

Preface

This volume focuses on cyber-archaeology in the Middle East, particularly the Seventh World Archaeology Congress (WAC-7), held along the beautiful shores of the Dead Sea in Jordan between 14 and 18 January 2013. The meetings took place at the palatial King Hussein Bin Talal Convention Centre at the Dead Sea in the most relaxed, efficient, and hospitable context that can only occur in Jordan. The general theme of WAC-7 was “Preservation and Heritage Identities in Times of Conflict.” WAC-7 happened before the advent of the Islamic State (ISIS) targeting of UNESCO World Heritage Sites and the recent destruction of so many archaeological and cultural heritage sites in Iraq, Syria, and other parts of the Arab world. The chapters in this volume have evolved since 2013 and include papers that were not presented at the WAC-7 conference. However, they all reflect a concern with the preservation of Middle Eastern archaeological sites and the application of the digital data capture, curation, analysis, and dissemination tools of cyber-archaeology — the marriage of archaeology, computer science, engineering, and the natural sciences (Levy 2013). My own time spent on preparing this publication has been a result of a University of California Office of the President (UCOP) Catalyst grant that deals with “At-Risk World Heritage and the Digital Humanities,” for which I serve as the principal investigator. This UCOP Catalyst project focuses specifically on at-risk archaeological sites in the Middle East. Unfortunately, this is an ever-evolving problem for our region, and all the contributors to this volume are using cyber-archaeology not only to preserve Middle East cultural heritage but also for scientific storytelling to create grand narratives of culture change in the region.

At the WAC-7 conference, the organizers asked those of us who work in Jordan to highlight the scientific methods we develop and employ in that country. In our WAC-7 sessions, there were a number of papers from the University of California, San Diego, Edom Lowlands Regional Archaeology Project (ELRAP), which I co-direct with my friend and colleague Mohammad Najjar. Over the years since WAC-7, we published those papers in a wide range of publications, including peer-reviewed journals (Levy et al. 2014a; Ben-Yosef and Levy 2014; Gidding et al. 2014; Howland et al. 2014a, 2014b; Jones et al. 2014; Knabb et al. 2014; Levy 2014; Levy et al. 2014c; Petrovic et al. 2014; Savage and Levy 2014; Smith and Levy 2014; Smith et al. 2014; Vincent

et al. 2014a, 2014b) and a large two-volume study (Levy et al. 2014b) of Iron Age metal production and social evolution in Jordan's Faynan region. Thus, those WAC-7 papers are not presented in this volume as they have been published elsewhere.

It is important to highlight that our UC San Diego–Department of Antiquities of Jordan project in Faynan began in 1997 as an analogue project with excavations at the WFD 40 Iron Age Cemetery and Early Bronze I WFD 4 sites (Levy et al. 1999). By 1998, we carried out an archaeological survey along the Wadi Fidan where we began to implement some aspects of digital recording linked to the use of a Total Station (Levy et al. 2001a). However, it was in the fall of 1999 (Levy et al. 2001b) when our team went totally “paperless” and relied entirely on a digital recording system for the excavation of the Pre-Pottery Neolithic site at Tell Tifdan (WFD 001) and the Early Bronze Age III–IV copper production site at Khirbat Hamra Ifdan (Levy et al. 2002). The transition from analogue archaeology to digital archaeology was painful to say the least. There were sleepless nights and endless troubleshooting. However, the system worked and provided the basis for what has become a seamless digital data recording, curation, and dissemination excavation program. I did not know it then in 1999, but by “going digital” and using a geo-spatial database founded on the recording of X, Y, and Z (elevation) coordinates for every artifact and piece of data recorded in our Faynan region excavations, our research was “pre-adapted” to the world of scientific visualization at Qualcomm Institute, California Institute for Telecommunications and Information Technology (Calit2), University of California–San Diego (<http://calit2.net>). This has led to our UC San Diego team playing a significant role in the development of cyber-archaeology on the world scene (Forte 2008, 2010; Forte et al. 2012, 2015; Levy 2013, 2014; Levy et al. 2010, 2012, 2013; Lercari et al. 2016), as highlighted by this WAC-7 publication.

WAC-7's Academic Secretary, Talal Akasheh, and WAC's International Academic Secretary, Claire Smith, are to be congratulated for the excellent organization of the conference that welcomed participants from all the countries of the Middle East and world community. I would like to personally thank Anne Pyburn and Arwa Badran, the editors of the WAC-7 publication series, for their support in publishing this volume. Special thanks go to Teresa M. Krauss, the senior editor for Social Sciences at Springer in New York, for all her advice and help during the production of this book. I would also like to thank my colleagues from Calit2's Qualcomm Institute at UC San Diego for their support in the activities of the Center for Cyber-Archaeology and Sustainability: Ramesh Rao, Larry Smarr, Tom DeFanti, Margie Burton, Jurgen Schulze, Falko Kuester, Joe Keefe, Greg Dawe, Lisa Tauxe, Steve Savage, Philip Weber, and Chris McFarland. Special thanks also go to my former and current graduate students who have helped to develop cyber-archaeology in Jordan: Adolfo Muniz, Margie Burton, Yoav Arbel, Neil Smith, Marc Beherec, Erez Ben-Yosef, Kyle Knabb, Aaron Gidding, Kathleen Bennallack, Matt Vincent, Sowparnika Balaswaminathan, Matt Howland, Ian Jones (especially with regard to this volume), Brady Liss, Craig Smitheram, and Tony Tamberino. Finally, I am grateful to Mohammad Najjar and Alina Levy for making cyber-archaeology possible in Jordan and at home.

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