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- ⁵ Reference, Access, and Outreach Section, "Teaching with Primary Sources Bibliography," <http://www2.archivists.org/groups/reference-access-and-outreach-section/teaching-with-primary-sources-bibliography>.
- ⁶ Eleanor Mitchell, Peggy Seiden, and Suzy Taraba, eds., *Past or Portal? Enhancing Undergraduate Learning through Special Collections and Archives* (Chicago: Association of College and Research Libraries, 2012); and Anne Bahde, Heather Smedberg, and Mattie Taormina, *Using Primary Sources: Hands-on Instructional Exercises*, (Santa Barbara, Calif.: Libraries Unlimited, 2014).
- ⁷ Common Core State Standards Initiative, <http://www.corestandards.org>.
- ⁸ Association of College and Research Libraries, *Framework for Information Literacy for Higher Education*, <http://www.ala.org/acrl/standards/ilframework>.
- ⁹ Drexel Legacy Center, "Doctor or Doctress?" <http://doctordoctress.org/>.
- ¹⁰ "Teaching with Primary Sources Unconference and Workshops—Wed., August 3, 2016," <http://teachwithstuff.org/tps-unconference-2016aug-atlanta>.

Building Trust in Information: Perspectives on the Frontiers of Provenance

Edited by Victoria L. Lemieux. Cham, Switzerland: Springer, 2016. xvii, 163 pp.
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Technology and the Internet now permeate all aspects of human society. Our individual and collective willingness to use and leverage technology in every possible situation implies a high degree of trust in digital information and our ever-evolving technological infrastructure. But is the technology actually trustworthy? Is the information actually reliable? These questions are at the heart of the InterPARES Trust (ITrust), a multinational and interdisciplinary research project that explores "issues concerning digital records and data entrusted to the Internet."¹ ITrust is based at the Centre for the International Study of Contemporary Records and Archives at the University of British Columbia's School of Library, Archival and Information Studies.

Building Trust in Information presents the results of an interdisciplinary workshop on provenance organized by ITrust as part of its third International Symposium held at the World Bank Archives Group in May 2015. Fifteen participants from the United States, Canada, Australia, the United Kingdom, and Italy attended the workshop. The idea for such a workshop arose from an October 2014 NATO Specialist Workshop on Distributed Data Analytics for Combating Weapons of Mass Destruction held in Lorton, Virginia. There, participants noted that "organizations are increasingly dependent on information stored

and processed by distributed, heterogeneous systems” (p. vii), and that, in these complex information environments, individuals must know how information is derived (i.e., its provenance) to determine its trustworthiness and authenticity and to make decisions based on it. It also emerged that, in many cases, diverse fields concerned with the conceptualization and use of provenance information “worked without knowledge of the theories, research, and practice of the other fields” (p. vii).

This led to the idea to organize a workshop to “bring together a group of researchers and practitioners from several different domains to form an interdisciplinary and multidisciplinary understanding of provenance” (p. vii). The workshop proceedings are published as part of the multidisciplinary *Springer Proceedings in Business and Economics* series, which features print and electronic volumes that seek to bring “the most current research presented at conferences and workshops to a global readership.”² *Building Trust in Information* is the first volume in the series to be rooted in archival science. The volume is edited by Victoria Lemieux, associate professor at the School of Library, Archival, and Information Studies at the University of British Columbia (UBC) and co-investigator with the ITrust Team North America. Lemieux also leads Blockchain@UBC, a collaborative and interdisciplinary research cluster focusing on blockchain technology.

The volume is organized into five parts. The first part presents Lemieux’s ambitious and successful effort to synthesize the concepts presented at the ITrust provenance workshop. Lemieux’s introductory essay, written with members of the imProvenance Group, is comprehensive and quite lengthy, but it provides an important foundation for the rest of the essays. Most of the other contributions are between nine and eleven pages long and are, on the whole, brief summaries of a topic.

The second part includes three essays that provide archival perspectives on the principle of provenance. Adrian Cunningham’s essay on Peter J. Scott and the Australian “series system” is one of the strongest contributions to the volume. Cunningham’s essay explores how the “series system,” which was at the frontiers of provenance when Scott introduced the idea in the 1960s, has had a major influence on national and international archival description standards. The essay should quickly become the preferred article for archival educators and students seeking a concise and authoritative introduction to the subject. Taken together, Giovanni Michetti’s and Kenneth Thibodeau’s essays provide a general overview of archival perspectives on provenance and underpin the value of exploring the frontiers of provenance. Thibodeau, for example, notes that “archival thinking and practice are constrained by the two overarching and complementary concepts of provenance and original order” and that, although “there are substantial disagreements about what the two concepts entail, there seems to be universal acceptance of their fundamental importance” (p. 70).

The third part of *Building Trust in Information* includes two essays that address provenance from information science perspectives. Lucie C. Burgess's essay reviews the role and implementation of provenance in the Bodleian Digital Library. Burgess acknowledges that, in digital libraries, provenance is "couched in terms of history of ownership rather than wider definitions of provenance relating to data or methodology" (p. 89) that are the focus of *Building Trust in Information*. She provides a fascinating case study of how provenance information has been handled in various data modeling initiatives at the Bodleian. For example, Burgess explains how the data model for the Oxford University Research Archive (ORA) incorporates the PROV ontology (PROV-O) so that scholarly output at the university can be "associated with provenance information such as people, organizations, time, and location" (p. 86). PROV is a suite of twelve recommendations and notes released in 2013 by the World Wide Web Consortium (W3C) Provenance Working Group. PROV is introduced in Paolo Missier's essay found in the fourth section of *Building Trust in Information*. Joseph T. Tennis examines the role of provenance in the construction and maintenance of indexing languages. Tennis argues that, although practitioners in the field of knowledge organization "do not talk about provenance," indexers are aware that "revisions of indexing languages could change the context of a concept" and that, "with the change in context, the concept may change its meaning" (p. 94). This allows the origins and histories of concepts to be traced through the revisions of indexing languages.

Part 4 discusses provenance from computer science perspectives. Bertram Ludäscher reviews the concepts of "prospective provenance" and "retrospective provenance" in scientific workflows and provides a highly technical description of database provenance, all rooted in the fundamental need for transparency and reproducibility in science. Paolo Missier's essay provides a more general overview of provenance data modeling with particular focus on the W3C PROV specifications, which is also addressed in Lemieux's introductory essay and Burgess's essay on provenance in digital libraries. However, Missier's contribution is noteworthy as an accessible overview of the PROV "family of specifications" that "aims to define a *generic* data model for provenance that can be extended, in a principled way, to suit many application areas" (p. 127). Missier's essay should help generate wider interest in PROV among the archival and library communities.

The fifth and final section includes two essays from the field of visual analytics. Margaret Varga and Caroline Varga review the role of "data provenance," "analytical provenance," and "reasoning provenance" in visual analytics and explain that reasoning provenance, which is "concerned with how and why analysts arrive at their conclusions/decisions," is "the most challenging to identify, make explicit and capture" (p. 142). Ashley Wheat, Simon Attfield, and Robert Fields expand on the concept of analytical provenance, which they describe as

a “historical account of reasoning” that “provides a description of the actions performed and techniques used at a given point in an analysis” (p. 151).

A major omission in *Building Trust in Information* is the lack of any socio-cultural perspectives on provenance. A contribution specifically focused on, for example, how organizations define, recognize, and account for important information such as societal provenance or cultural provenance would enhance the volume. Perspectives and definitions from legal fields such as eDiscovery, cyber-crime, and computer forensics, where trustworthy information about the “chain of custody” of evidence is paramount, would also augment the volume. Furthermore, the book does not incorporate perspectives or case studies from practicing records managers or archivists working on digital preservation. Archivists have recently been saturated with information on digital preservation, but this omission from a workshop focused on trustworthiness of information seems odd given that archivists and data scientists have standardized the means by which a repository can be audited and even certified as “trustworthy.”

Nevertheless, some interesting threads connect the essays. Unfamiliar terms introduced throughout the volume, such as “analytical provenance” and “prospective provenance,” provide interesting and new perspectives from which the “substantial disagreements” about archival provenance can be considered. Contributions by Lemieux, Burgess, Ludäscher, and Missier each discuss the W3C PROV standard and, taken together, present a comprehensive and multifaceted examination of a standard that is rarely discussed in archives. Readers interested in PROV are encouraged to begin with Missier’s essay. The volume does not include a section with legal perspectives, but themes of trust and reliability appear so much throughout the volume that they unify otherwise disparate perspectives on information. Reproducibility of scientific processes is another theme that reappears throughout the volume.

The slim hardcover edition provides an elegant reading experience and visually demonstrates Lemieux’s great attention to clarity and brevity. The ebook edition should theoretically make the workshop proceedings more usable in educational settings, where the volume would be most useful, but one may have to pay significantly more for unlimited user access for the ebook to be usable in a classroom. I strongly encourage readers to purchase a hardcover edition in lieu of the ebook.

Building Trust in Information does not present perspectives that represent a radical departure from conventional views on archival provenance; in fact, the purpose of the volume is to understand how “traditional definitions and applications” of provenance may be “enriched and expanded via an interdisciplinary and multidisciplinary synthesis” (back cover). But Lemieux has edited a collection of essays that somehow manages to simultaneously depart from conventions and enrich traditions. If anything, the volume provides some reassurance for

archivists that researchers and practitioners in other disciplines are equally concerned with the trustworthiness and authenticity of information with which they work. But Lemieux and the other authors whose work is featured in *Building Trust in Information* also show that archivists can learn a great deal about their own craft by examining ways in which other disciplines work to preserve information about how data is created, selected, analyzed, and presented.

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¹ For more information, visit <https://interparestrust.org>.

² For more information, visit <http://www.springer.com/series/11960>.

Preserving Family Recipes: How to Save and Celebrate Your Food Traditions

By Valerie J. Frey. Athens, Ga.: University of Georgia Press, 2015. 320 pp. Softcover. \$26.95. ISBN 978-0-8203-3063-1.

If you are personally interested in preserving culinary history, you may want to consider reading Valerie J. Frey's *Preserving Family Recipes: How to Save and Celebrate Your Food Traditions*. If, like me, you are an archivist who has both personal and professional interests in collecting and sharing the culinary histories of families (and, by extension, family histories), you need to read this book. Through a blend of personal experiences, storytelling, and practical advice, Frey has written a book intended for the family cook, historian, genealogist, or some combination of the three, but it has some important takeaways for information professionals too. Frey brings her background as an archivist, educational consultant, and writer to the pages of this book. Her knowledge as an archivist gives her insight into the challenges of researching and preserving food history. Her experience teaching oral history workshops lends itself to advice for would-be family food historians on interviewing and recording family and friends. Her skill as a writer turns what could have been a straightforward book of advice into an invitation to join her on a journey of culinary discovery through her own family's history while giving the reader a chance to learn from her experiences. Equally as important, Frey has a passion for food and foodways that permeates the book.