Historical GIS began to achieve critical mass in the late 1990s and early 2000s with such major projects as the Great Britain Historical GIS (Gregory & Southall, 1998), and was made more visible soon thereafter largely through a book and a special journal issue edited by Anne Kelly Knowles (2000, 2002). Several books (Bodenhamer et al., 2010b; Gregory, 2003, 2007; Knowles, 2008b) and special issues (Bailey & Schick, 2009; Ell & Bodenhamer, 2009; Ell & Gregory, 2001; Knowles, 2005) later, we can now in many respects say that historical GIS has come of age. While large, high-profile projects continue to be of tremendous importance in this “interdisciplinary subfield” (Knowles, 2008a, p. 7), smaller projects carried out by individuals and small teams appear in a wide range of publications, in which the use of historical GIS is discussed in a matter-of-fact manner, secondary to the research focus to a greater or lesser degree (Bain & Bush, 2004; Colwell-Chanthaphonh & Hill, 2004; Dobbs, 2009; Giordano & Gelpke, 2003; Haase et al., 2007; Knowles & Healey, 2006; Orford et al., 2002; Raitz et al., 2010; Schlichting et al., 2006; Towers, 2010; Tuckel et al., 2006). One might hazard the observation that the need for special issues to showcase historical GIS projects has passed, particularly after the advent in 2007 of International Journal of Humanities and Arts Computing, which includes historical GIS in its purview (Robey, 2007).

And yet, this preface introduces a new special issue on historical GIS and related geospatial technologies. Why another special issue, given our observation above? There are several ways in which this issue differs from previous special issues, and these differences help define a new perspective on the ways that historical GIS is being used by people “on the ground,” if you will.

The emphasis in most previous special issues has been on the disciplines of history or geography, or the “collision” of the two (Bailey & Schick, 2009), and on academic research or public spatial history or infrastructure projects. In contrast, this special issue, as one might suspect from the hosting journal’s title, is focused on applied research. Many readers may find the idea of applied historical GIS difficult to conceptualize. In our call for papers, we defined this idea as “contributing knowledge or understanding with the potential to inform practical decision-making activities (…broadly interpreted) in today’s world” and suggested that “work on the past might be considered to have practical applications in the present day if it:
• Introduces new understandings of present landscapes for planners and preservationists but also for the general public
• Alters understandings of key events, landscape features, or places
• Makes visible the previously hidden roles or experiences of marginalized groups
• Produces new pedagogical possibilities
• Enhances spatially oriented access to sources from the past.”

The papers included in this volume, as a body, meet several of these criteria, and indeed some of the individual papers meet several of them at once.

The range of authors from whom we received submissions and expressions of interest indicates to us that a vibrant diversity of work on the past is being done with GIS and related technologies or information structures. Interestingly, very little of it that would fit in our “applied” niche seems to be coming from academic historians. This is perhaps not surprising. Not even taking into account the shift of focus that applied work involves, numerous authors have articulated the difficulties historians may have in adopting GIS (Bodenhamer, 2008, 2010; Bodenhamer et al., 2010a; Boonstra, 2009; Jessop, 2008; Kemp, 2009; Owens, 2007), even though the benefits of doing so for some kinds of historical work have been well established (Bodenhamer, 2008, 2010; Bodenhamer et al., 2010a; Churchill & Hillier, 2008; Gregory & Ell, 2007; Knowles, 2008a). Our point, however, is more that the potential breakthroughs enabled by the use of GIS to study the past are being embraced across a diverse population of investigators, in and out of the academy and with many perspectives on how the past can be studied. We celebrate this diversity—even while hoping more historians will join in. To take this a step further, our experiences with this issue and with establishing the HGIS Carolina working group at UNC-Chapel Hill (http://www.unc.edu/hgis/) lead us to suggest that perhaps it is time to call historical GIS not just interdisciplinary, not just a “subfield of history” (to complete the Knowles quote above, from 2008a, p. 7), not just a “young subdiscipline” (Bodenhamer, 2010, p. 22), but an interdisciplinary3 in its own right. Similarly to the way geography is often visualized with a Venn diagram in which the subfields of geography are formed at the intersection of geography with numerous other disciplines, historical GIS can be conceptualized as the “space between” various disciplines in which the past is studied. We propose that it is the maturing of historical GIS that makes this conceptualization possible, in that the researcher’s mere choice to employ GIS no longer has to be explained or justified to the reader. In the current special issue, the authors have one foot in their own disciplines and one in the interdisciplinary that is historical GIS.

A third characteristic of this special issue is a broad definition of “geospatial.” IJAGR extends its mission to applied research using geographic information science and technology, which it defines as “geospatial statistics, global positioning systems, geographic information systems, remote sensing, etc.” (Albert, 2010, p. ii). The geospatial approaches represented in this volume are both quantitative and qualitative, and range from simulation modeling to public memory to dasymetric mapping to virtual map rooms for displaying historical maps in addition to more expected kinds of spatial analysis. While Knowles (2008a, p. 2) suggests that historical GIS is especially useful for working with “systematically collected information linked to known geographical units and locations,” the data sources and techniques used here only partly fall into that category.

Lastly, we see the intersection of historical GIS with information science (IS) as a key element in our Venn diagram. Both independent and large-scale research efforts incorporating map representations and complex analysis are increasingly being facilitated with the use of digital tools derived from IS (CLIR, 2009). Together, IS practitioners and historical researchers studying aspects of geography have been exploring and developing best practices to enable locating (Buckland & Lancaster, 2004), shared distribution (ICTs) (Elliot & Gillies, 2009), long term reusability (Tooby, 2007;
Zorich, 2003), and preservation (McGarva et al., 2009; Tooby, 2007) of this growing volume of historical geographic digital scholarship. These concerns are frequently discussed under the rubric of digital humanities (Borgman, 2009; Frischer et al., 2006), defined by Nerbonne (2005, p. 33) as “a federation of disciplines and subdisciplines, one in which practitioners face enough common problems to warrant collaboration.”

Owens (2007) has argued for a “geographically-integrated history.” What we are seeing in working with this issue is the integration not only of geographic perspectives into history, or of historical perspectives into GIS, but of the advantages historical GIS confers into a wider range of endeavors. In the space of interdiscipline, this integration transforms the work of individual disciplines to stimulate substantive breakthroughs. In the case of several of the papers in this volume, reviewers expressed enthusiasm about the new knowledge being created and the ways that knowledge would impact their respective disciplines or subdisciplines.

A case in point is the work of Brister, Hane, and Korfmacher. This interdisciplinary team (philosophy, biology, and environmental science) demonstrates the utility of historical GIS in reconstructing ecologies of the past. More specifically, these three scholars use a series of surveyors’ records from the early 19th century, when what is known as the Connecticut Tract in western New York was laid out in 100-acre lots, to map tree species communities, soil conditions, and evidence of wetland areas. Not surprisingly, they found considerable change, but also some continuity. They argue that their work is applied because better restoration and management plans, understanding of long term causes of change such as climate, and understanding of natural and cultural causes of ecosystem variability all result from historical ecology reconstruction.

The next two papers also investigate communities, but of people rather than of trees. Coincidentally, the two papers are focused on nearby locations (Kentucky and West Virginia, USA). The work of Algeo, Epperson, and Brunt, a geographer and two geoscientists respectively, on Mammoth Cave National Park in Kentucky is satisfying on multiple fronts. At one level, this project looks at the politics of park creation and the way in which a settled rural landscape was transformed into a “wilderness” through deliberate government action. At another level it employs microscale historical geography techniques (including GIS) and a variety of sources to match historical people (and thus indirectly their descendants) to their lost homes on park lands. Lastly, the team has created a public participation historical GIS that helps people find their families’ past places, and promotes a growing body of the materials of memory through public contributions to the GIS. Thus the work has a direct effect on a certain population of people through the agency of public memory, and an indirect effect in that it uncovers a previously hidden history of settlement, dispossession, and social construction of wilderness.

Towers, a geographer with a wide range of interests, has, through his work on Appalachian communities in West Virginia, developed an innovative approach to historical dasymetric mapping. Dasymetric mapping is a method for representing population according to where people actually live, instead of assuming population values apply equally across a broad unit of area such as a census tract. Towers builds on his previously published work using both terrain analysis and historical map evidence to delineate the extents of historical communities. In the present paper, he lays out a methodology for dasymetric mapping that conforms to the cultural spaces of lived community rather than the lines of census geography which often cut through communities. Needless to say, the technique Towers introduces here has the potential to transform dasymetric mapping not only historically but in present landscapes as well.

The fourth paper in this volume represents a type of geospatial analysis that is seldom found among more humanities-oriented historical GIS projects. Dean, a geospatial scientist, has used Monte Carlo simulation to analyze potential viewsheds from the Japanese planes searching
for the American ships before the start of the Battle of Midway. His work incorporates a construction of viewshears that is quite different from that used, for instance, by Knowles in her work on what Lee could see at Gettysburg (Knowles, 2008c). Instead of the view being constrained by terrain, in Dean’s model it is constrained by a suite of factors such as distance, angle, speed of ship and plane, and the degree of autocorrelation in the cloud cover. The results of Dean’s project add to the body of understanding about the outcomes of Midway, and, as one reviewer points out, have relevance in the present military as well, in the sense that visually locating moving objects in the field is always a concern.

The paper by Norder and Carroll, both anthropologists, also employs Monte Carlo simulation, though for a different purpose and in conjunction with other types of spatial analysis. The paper examines indigenous rock art siring in the Lake of the Woods region of Canada, and compares actual locations of pictographs with the universe of similar locations which could have pictographs but don’t. Through a range of spatial and statistical techniques, perhaps most effectively least cost path analysis, they connect pictograph locations with probable routes of travel by the Indians of the area in the past (and in some cases the present). The work presented not only adds to the understanding of rock art and its purposes, but also has the potential to contribute to preservation of rock art at a time when social and climatic forces are hastening its deterioration or vandalization.

The sixth and final paper in this volume engages with a very different part of our hypothetical Venn diagram. Siabato, Fernández-Wyttenbach, and Bernabé-Poveda, all with GIS and land surveying backgrounds among other talents, present work at the intersection of humanities computing, information science, and historical cartography, in the form of a tool they have developed to enable researchers to view multiple early maps together in virtual geographic space. The Virtual Map Room does not store the digitised maps, but draws upon digital collections (georeferenced images and metadata) in libraries around the world. The VMR also incorporates some analysis tools. Developed in conjunction with major European research projects such as DynCoopNet, this tool has the potential to aid researchers broadly.

We think that these six papers exemplify historical GIS as interdisciplinary. Historical GIS, in our view and as demonstrated in these papers, consists of many ways to study the past and draws from the many disciplines that surround its “space between.” It is using the gamut of GIS techniques, and producing insights and understandings that can then be applied to the business of bettering environments, educations, lives.

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ENDNOTES

1 A number of published examples from the early 1990s suggest that GIS was being used by a few individuals to study the past before the term “historical GIS” was popularized, possibly even before 1990. See, for example, Mires (1993) and Schroeder (1995). Knowles (2008a, p. 8) also mentions examples from the early 1990s.

2 Boonstra (2009, p. 4) uses a similar phrase. He refers, however, to events within the academic discipline of history, and the
contribution of historical GIS to “a shift of interest toward geography” there. Thus his meaning differs from that posited in this essay.

Though it is difficult if not impossible to locate a simple definition for this term, it is clearly a noun and thus in marked contrast to “interdisciplinary” (see Stycos, 1989, p. vii, for a possible first use of the word). As such, the field of inquiry or practice so referenced is substantive, made up of constituent parts that come from other disciplines, but not “sub” to them. McCarty (1999) applied the term to humanities computing in a seminar on “Is humanities computing a discipline?”

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