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<b>Title</b>	:	<b>New Shades of Grey: The Emergence of E-Science, Scientific Data and Challenges for Research Libraries</b>
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E-Science is among the latest forms of literature that has largely been born in the public domain and funded with federal dollars to explore large scale computing potential for the challenges of basic research in the physical sciences, life sciences, medical and clinical sciences, engineering, information sciences and technology, and most recently as it influences public policy. This emergence of eScience demonstrates that the data poses new challenges in its needs to find a home that is safe, open for repurposing, reuse and additional applications. Data can be classified in many ways utilizing a range of appropriate metadata descriptors to enhance its utility for different and future applications. Statisticians and scientists have been concerned about how this data can be retained, archived, preserved and entered into collections that honor its safekeeping and potential for future manipulation. Unlike the information products that are derived from its applications, data is often raw, formulaic, rough, distributed, numeric, tabular and/or loose. Computer scientists and technologists have explored grid computing and now cloud computing to realize its utility as new components in E-Science. This new frontier is among the latest efforts to fuse transdisciplinary, collaborative, distributed pillars of science into a mix of experiments, theories, models, simulations, observations and correlations, which I will demonstrate are new forms of grey literature. The full lifespan of eScience demands that it configures the data curation and preservation aspects and extends the lifetime of grey literature to new challenges, which print and text never experienced. How libraries will cooperate with scientific communities in realizing this new potential and take responsibility for this aspect of grey literature is most curious in this era that observes a fast track maturation of eRepositories around the globe, many external competing demands while trying to effortlessly anticipate and respond to challenges in scholarly communication, open access and the public's right to know.

This paper addresses these and related issues of eScience and science librarianship, within the realm of grey literature at a time of institutional and scientific competitiveness and economic uncertainty.

### **Bionote**

**Julia Gelfand** has been a librarian with the University of California, Irvine Libraries since 1981. She has been tracking the grey literature movement since the late 1980s and has participated in all of the previous GL conferences and has published and presented widely on different topics in grey literature. Her particular interests are in scholarly communications, electronic publishing, collection development, bibliography of science and technology, and she thinks that with more emphasis on networking and digital libraries, Grey Literature has a very interesting future. She is currently the chair of the IFLA Science & Technology Section and vice-chair/chair-elect of the ALA ACRL Science & Technology Section.