

# THE SEMANTIC WEB

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**L**ate in June, knowledge organisation systems expert **MARCIA ZENG** presented a lecture at the Australian National University Library on 'Libraries in the Semantic Web'. INCITE reports.

Dr Marcia Zeng holds a PhD from the School of Information Sciences at the University of Pittsburgh and she also earned an MA from Wuhan University in China. Her research focuses on digital organisation systems and explores the potential of Linked Data, metadata and markup language, database quality control, multilingual information processing, indexing systems and software, digital libraries for cultural objects and knowledge organisation systems such as thesaurus, taxonomy and ontology.

In addition to chairing and serving on committees linked to organisations such as the International Federation of Library Associations and Institutions and the International Organization for Standardization, Dr Zeng has published over 80 scholarly works, including five books. Her recent presentation at the ANU Library is one of over 200 speeches she has delivered at international conferences.

In her presentation, Dr Zeng spoke about what she called the 'second generation of the Web', as we move towards an increasingly collaborative, expansive data network known as the Semantic Web. The function of the Semantic Web is to eliminate barriers between data networks worldwide to achieve a global, unending network of linked and accessible information. The Semantic Web is achieved through adhering to a set of standards provided by the World Wide Web Consortium (W3C), which would standardise all data collections and allow for unconstrained access and collaboration, an invaluable function for scientific and social researchers. Tim Berners-Lee, who coined the term Semantic Web, defines it as a web of data that can not only be used by researchers, librarians and students, but also by machines. According to W3C, the Semantic Web 'allows a person, or a machine, to move through an unending set of databases which are not connected by wires but by being about the same thing'.

Dr Zeng addressed questions of how we can learn to utilise this Linked Data system and adapt to a changing digital data environment. She urged librarians to use increasingly collaborative data systems to go beyond the library catalogue, which is usually thought of as the ending point when it comes to finding information, and instead start thinking of it as a starting point and going further to track data and information by effectively using the library's metadata services based on Resource Description Framework, or RDF, which are the standardising measures put in place to allow for the Semantic Web to spread further and access more data.

Using AGRIS, one of the databases that adheres to the W3C's RDF standard, Dr Zeng demonstrated that one online scientific article about the weight-length relations of



*Professor Marcia Zeng, Dr Ying-Hsang Liu and Roxanne Missingham*

tuna automatically generated a host of linked bibliographic information, sourcing data from the World Bank to show areas of the world that have a high rate of threatened fish species, another map showing the distribution of one of the species involved from the Global Biodiversity Information Facility, other articles from the journal *Nature* that related to fish biodiversity, and a list of keywords in the article that could be used to further extend and focus on desired information. Dr Zeng went showed how online data tools can also be used to identify and extract more data from hidden access points on webpages that would usually go unnoticed.

Dr Zeng encouraged librarians and researchers to embrace the new and changing concepts of the Semantic Web in order to engage with digital technologies that will provide access to a vast, exciting and invaluable web of knowledge and learning.

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