

Preface

Over the past decade, the proliferation of e-technology, Internet-based data exchanges, and improved computing security has allowed the field of Health Information Systems & Informatics (HISI) to flourish and germinate an emergent body of theoretical frameworks, empirical research, and practitioner-based literature—all with the ultimate goal of improving HISI implementation, evaluation, and best practices while simultaneously enriching HISI policy formulation and the knowledge transfer processes. The active cross-pollination of ideas and fresh knowledge from various disciplines has gone beyond just healthcare computing, or even mobile and wireless networks, in bringing together various HISI sub-areas, from traditional hospital information systems to emerging patient-centered e-health and m-health. These efforts are already impacting the rapid growth and further development of a rich, expanding field.

Despite recent and continuing efforts among well-meaning researchers and practitioners to establishing HISI as a discipline, I still must repeat what I have noted in the inaugural issue of the *International Journal of Healthcare Information Systems & Informatics*, that is, the HISI field is still in its infancy, and much of the published work has previously been scattered in a myriad of disciplined-based outlets. Indeed, the evolving HISI discipline still lacks directing frameworks, reliable and well-tested measurement tools, and formalized research methodologies to guide future medical and health informatics researchers and practitioners. Accordingly, this series of compiled works serve to provide a focal point for key contributions in emerging HISI conceptualization, methodologies and applications that would further evolve the field, whether it is from the perspective of building relevant theories or applying and adapting rigorous and established methodologies to the field. Some of the works even suggest innovative strategies and models for improving HISI implementation

and best practices, while others attempt to concentrate on HISI evaluation, or policy formulation and knowledge transfer processes.

As a timely testament to the sheer diversity of conceptual, methodological, evaluative, and practical breakthroughs that eager researchers and practitioners are trying to cross-fertilize in HISI, the contributions within this volume may be sequenced into four interconnected sections. Section I, comprising Chapters I through III, provides a sampling of newer HISI theoretical development by identifying some of the knowledge gaps requiring further attention from current and future HISI researchers and practitioners. These chapters focus selectively on concepts and constructs awaiting theoretical development and policy formulation—concepts and constructs that will eventually define the different sub-areas of the emerging HISI discipline, including mobile health (M-Health), the acceptance and diffusion of clinical-based information and communications technology (ICT), and a HIPAA-compliant framework for detailing health web privacy and security policy. These chapters also illustrate how new questions specific to key HISI research areas may be conjured by highlighting some of the challenges faced when working in a rapidly emerging field. Section II, encompassing Chapters IV through XII, concentrates on various methodological approaches to, and applications of, extracting data empirically so that specific HISI research questions can be answered. The highlighted methodologies range from quantitative approaches, including rigorous statistical modeling, secondary data analysis, and survey-based instrumentation to more qualitative techniques, such as interviews and the use of cases to triangulation, which combines both qualitative and quantitative approaches. Section III, covering Chapters XIII through XVI, emphasizes the practicality of models in supporting HISI implementation, evaluation, and practices—for instance, the decentralization of a telemedicine infrastructure, the innovative application of e-technology for nurses, and the evaluation of a fuzzy ontology-based medical information system. Finally, Section IV, which includes Chapter XVII through Chapter XX, concludes the volume with a gleam of HISI policy and knowledge transfer processes.

Many young researchers neglect theory building when performing a literature review, and the majority of new researchers fail to appreciate the necessity of closing the “gaps” that are currently challenging the growth of an emerging field. In relation to identifying “gaps” and HISI theoretical development, Chapter I of this volume illustrates how an important “gap” in the HISI area can be used to generate a new perspective in HISI research. In “Designing a M-Health Framework for Conceptualizing Mobile Health,” Olla and Tan adopt a structured and discipline-based theoretical approach to breaking down and compartmentalizing the mobile health (M-Health) systems into principal dimensions, based on content analysis of the extant literature. As noted, these dimensions include communication infrastructure, application purpose, device type, data display and application domain. Communication infrastructure refers to the mobile telecommunication technologies and networks. Application purpose identifies the goal and objectives for the application of a M-Health system, such as e-prescription, clinical data exchange, decision support, or

various other purposes. Device type relates to the type of device being used, such as tablet PCs, portable data assistants (PDAs), sensors, or other devices. Data display describes how the data will be presented and transmitted to the user, for example, through a series of images, emails, and/or textual data. Application domain categorizes the domain of mobile technology application, and, more specifically, the defined area, in which the m-health system will be implemented, such as rural community health, wireless home healthcare, or some other domain. Altogether, the M-Health Reference Model serves as a guide to healthcare stakeholders and m-health system implementers in identifying and understanding the technological infrastructure, business requirements, and operational needs of the m-health systems.

Although information and communications technology (ICT) is being used in the United Kingdom's National Health Services (NHS) to improve medical delivery, it has not been sufficiently tested and applied to improve our understanding of the factors motivating health organizational behavioral changes in terms of accepting HISI applications and use. In Osbourne-Clarke's Chapter II, "Factors Motivating the Acceptance of New Information and Communication Technologies in the UK Healthcare," three popular theoretical models, namely, the technology acceptance model (TAM), Rogers' diffusion of innovation theory (IDT), and the Triandis theory of interpersonal behavior (TIB), were contrasted and integrated as a means of understanding effective ways that technology can be employed to support telemedicine initiatives. ICT—as a basis for telemedicine to reduce existing communication barriers and initiate new forms of information exchange between medical professionals and patients—is conceptualized and evaluated. An overview of the UK healthcare system and its problems of communication between hospital specialists and general practitioners, as well as the difficulties for healthcare professionals, particularly general practitioners, to see patients outside normal working hours, are highlighted. The authors demonstrate how an integrated theoretical approach to relate and combine existing theories could best be used to explain ICT acceptance and adoption behavior. This particular contribution offers the readers an integrated theoretical perspective to explain the impact of key organizational factors for overcoming commonly encountered resistance to telemedicine initiatives.

With Chapter III, "An Overview of HIPAA-Compliant Access Control Model," Cheng and Hung focus on the growing demands of Web-based healthcare applications and the need for HIPAA privacy rules to be standardized in Web services. As no comprehensive solutions to the various privacy issues have been defined in this area, they propose a vocabulary-based Web privacy policy framework with role-based access control (RBAC) and privacy extensions. Accordingly, they argue that the proposed framework is HIPAA-compliance. Again, this contribution aids the HISI research and practice community in understanding how difficult HISI policy can be formulated.

Theories, models, and organizational frameworks provide us with starting points to ask beneficial questions. Essentially, these models and taxonomies serve as guideposts to researchers in identifying some of the missing knowledge "gaps",

thus justifying further research and exploration. Furthermore, these foundational works assist researchers in explaining some unexplained but observed phenomena, as well as contribute to our understanding of various HISI domains' behaviors in the real-world systems. Theories are also often used as the basis for crafting various testable hypotheses. Yet, researchers must also rely heavily on proven methodologies to provide the correct answers for questions they have ventured to ask. Such methodologies are also scientifically accepted means of collecting data to discover new knowledge or verify established knowledge, and will, in turn, then become adaptable approaches for others to duplicate claims of what have been previously found. This brings us to Section II: HISI Methodological Approaches.

Here, our attention shifts from a general focus on HISI theory development, as presented in Section I, to a practical means of using powerful statistical modeling to ground theory in empirical datasets. Specifically, Dr. Christopher Reddick concentrates on the use of secondary analysis in Chapter IV on "The Internet and Managing Boomers and Seniors Health." His work provides valuable insights into an emerging and important HISI topic, that is, trends of Internet use for e-health information retrieval among the elderly versus the baby boomers. Accordingly, the author notes that, "For baby boomers, the Internet has become a major source of health information, second only to their family doctor." Whereas seniors probably have the greatest need for health information, the author claims that they do not use the Internet as their primary source of information nearly as extensively as the baby boomers. In short, the Kaiser Family Foundation's e-Health and the Elderly public opinion dataset of online health information access by boomers and seniors was analyzed to show that boomers marginally use online health information more than seniors for the management of their personal health. Moreover, those who are more aware, and have positive feelings towards online health information (for both boomers and seniors), will use the Internet more actively to manage their health. In essence, if people feel more at ease with, and have a better attitude towards using the Internet for e-health information retrieval, they would more likely use it to control their personal health, or do so on someone else's behalf. This partially answers a very important research question that has been asked in many past e-health conferences: "Has online health information actually helped some people manage their health more effectively?"

Next, even more complex statistical modeling using neural networks (NNs) methodology has been applied to discover "knowledge" in empirical healthcare datasets. Through the trauma audit and research network (TARN), Chesney et. al. in Chapter V on "Data Mining Medical Information: Should Artificial Neural Networks Be Used to Analyze Trauma and Audit Data?" formally advocate the use of an innovative data mining approach in creating an artificial neural network (ANN) model. This model would be employed for the analysis of accumulated trauma data, as compared to traditional logistic regression analysis. The authors show how their obtained results from the ANN model with "the output set to be the probability that a patient will die" differed from those using traditional logistic regression analysis. Ten years of TARN

(a network designed to provide effective feedback and accurate classification of care for injured patients) data have been analyzed. Essentially, the ANN approach uses a layered system of key inputs, the weighing of factors for classification probability calculations, and an adjusted outcome neural network analysis. In this sense, ANN modeling begins with the system recording injury details such as demographics, the mechanism of the injury, various measurements of the injury's severity, initial and subsequent management interventions, and the probable outcome of the treatment. Such records are then analyzed to accurately discriminate between those patients who are expected to survive and those who are predicted to die. Their results show that both ANNs and traditional analytic approaches achieve roughly the same predictive accuracy, although ANNs model has been found to be more complex to interpret than the logistic regression model. In other words, the authors manage to show how novel forms of sophisticated statistical modeling can be applied as tools to analyze equally complex HISI datasets, although their findings further suggest the usefulness of applying both traditional and non-traditional analysis techniques together, as well as including as many factors in the analysis as possible.

Steven Walczak and colleagues in Chapter VI on “Diagnostic Cost Reduction Using Artificial Neural Networks: The Case of Pulmonary Embolism” demonstrate the robustness of automated intelligence in improving diagnostic capabilities when predicting the likelihood of pulmonary embolism (PE) in a surgical patient population. Accordingly, they claim that the illness—PE—which may have mortality rates as high as 10 percent, is one of the most difficult and costly to diagnose. Fortunately, the complexity of identifying patients at risk for PE can be overcome with the use of intelligent tools, such as nonparametric Neural Networks. According to the authors, superior positive prediction can be achieved with the NN modeling technique. Thus, this contribution to HISI methodology advances the science of prognosis, a complex task for any clinician to handle, with the consequences impacting significantly on the patients.

In the remaining few chapters in this section, we move from statistical and analytic methods to interweaving among survey research, interviews (and triangulation), and the more qualitative case methodology. In Chapter VII, Andersen and Balas, on “A Survey on Computerization of Primary Care in the United States,” discuss the use of a survey-based approach to assess information technology (IT) usage among primary care physicians. As these physicians represent a major stakeholder group in the US healthcare system, insights into the adoption and diffusion patterns of IT among them is essential to enhance our knowledge of how IT is being deployed. With increased productivity and improved quality being the main objectives for using and deploying IT in healthcare delivery, many questions arise that require further research. These include what types of IT physicians are using, what their perceived benefits are, and what the major barriers to IT acceptance could be. An interesting—but puzzling—result the authors note was that a high number of physicians did not indicate any interest at all in the types of IT applications being surveyed. Overall, their results reveal that perceived benefits and barriers are im-

portant predictors of IT implementation. Their study has significant implications for developing strategies, as well as interfaces, for incorporating IT applications into real-world healthcare settings.

In Chapter VIII, Dana Schwieger, Arlyn Melcher, C. Raganathan and H. Joseph Wen apply a “Case Study” approach, conducted over a ten-month period within the domain of a modified adaptive structuration theory (AST) model, to document the impact of advanced IT and HISI adoption within a medical organization setting. AST, which is rapidly becoming an important theoretical paradigm for comprehending such evaluations, was modified to illustrate the changing interrelationships among the variables affecting the adoption and application of the HISI technology studied. Specifically, the case illustrates the complex interactions between medical billing technology and organizational processes. As the organization attempts to install and implement the new system, the researchers find that in order for the organization to maintain daily operations, several aspects of the organization, technology, and operations would have to be modified and adapted. Then, as the system integrates slowly into operations and the organization’s needs evolved through the adaptation process, the researchers, in turn, find that different iterations of the model could emphasize different structures. The case also illustrates that the capacity to manage HISI technologies is often dependent on the organization’s abilities to prioritize its needs and focus its energies on a critical structure, while temporarily disregarding others until the primary healthcare processes are under control.

A second survey-based contribution is provided in Chapter IX, “Understanding of Physicians’ Acceptance of Computerized Physician Order Entry,” a contribution by Liang and colleagues. Computerized physician order entry (CPOE) holds the potential to reduce medical errors, to improve care quality, and to cut healthcare costs. Based on a series of hypotheses generated by the technology acceptance model (TAM), these authors attempt to evaluate physician user acceptance of CPOE in a large general hospital setting in China. Items in the questionnaire are adapted from previous research and designed to measure physicians’ perceptions of CPOE. Under the condition of high CPOE experience, the authors find perceived ease of use having no effect on attitude; under the condition of low CPOE experience, however, perceived ease of use has been shown to positively affect attitude. In other words, as physician users become more experienced with CPOE, the issue of usability becomes less important. Yet, this result does not diminish the significance of the need for designers to pay attention to the usability factor. Rather, it actually proves the need for designers to pay special attention to the usability factor, as it positively affects the attitudes of those with low CPOE experience.

In Chapter X, we revert back to the qualitative approach of using a “case study” methodology. Wiggins, Beachboard, Trimmer, and Pumphrey contribute an interesting perspective on IT governance from a rural healthcare perspective. They used a “single-site” case study in their piece, “Entrepreneurial IT Governance: Electronic Medical Records (EMR) in Rural Healthcare,” to document the implementation of an EMR in a rural family practice residency program. The residency program,

which trains primary care physicians and provides primary care services to rural communities, has initially been aimed to enhance the practice's clinical research capabilities. But this simple goal eventually expands into a much larger goal of extending the system throughout rural clinics and providers in the region. The authors argue that organizations aiming for a successful adoption of IT as a means of improving healthcare in the rural setting should take an innovative, relationship-oriented approach.

The penultimate chapter for this section, Chapter XI, once again features the use of an integrated survey-interview approach, including stakeholder questionnaires and twelve key informant interviews, combined with an extensive literature review in "Telehealth Organizational Implementation Guidelines Issues: A Canadian Perspective." Contributed by Maryan Yeo and Penny A. Jennett to develop theoretically sound and empirically based perspectives, their research uses a triangulation of common methodologies. Results of their study are categorized into the four major themes of organizational readiness, accountability, quality assurance, and continuity. The authors point out that a vast number of their findings relate mostly to the former two themes, whereas the latter two themes have gained only scattered attention. The findings and recommendations, useful in the evolution of telehealth services and their successful management, lead us naturally to the final chapter in this section, a transition to Section III's contributions on HISI implementation, evaluation and practices.

Chapter XII entitled, "Computer Usage by U.S. Group Medical Practices 1994 vs. 2003 and Type of Usage Comparison to IT Practices in Taiwan," contributed by Sobol and Prater, serves as the transitional chapter. The researchers conduct a follow-up of their 1994 study of group medical practices using mail survey of IT use in private group medical practices. Issues they want to address include in-house expertise versus outsourcing, and the use of e-billing systems in these practices; this, in turn, sheds new light on how to reduce the increasing amount of time physicians spend on business administration. Their work addresses the "gap" in previous research, which tended to focus mainly on hospitals and health maintenance organizations (HMOs) but not private physician practices. Accordingly, the authors report on achieving a "longitudinal" picture of these private group practices' IT services adoption patterns. Results of their study provide insights into key issues and challenges faced by these practices, including the types of IT applications used, the different types of savings arising from IT adoption, the percentage of time spent by physicians on business administration, and the different sources of information these physicians relied upon to develop the business aspects of their practice. This transits us to Section III, which focuses on HISI implementation, evaluation, and practices.

In this section, we begin with Chapter XIII, a contribution from Apostolakis, Valasamos, and Varlamis. In "Decentralization of the Greek National Telemedicine System," these authors demonstrate a practical implementation of a Greek telemedicine system at a national level by recording and analyzing the shortcomings and difficulties of the existing Greek Telemedicine system. They suggest upgrading the

Regional Telemedicine Centers' role to become the cornerstone of the new system. By highlighting the necessary actions for a smooth transition to a new system at the technical, operational, and organizational levels, their analysis uncovers the shortcomings and inefficiencies in the usage of Telemedicine Centers in the National Health System, and dictates the development of the Regional Telemedicine Centers (RTCs). The binding of the new RTCs with the existing telemedicine system could then be performed with minimum cost by presuming recording and reusing existing infrastructure, training of personnel, and smoothly transiting to the new telemedicine structure. Their shared experience of a HISI implementation model provides insights to future HISI practices.

The remaining chapters in Section III incorporate more HISI evaluation and practices. The empirical study covered in Chapter XIV by Davis and Thakkar uses a two-phase approach to identify the status of Electronic health records systems (EHR) in U.S. hospitals. In "Perceived Level of Benefits and Risks of Core Functionalities of an EHR System," they report on interviewing seven healthcare and information systems professionals from three hospitals to develop a sound instrument to identify and draw relevant measures from the extant literature. They attempt to address the following question: If, with the use of "core" functionality in an EHR system, does a significant relationship exist between perceived levels of benefit and risk? In their study, "core" functionality was defined as "health information, results management, order entry/management, decision support, electronic communication, patient support, administrative processes, reporting, and population health management functionalities of an EHR system." Moreover, they want to detect any relationship between the status of the EHR system and the size of hospital. Their results show a significant positive correlation between perceived benefits and risks in all of the eight core functionalities, but no significant relationship between status of EHR system and the size of hospital. They conclude that each of these eight core functionalities might be adopted by hospitals either individually or as an entire EHR system. In a manner similar to the preceding contributions, the usefulness of conducting appropriately managed surveys (as well as interviews) for exploring HISI practices is clearly documented in this study.

In Chapter XV, "Using Pocket PCs for Nurses Shift Reports and Patient Care," Chang, Lutes, Braswell, and Nielsen evaluate the use of an emerging IT solution to overcome inefficiencies in providing quality nursing care, specifically in hospitals supported by paper-based systems. In their contribution, the emerging IT solution comprises using Pocket PCs and a desktop PC interfaced to a hospital's mainframe system to manage nursing care inefficiencies. This system has been introduced and evaluated on nurses working in traditional paper-based hospital systems. The goal is to apply mobile IT, allowing nurses easier access to patient information. The authors describe the development of the prototype and report the results of a pilot test, comparing the time spent in taking and giving shift reports before and after the study, as well as nurses' perceptions of the mobile IT system. In the end, nurses appeared to have provided strong verbal support for the use of the system. With

the deployment of such a system, the key question of returns on investments (ROI) is left to the readers. This study contributes to our understanding of the potential of mobile technology, integrated with a hospital's mainframe system, and how and what such a system could impact on the efficiency of communications in nursing shift reports, and in accessing information relevant to patient care.

In Chapter XVI, "Evaluation of a Fuzzy Ontology-based Medical Information System," Dr. Dave Parry emphasizes evidence-based medicine (EBM) to demonstrate how appropriate information should be made available to clinicians at the point of care. Electronic sources of information may fulfill this need, but require a high level of skill to use successfully. David Parry concentrates on the diffusion of e-technology, and describes the rationale behind, and initial testing of, a system to allow collaborative search and ontology construction for professional groups in the health sector. The approach, which is based on the use of a browser linked to a fuzzy ontology rooted in the National Library of Medicine (NLM) unified medical language system (UMLS), is seen to provide high quality information for professionals in making future EBM decisions. This concludes Section III and puts us into the final section of this volume, Section IV on HISI Policies and Knowledge Transfer Processes.

Given the significance of HISI research and practice, Part IV concludes the volume with an attempt to illustrate how these two components can be linked. A gleam of HISI policy and knowledge dissemination and transfers is provided through the chapters in this section. Chapter XVII highlights the current alternative paradigms to e-health pedagogy; Chapter XVIII takes a novel approach to examining healthcare information technology (HIT) usage and user satisfaction in healthcare organizations; and Chapter XIX reviews the competitive forces challenging e-health. Finally, Chapter XX provides a methodology for translating theory into best practices in the area of healthcare technology management, within the setting of a Canadian teaching hospital.

In Chapter XVII, "Applying Personal Health Informatics to Create Effective Patient-Centered E-Health," Wilson reviews and compares the current alternative paradigms to e-health pedagogy. Adopting a personal health informatics (PHI) perspective, he integrates three previously held paradigms—namely, the e-commerce paradigm, the personal health record paradigm, and the consumer health informatics paradigm. In this light, he attempts to develop a conceptual model of a new paradigm, the PHI. This paradigm incorporates the significant features of previous paradigms by integrating multiple perspectives of informatics, both personal and healthcare. The significance of this work lies in the model for enhancing knowledge dissemination in e-health design, development, and management. Overall, this work helps advance our contemporary understanding of the various health informatics issues, and points out future directions for HISI policy and knowledge transfer process, in particular, the design and development of pedagogy encompassing e-health.

In Chapter XVIII, Hikmet and Bhattacharjee, in their contribution of "The Impact of Professional Certifications on Healthcare Information Technology Use," take a

novel approach to examine HIT usage and user satisfaction in healthcare organizations. The authors examine the effect of professional certifications, such as that of the Joint Commission of Accreditation of Healthcare Organizations (JCAHO), in motivating health information technology (HIT) use among healthcare administrators. Their study examines only two of several organizational factors, namely professional certifications and facility type (size). Their survey-based approach concludes that these types of certifications do, indeed, enhance HIT usage and user satisfaction. Their study also raises noteworthy questions about the effect of external entities and factors on HIT use. Since HIT usage tends to be positively correlated with user satisfaction, this divergence of effects is theoretically perplexing and worthy of further research.

In Chapter XIX, Wickramasinghe, Misra, Jenkins, and Vogel advocate the use of a “Competitive Forces” framework to provide a unified system for understanding various e-health initiatives, as well as their relative strengths and deficiencies in improving access, quality, and value of healthcare services. They note that superior access, quality, and value of healthcare services have become national priorities for healthcare owing to the challenge of controlling exponentially increasing costs of healthcare expenditure. Their proposed evaluation system is developed on the basis of three key components: (a) an understanding of how e-health can modify the interactions between the various stakeholders; (b) an understanding of the competitive forces facing e-health organizations and the role of the Internet in modifying these forces; and (c) the introduction of a framework that serves to identify the key forces facing e-health. This chapter also provides some suggestions of how any health organization can structure itself to be e-health “ready”.

To conclude this volume, Chapter XX, contributed by Eisler, Tan, and Sheps in “From Theory to Practice: Healthcare Technology Management (HCTM) Conceptualization, Measures, and Practices” shows how the different aspects of HISI research, practice, policy formulation and knowledge transfers could be integrated. Their work illustrates how theory-based research drives the development of a sound measuring instrument, which can, in turn, be applied to improve HCTM practice in the field; in essence, the entire process of HISI knowledge transfers from the laboratory to the field. Using a triangulation method—combining expert panel review, survey, and cross-validation of their research findings with study results from an independent external source—they show that the development of a valid HCTM instrument could be used to guide policy formulation, dictate future HISI research and practice, and provide a model for structuring HISI education and knowledge diffusion. In this context, the instrument they develop to measure HCTM practice entails key performance indicators that differentiate among high and low performing health organizations.

Owing to the rapid diffusion of digital library capabilities and the proliferation of Internet-based data exchanges in this age of increased globalization, we are witnessing an explosion of knowledge in HISI. Who would have imagined just a decade ago that the HISI field would have attracted researchers and practitioners from so many

different walks of life? The HISI advanced series represent the cross-pollination of ideas from trained experts across a myriad of disciplines. This volume, in and of itself, is the beginning of an accumulation of contributions that is germinating an emergent body of HISI literature, so that future HISI research and practice may be informed. Contributors are primarily from researchers and practitioners of many different walks of life, with expertise in the area of healthcare computing, industrial processes and biomedical engineering, nursing informatics, health information sciences, management information systems, operations research, applied systems sciences, digital networks, web security standards and services, mobile health care, wireless networks and sensor networks, e-medicine, as well as e-home healthcare delivery systems.

This entire discussion brings me back to the central question we hinted in the beginning of this Preface—What would differentiate HISI from the other disciplines? Consider the question of how a discipline emerges to evolve a network of inter-related researchers and practitioners. If we sincerely wish to seek the answers, we must ask ourselves another follow-up question—what makes an emerging discipline attractive and appealing enough to gain the attention of new (and even established) researchers and students from other well-rooted and more traditionally-recognized disciplines? Soon, we will realize that what defines a discipline is nothing more than the accumulation of specific theories and practices that are relevant and applicable to the challenges of that discipline, and not just to any discipline. Indubitably, a critical mass of researchers and a substantial body of identifiable research literature must also exist for a discipline to thrive. Since numerous theories can be applied across multiple disciplines, each new and evolving discipline will be defined by its continuous drawing of theoretical concepts from other more established disciplines, as well as the growing number of researchers resolving “gaps” encountered within the discipline to give it an identity of its own. Over the years, therefore, if a discipline is to be increasingly recognized, it must germinate its own roots and bodies of literature in the form of accepted theories, frameworks, and models, alongside conclusions of identifiable, discipline-specific “gaps” in knowledge and practices. This is why theory-based, methodologically rigorous research in HISI is critical to advancing the field; this volume is a call for researchers to come forward and contribute to the building of the HISI discipline through the conduct of both basic and applied HISI research.

Altogether, the primary aim of this first HISI Advances Series volume is, therefore, to educate new researchers, practitioners, and interested students on the significance of research and best practices in carving out the HISI space. A secondary aim is to showcase how both HISI basic and applied research can contribute to real-world HISI practices. This understanding will not only enable us to better manage the future of HISI applications, but also to better appreciate how specific current HISI challenges and evolving HISI practices could, in and of themselves, beneficially impact individuals, groups, organizations, the economy, and society on an even greater scale.