resource such as a synonym or quasi-synonym.
Broader Concept	Hierarchical link between two Concepts where one Concept is more general than the other.
Narrower Concept	Hierarchical link between two Concepts where one Concept is more specific than the other.
Related Concept	Link between two Concepts where the two are inherently "related", but that one is not in any way more general than the other.

Useful constraints: SKOS:exactMatch

Union List of Artist Names - Netscape

File Edit View Go Communicator Help

New Search

GETTY VOCABULARY PROGRAM

calendar of events
return home

Getty Research Institute

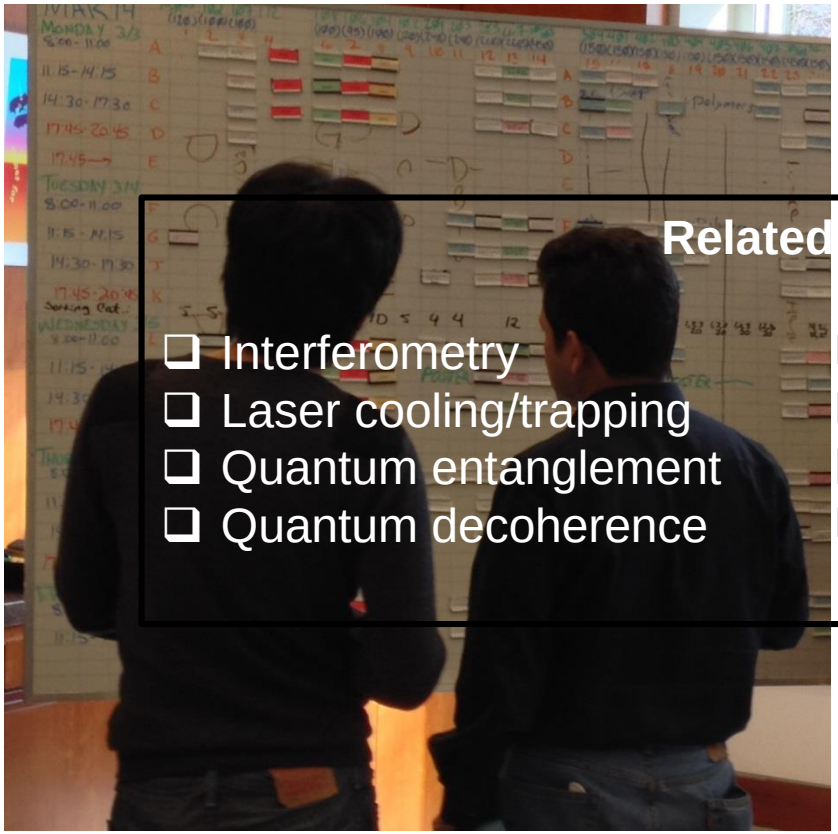
ULAN Name Record

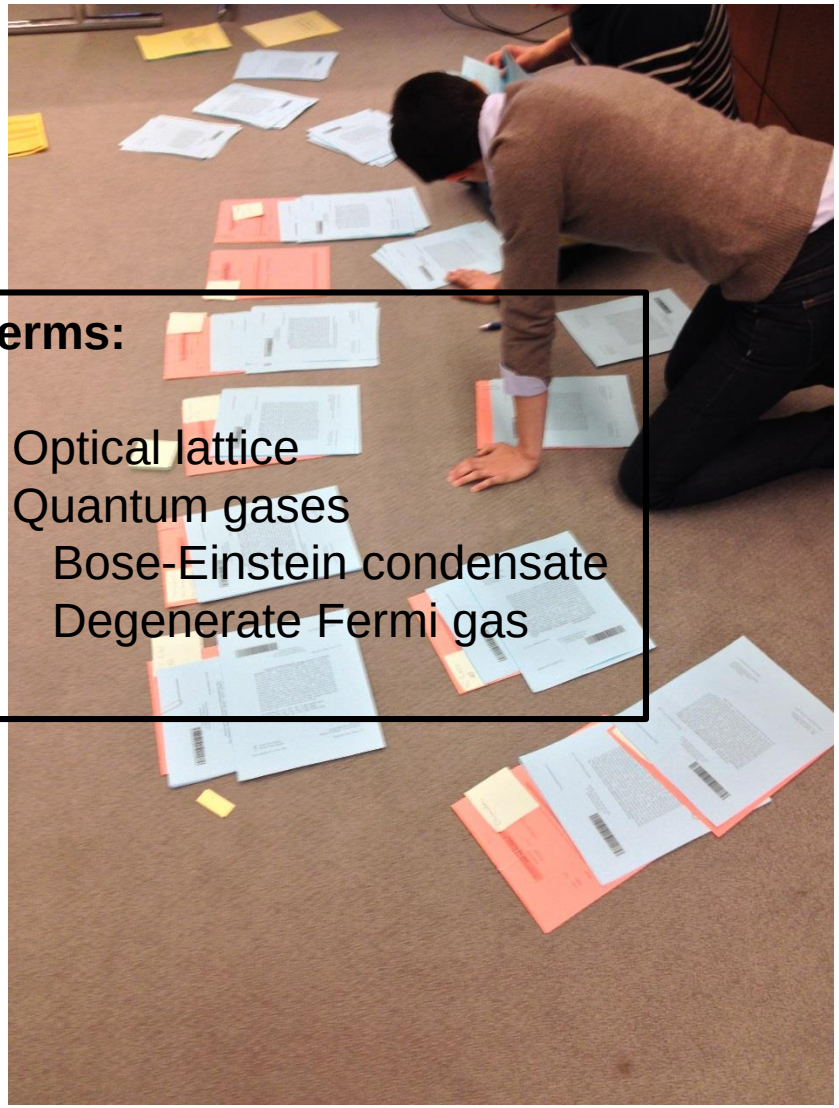
[16023]

Rembrandt Harmensz van Rijn	[PR,VP]
(Dutch artist, 1606-1669)	[AV,WC,WI]
(Dutch painter and printmaker, 1606-1669)	[GC]
(Dutch painter, 1606-1669)	[PR]
(Dutch painter, draftsman and etcher, 1606-1669)	[VP]
(Dutch painter, printmaker, 1606-1669)	[BA]
(Dutch, 1606-1669)	[JG]
After Rembrandt	[PR]
from Rembrandt	[PR]
Paul Rembran	[PR]
Paul Rembrandt	[PR]
Rambrandt	[PR]
Rebranch	[PR]
Reimbrant	[PR]
Rem.	[PR]
Rembrach'	[PR]
Rembradt	[PR]
Rembrand	[PR]
Rembrande	[PR]
Rembrands	[PR]
Rembrandt	[GC,PR]
Rembrandt Harmenszoon van Rijn	[AV,PR]
Rembrandt Harmensz Van Rijn	[WI]
Rembrandt Harmensz. van Rijn	[BA,GC,PR]
Rembrandt Harmensz. van Rijn or Rhijn	[WC]
Rembrandt Hermanszoon van Rijn	[PR]
Rembrandt Hermansz van Rijn	[PR]
Rembrandt Olandese	[PR]
Rembrandt (school of)	[PR]
Rembrandt Van Rhyn	[PR]
Rembrandt van Rijn	[GC,JG,PR]

Document: Done

Useful constraints: SKOS:related

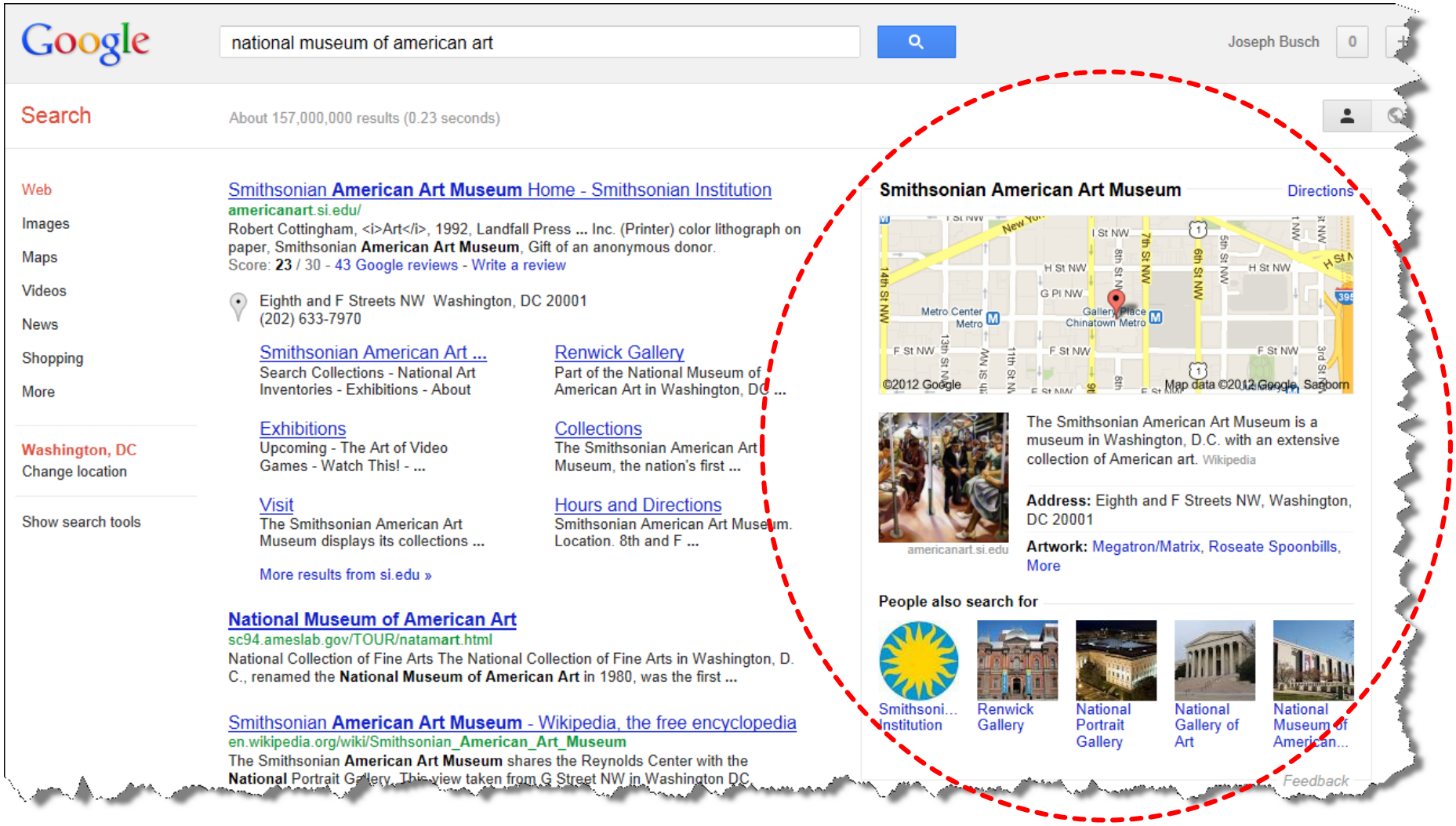




Related Terms:

- ❑ Interferometry
- ❑ Laser cooling/trapping
- ❑ Quantum entanglement
- ❑ Quantum decoherence
- ❑ Optical lattice
- ❑ Quantum gases
- ☑ Bose-Einstein condensate
- ❑ Degenerate Fermi gas

Web classification application: Google knowledge graph



What should be considered GCS today?

- Crowd-sourced classification
  - Wikipedia
  - DBpedia
  - Linked Open Data (LOD)

Selected Wikipedia top level trees

- Main topic classifications (8)
  - Abstraction (22)
  - Applied sciences (20)
  - Arts (48)
  - Belief (18)
  - Culture (30)
  - Events (11)
  - Geography (66)
  - History (67)
  - Mathematics (33)
  - Natural sciences (17)
  - Nature (8)
  - Philosophy (297)
  - Religion (41)
  - Science (141)
  - Social sciences (122)
  - Society (59)
  - Technology (116)
  - Thought (44)

- Quantum mechanics (179)
  - Atomic physics (107)
  - Density functional theory (17)
  - Foundational quantum physics (31)
  - Hilbert space (17)
  - Interpretations of Quantum Mechanics (10)
  - Mathematical quantization (14)
  - Nuclear physics (141)
  - Pauli exclusion principle (4)
  - Perturbation theory (11)
  - Quantum chemistry (101)
  - Quantum electronics (19)
  - Quantum field theory (257)
  - Quantum information science (64)
  - Quantum measurement (59)
  - Quantum models (9)
  - Quantum optics (26)
  - Quantum physics stubs (0)
  - Rotational symmetry (47)

References

- DBpedia. (2014, July 29). *DBpedia About.* Retrieved from DBpedia: http://wiki.dbpedia.org/About.
- Facebook. (n.d.). *Open Graph Overview.* Retrieved from Facebook developers: https://developers.facebook.com/docs/opengraph/overview/.
- Google. (2014, August 14). *Knowledge Graph.* Retrieved from Inside Search Features: http://www.google.com/insidesearch/features/search/knowledge.html.
- Linked Data.org. (n.d.). *Linked Data - Connect Distributed Data Across the Web.* Retrieved from Linked Data: http://linkeddata.org/.
- Thurner, T. (2014, April 2). *American Physical Society Taxonomy – Case Study.* Retrieved from Semantic Puzzle: http://blog.semantic-web.at/2014/04/02/joseph-a-busch-case-study-on-an-american-physical-societys-taxonomy/.
- W3C Working Group. (2009, August 18). *SKOS Simple Knowledge Organization System Primer.* Retrieved from W3C Working Group Note: http://www.w3.org/TR/skos-primer/#secrelationshipslabels.
- Wikipedia. (2013, April 24). *Portal:Contents/Categories.* Retrieved from Wikipedia: http://en.wikipedia.org/wiki/Portal:Contents/Categories.

Questions?

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