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## Digital Bridges Across Disciplinary, Practical and Pedagogical Divides: An Online Professional Master's Program in Heritage Resource Management

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# Digital Bridges Across Disciplinary, Practical and Pedagogical Divides: An Online Professional Master's Program in Heritage Resource Management

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## Abstract

Growth and diversification in heritage resource management (HRM) archaeology since the 1960s have created new demands for training the next generations of HRM leaders and for addressing persistent and counterproductive divisions between academic and applied archaeologies. The Simon Fraser University Department of Archaeology (SFU) has responded to these demands with an all-new, cohort-based, thesis-focused graduate program created by and for HRM professionals. The program's target audience is HRM practitioners who hold Bachelor's credentials, have initiated promising careers in HRM, and desire advanced, research-focused degrees to enable their professional capacity and upward mobility. The SFU program is structured and focused to provide intensive, predominantly online training in the four essential dimensions of HRM: law and policy, ethics and practice, business management, and research design and methods. The program has been successful through initial cohort cycles and in attracting HRM industry interest in collaboration. Industry-academic partnerships in cognate disciplines have proved effective in comparable circumstances but remain underdeveloped as bases for planning and delivering state-of-the-art training in applied archaeology and the broader field of HRM. Critical next steps in program development entail the identification of attributes of HRM futures desired by all or most HRM stakeholders and the collaborative pursuit of those desired futures.

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***...one need for improvement consistently identified is in the area of graduate training of future practitioners of CRM archaeology.***

–Weisman and White 2000: 203

Heritage resource management (HRM) and cultural resource management (CRM) have varied definitions but only one core meaning to archaeologists (King 2002:5–6). HRM and CRM (hereafter HRM) refer primarily to professional archaeological research and resource management, typically done under contract to proponents of community or economic development initiatives or by government staff (McManamon 2018). Most HRM professionals work to achieve compliance for their employers with processes mandated by cultural and environmental protection statutes. Federal, state, and local laws in virtually all world regions require investigations to discover and evaluate the significance of heritage sites and objects, then conserve values threatened by land alteration or related changes (Messenger and Smith 2010). HRM Archaeologists and other HRM professionals working in government, private, museum, and non-profit contexts have abundant common interests. These include ethical practice, business success, and the use of legal and regulatory processes to balance out losses to *in situ* archaeological

records and other heritage resources with “public goods”—including gains in knowledge for heritage owners and stakeholders, community development resulting from infrastructure improvements, and economic growth and educational and employment opportunities. HRM and academic archaeologists concur in a general theory of HRM practice whereby the full range of tangible and intangible sources of cultural identities and vitalities are carefully identified, assessed, conserved, and interpreted or otherwise appropriately shared (Hogg et al. 2017). Implicit in this theory is the notion that more HRM archaeology means more research, ideally yielding more knowledge, more good decisions regarding heritage conservation, and more public benefits rooted in and stemming from positive collective senses of place, history, and identity.

In most jurisdictions, however, this aspirational theory for optimizing the goods flowing from HRM archaeology founders in the face of practical and political constraints. Market and regulatory demands tend to prioritize efficient delivery of ‘project clearances’ and ‘compliance’ ahead of the effective conservation of heritage resources or the creation of research results and systematic collections mobilized to compensate for heritage resource losses (Allen 2011; Altschul and Patterson 2010; Cushman and Howe 2011; Ferris and Welch 2015). Archaeologists increasingly acknowledge that HRM is not achieving its desired results. Critical reviews of HRM archaeology argue that, on balance, more of the “goods” embedded in cultural heritage are being lost to land alteration and commodity extraction than are being gained or conserved via standard HRM processes (Altschul et al. 2017; Davis 1972; Hammack 1969). One cost-benefit analysis concluded that new types and levels of effort are required to investigate the full spectrum of cultural heritage affected by land alteration and to conserve the full range of values—aesthetic, economic, scientific, societal, spiritual, etc.—embedded in that heritage (see Hogg et al. 2017).

The first half century of HRM archaeology has focused largely on harvesting scientific data from rigorously bounded and directly threatened sites. This narrowly scoped mission has given rise to both a large HRM industry dedicated to providing compliance services and to diverse and highly creative efforts, often led by Indigenous Peoples and local community advocates, to expand and enhance options for avoiding and minimizing adverse effects to places and landscapes in the path of progress. Tensions inherent in dual demands for efficient compliance and effective heritage conservation often give rise to practical, ethical, legal, political, and business challenges. HRM archaeologists and other professionals are at the forefront of efforts to manage rapid global change without sacrificing our forebears’ awesome tangible and intangible legacies. HRM archaeologists are awakening to the realities that our work is one integral part of HRM inquiry and practice dedicated to carrying forward the most useful and meaningful elements of humanity’s cultural inheritance. There can be little doubt that the decisions and innovations made by current and next generations of HRM leaders will have reverberations throughout archaeology and many domains of public policy.

In the ongoing response to this swirl of challenges and opportunities, HRM continues to emerge as archaeology's dominant and most dynamic form of professional practice. Once perceived as a fallback career option for archaeologists with thwarted academic ambitions, HRM now employs between 80 and 95 percent of working archaeologists around the world (Heritage Business International L3C 2016a, 2016b; Welch and Ferris 2014:101). The rapid growth and diversification in HRM, coupled with ongoing critiques (Ferris and Welch 2014; Hutchings and Dent 2017; Hutchings and La Salle 2015; Welch and Ferris 2014), is driving mandates for new and different graduate training for professional HRM practitioners. Globalizing demands for HRM services, coupled with international convergence on the identification-evaluation-treatment-interpretation protocol for most HRM practice, are dovetailing to guide new demands for professional development opportunities in general, and new and more practically and globally relevant university graduate program designs in particular (Gifford-Gonzalez 2017).

This article builds upon a brief online review (Welch 2017) to challenge HRM stakeholders to collaborate in pursuit of new types and levels training to prepare future leaders in the field. We argue that HRM practitioners working in the public and private sectors should join academic professionals and other HRM stakeholders in re-imagining and co-creating the next generations of graduate programs (Figure 1). Each of HRM's five 'communities'—owner (including Indigenous and descendant), government, public, project proponent, and professional—has roles to play in improving and sustaining an HRM aligned with aspirations to identify and conserve the most valued and significant cultural resources for use in the present and future (see McGimsey's [2003] "four fields of archaeology": research and report writing, teaching, management, and outreach). The present is, as it has been for the last four decades, the best time to build upon archaeology's defining commitments to create and mobilize knowledge about the past. We think one critically important way to do this is by creating opportunities for practice-proven, Bachelor's-level HRM practitioners to obtain the knowledge, skills, perspectives, and research-focused graduate degrees they need to enable their individual career success and to advance the policies, practices, and businesses of heritage resource management.



**Figure 1. Five Principal HRM “Communities” or “Stakeholders” (graphic by Greg Holoboff).**

This article is dedicated to these ends. We first review calls, predominantly issued by leading HRM archaeologists to universities, to boost the relevance and practicality of graduate training for archaeologists. Next, we describe how the Professional Graduate Program in Heritage Resource Management at Simon Fraser University’s (SFU) Department of Archaeology (British Columbia, Canada) constitutes an innovative and apparently effective response to these calls (SFU Archaeology 2017a). In light of how much SFU and other public universities have already done to assist the HRM industry by training highly qualified personnel, we follow Whitley (2004:25) in urging the HRM industry to put its “money, data, and opportunities” where its encouraging words to universities have been for the last three decades. The article concludes with suggestions for ways HRM professionals and their public and private sector clientele might invest even more in the professional development of BA-holding personnel, particularly through support for graduate training that does not require major career and personal disruptions. Our overall objective is to stimulate constructive dialogues among HRM stakeholders—potential students; cultural resource owners, stewards, and managers; academic and applied archaeologists; university and corporate managers—directed toward university-industry partnerships. We see significant potential benefits to all parties from collaborations that engage legal, practical, business, research issues, as well as HRM industry demands for new and different types and levels of HRM personnel. We are committed to advancing

training options, online learning technologies, and industry and community collaborations to engage and advance the careers of outstanding HRM practitioners who might not otherwise pursue professional development or advanced academic degrees.

### **CRM Calls for Academic Action**

In an early call for “A Training Program for Salvage Archaeology,” James Hester (1963:392) wrote: “The study of archaeology is currently in a period of crisis, primarily because large-scale reservoir, pipeline, transmission line, and highway programs on public lands are furnishing rapidly expanding opportunities for archaeological research,” noting that supplies of qualified professional investigators were, even then, insufficient. The academic response across North America and Britain was less than fast or furious, but more than simply insouciant. One infallible source of perspective, Jeff Reid at the University of Arizona, quipped, “we don’t do vo-tech” (personal communication to Welch, 1986). Nonetheless, as HRM grew and diversified through the last three decades of the twentieth century, HRM practitioners made ever more urgent calls for university assistance (for an overview, see Bender and Smith 2000). Thought leaders in archaeology entered the dialogues and broadened the terms of reference for what had been portrayed by condescending academics as salvage drudgery. The introduction to Henry Cleere’s path-finding book, *Archaeological Heritage Management in the Modern World* (1989:15), excused the HRM industry while urging collaboration among universities, professional organizations, and government agencies toward the “creation of a new profession of archaeological heritage manager.”

As time marched on it became clear that HRM was the new nexus, not just for essential planning and mitigation in the face of site destruction, but for a preponderance of the most innovative and consequential archaeological research and conservation initiatives. HRM became the institutional framework for the greatest number, diversity, and size of archaeology projects (McManamon and Hatton 2000). These developments and HRM’s legally structured position at the dynamic interface of state, market, and communal interests and values made it a multiplier for legal, ethical, research, and management complexity (Ferris and Welch 2015; Sebastian 2006; Whittlesey and Reid 2004). HRM emerged, swiftly if also without much fanfare, as a principal stimulus and proving ground for advances in activist, action-oriented, and Indigenous archaeologies (Ferris 2003; Hammond 2009; Klassen et al. 2009; Nicholas and Markey 2003; Schaepe 2007; Stapp 2000; Stapp and Burney 2002). This was ‘not your grandfather’s archaeology!’

In response to its rapid growth and increasing complexity, the HRM industry stepped up demands for new types and levels of academic training for practitioners. The report of the Society for American Archaeology’s (SAA) Task Force on Consulting

Archaeology (Elston 1997) recommended swift and sure steps to close rapidly widening gaps between HRM and academic archaeologies. Specific recommendations emphasized new graduate programs designed and delivered to meet the particular demands of HRM firms for highly trained junior professionals. The SAA Task Force noted the escalating diversity and specialization of professional practice in HRM by urging “all graduate programs in archaeology to include training in the following areas:

- Communication skills, both verbal and writing
- Historic preservation law and regulation and applicable environmental laws
- Proposal preparation, including research design, time estimates, and budget
- Basic methods and techniques for survey, mapping, sampling, testing, and excavation
- Basic methods and techniques for processing, cataloging, and recordkeeping
- Quantitative methods and analysis
- Basic computer techniques in word processing, spreadsheets, and database management
- Basic methods in photography, drafting, and graphics
- Report preparation, editing, and production
- Archival research (federal agency and state site files and county offices)
- Use of source materials such as land survey maps and soil surveys” (Elston 1997: n.p.).

Various dynamic, public-minded universities responded with innovative offerings, including Sonoma State, South Florida, and Northern Arizona (Northern Arizona University Anthropology 2017; Sonoma State University Department of Anthropology 2017; University of South Florida Department of Anthropology 2017). Still, the exploding HRM industry demanded more personnel with more and better preparation to complete site identification, significance assessment, and data recovery projects. The HRM industry also wanted recruits ready and able to service increasing client interests in regional- and site-scale heritage planning and management. The emergence of international specifications for considering environmental and heritage resources, together with growing market demands for heritage tourism attractions and related products, underscored needs for training in domains not previously contemplated in anthropology- and science-oriented graduate programs for archaeologists. In a more recent call for even greater investments by universities, Peter Biehl (2013:46) suggests Master’s programs “should include required courses on archaeology, cultural heritage, cultural resources management (CRM) as well as museum studies.” Adding to this litany, Biehl (2013:46) argues that HRM graduate programs should be “research-driven,” should require “a master’s thesis of original research,” and “should meet the increasing demand for scientific discourse and study of cultural diversity issues which have become a vital aspect of UNESCO’s agenda.” Biehl (2013:46) further calls for graduate curricula that

feature “prevention, preservation, and digitization as well as courses on law and the economy of heritage and tourism.” While we appreciate Biehl’s cognizance of the dynamic context for HRM practice, we are unaware of any program providing this somewhat daunting depth and breadth of training. Indeed, we question the practicality of any effort to deliver, within the two-year envelope that is becoming the global standard for thesis-based Master’s programs, all potentially necessary training for all HRM professionals. But such questions have not dampened initiatives on the part of progressive faculties at fine North American universities—including Arizona, Georgia, Central Washington, and Western Ontario—to balance depth-breadth-length trade-offs and leap into the breach with graduate programs in applied archaeological and cultural heritage resource management (Central Washington University Cultural and Environmental Resource Management 2017; University of Arizona School of Anthropology 2017; University of Georgia Department of Anthropology 2017; Western University Department of Anthropology 2017).

SFU is one of about 20 universities in the United States and Canada (Figure 2) to hear and heed HRM leaders’ pleas for improved graduate training needed to populate HRM’s human resource vacuum. SFU Archaeology has a long history of research and training at the academic-HRM interface, including a sustained record of outreach engagements with public and Indigenous / descendant communities (Burley 1994; Carlson 1971; Carlson 1970; Fladmark 1985; Mohs 1994; Nicholas 2006; Nicholas and Markey 2003; Nicholas et al. 2008; Spurling 1988). However, until 2006, SFU Archaeology largely stayed on the sidelines of HRM graduate curriculum developments. In the subsequent decade, SFU faculty members and university administrators monitored developments and contemplated opportunities to create curricular offerings that would be attractive to students, useful to their current and prospective employers, and tailored to meet professional standards, accreditation criteria, and requirements for Master’s candidate theses.



**Figure 2. Universities in Canada and the United States that host HRM / CRM Master's programs with thesis requirements or options.**

### **The SFU Response**

SFU is Canada's top-ranked comprehensive university and the only Canadian research university accredited in the United States. The Archaeology Department is research intensive, as recognized in the 2017 QS International Rankings for archaeology, where it rates as 44<sup>th</sup> globally overall and 12<sup>th</sup> on a global scale for research impact as measured by H-index citations (QS University Rankings 2017). Despite a paucity of HRM-focused coursework, SFU Archaeology has been a successful locus for BA and MA training for HRM archaeologists in Western Canada, with a total of over 1,000 BAs, 210 MAs, and 75 PhDs completed. Of those SFU alumni still working in archaeology and allied fields, the great majority are employed in HRM positions ranging from crew members to company owners to governmental officials to museum professionals. In addition to initiatives centered on SFU's Burnaby campus, a program at the SFU campus on the Kamloops Indian Reserve addressed HRM needs for First Nations by providing coursework and field training for several hundred undergraduate students, many of whom have continued in HRM (Nicholas and Markey 2003). In short, the developmental history

of SFU Archaeology prepared the department and the university to do more to encourage the convergence of academic and HRM archaeologies.

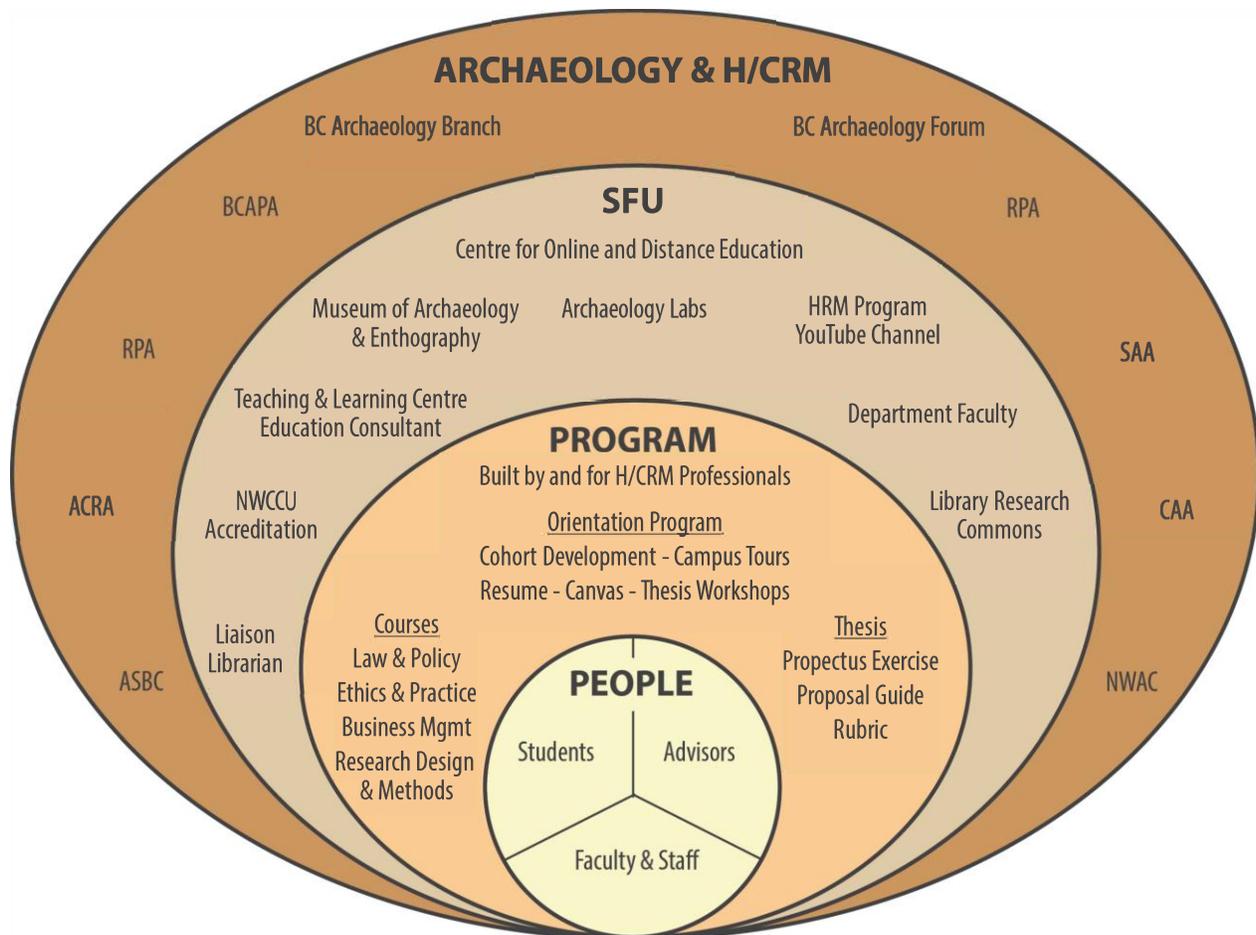
The final push to action came via recognition that more training in intensive research would well serve HRM parties, practitioners, and institutions. SFU Archaeology has witnessed various generations of bright and promising undergraduates march off to the HRM front lines, with a scant number returning for graduate degrees at SFU or elsewhere. In 2006, the SFU Archaeology faculty initiated internal deliberations and consultations with HRM leaders and professional organizations, including the British Columbia Association of Professional Archaeologists, to address essential questions regarding graduate program expansion to include specialized HRM training (Welch et al. 2007):

- What should a professional graduate program for completing the training of established HRM practitioners look like?
- Are SFU Archaeology faculty, staff, and facilities situated to provide an apt context for such a program?
- Is the number of BA-holding HRM field technicians, crew chiefs, analytic specialists, and junior-level project directors sufficient to sustain a(nother) HRM-focused graduate program?
- How might a new graduate program be structured and focused to attract and support students from 'demographics' and nations not adequately represented in current HRM archaeology?
- How might recent advances in the power and elegance of distance education software provide an appropriate platform for such a program? Would the archaeologists best suited to provide advanced instruction in HRM be amenable to and successful in advanced online teaching and learning environments?
- How might recent successes in Indigenous community-HRM archaeologist collaborations help to structure and guide professional graduate training and program outreach?

For reasons primarily relating to limited financial, administrative, and faculty capacities, no clear path emerged in the 2000s for new HRM programming at SFU. Planning was suspended until 2015, when SFU announced the availability of competitive funding to fast-track the development of professional online graduate programs (SFU Graduate and Postdoctoral Studies 2017). The SFU Archaeology faculty's mercenary instincts to pursue fresh financial support found common cause with our missionary inclinations to refresh decade-old program development planning dialogues and close gaps between academic and HRM archaeology. With help from industry leaders, government colleagues, and the designer of the business management course, Christopher Dore, SFU built an all-new HRM graduate program. Program planning principles evolved to feature a distinctive blend of human, relational, and organizational

assets (Figure 3), each and all of which are grounded in and contribute to the following eight core attributes:

1. The program structure, process, and requirements are transparent and compact, with all coursework purpose-built (not cobbled together from existing curricular offerings) by and for HRM professionals;
2. The two terms of coursework (four courses totaling 20 credit hours) feature intensive training in the four domains essential to sustained success as an HRM practitioner: *Law and Policy*; *Ethics and Practice*; *Business Management*; *Research Design and Methods*;
3. The three-day on-campus orientation sets the tone and pace for high-quality, collaborative communications within the candidate cohort and among faculty, candidates, and industry partners;
4. The state-of-the-art online learning environments for coursework and thesis development are supported by dedicated specialists at SFU's Centre for Online and Distance Education (SFU CODE 2017);
5. The coursework maintains a global focus by including examples from around the world while deploying instructor and learner experience in the United States and Canada to facilitate cross-border comparisons, integrate professional experiences and case studies into coursework and thesis research, and open minds and doors to international practice;
6. The cohort members become candidates for the same degree as other SFU Archaeology Master's students but are released from on-campus requirements and entitled to exclusive specialized training through coursework and internship opportunities;
7. An optional, coursework-only, Graduate Certificate in HRM is available for candidates who have previously completed Master's theses or do not require a credential linked to intensive research training; and
8. A Master's thesis is otherwise required. The thesis is rigorously defined and expertly guided by an SFU faculty supervisor and external practitioner to meet Register of Professional Archaeologists criteria (RPA 2015a), other pertinent jurisdictional standards, and SFU requirements for an in-person, juried oral defence.



**Figure 3. SFU Archaeology’s Professional HRM Program Assets (NWCCU=Northwest Commission on Colleges and Universities, ASBC=Archaeological Society of BC, ACRA=American Cultural Resource Association, RPA=Register of Professional Archaeologists, BCAPA=BC Association of Professional Archaeologists, SAA=Society for American Archaeology, CAA=Canadian Archaeological Association; graphic by Greg Holoboff).**

These eight planning principles continue as sources of guidance and comparative advantages in SFU’s Professional Graduate Program in Heritage Resource Management. SFU launched the program with an 11-candidate cohort in 2016 and repeated this recruitment level in 2017. The program focus on integrating and balancing legal, ethical, business, and scientific demands on HRM practitioners has been especially well received by candidates. HRM colleagues and the first two cohorts have found that the program broadens, deepens, and professionalizes participant capacities and offers a worthy training option, especially for BA- or BSc-holding practitioners unwilling or unable to access traditional graduate programs with substantial on-campus requirements. The

2016 cohort rated their experience highly and demonstrated their learning through exceptional coursework performance and by placing second in the 2017 SAA Ethics Bowl (Cornett 2017; Society for American Archaeology 2017). Master's candidate Whitney Spearing wrote, "The course material is directly relevant to project planning and operations—both high-risk factors in the HRM compliance industry." Another HRM candidate, Derek O'Neill, said, "Working in the HRM industry in BC for almost ten years, I would consider myself knowledgeable in many aspects of our industry; however, the coursework has been incredibly enlightening and engaging to problems facing heritage management on a regional, national, and global scale" (SFU Archaeology 2017b:n.p.).

SFU has taken further steps to make it as easy and valuable as possible to apply to and attend the HRM Program. The university has relaxed admissions standards in recognition of applicants' 'experience equivalencies.' SFU also responded to early feedback from prospective applicants by reducing the total cost of program tuition to about \$26,000 CAD (\$5,600 per term for the required five terms). An internship program that will provide about \$15,000 for stipend and research expenses for candidates interested in working with the mining sector is ready to be unveiled. The faculty has been effective in encouraging HRM candidates to engage non-academic senior colleagues as members of thesis committees. The program website, the Twitter feed (@SFUheritage), and newsletters receive and deliver program, application, and heritage conservation information around the world. The program is unique in its integration of online coursework and research-focused thesis requirements. It is also uniquely responsive to long-standing and continuing requests from the HRM industry for expert training within parameters and directions defined by the scope of contemporary HRM professional practice. All indications are that the program is enhancing candidates' knowledge of today's HRM dynamics on regional, national, and global scales, while ushering them into a growing network of colleagues and partners, thus furthering their access to professional opportunities and advancement. Bachelor's holding HRM practitioners living anywhere in the world now have the opportunity to obtain thesis-based Master's training without the obligation of residential relocation or on-campus coursework.

### **Time for the HRM Industry to Step Up?**

SFU Archaeology and faculties at other public universities have responded constructively and substantively to persistent calls from the HRM industry for special training for their personnel. Consultations since 2015 with over 100 HRM company owners and managers about graduate training have made it clear that HRM still needs staff broadly and expertly prepared through academic training. HRM industry leaders are eager to participate in designing and implementing university programs to deliver training that combines academic excellence and practical relevance, as indicated by the calls for university-based training cited above, by consultations undertaken to develop SFU's HRM program,

and by the expansion of professional development programs (Chartered Institute for Archaeologists 2017; Register of Professional Archaeologists 2017; Society for American Archaeology 2012).

Somewhat less clear, however, is whether HRM leaders and their companies are ready and able to form real partnerships with universities—to give in rough proportion to the value benefits being received through specialized graduate HRM training programs. Many HRM employers offer internship opportunities for graduate students. Internships, of course, offer students real opportunities for context-specific experience and for building professional networks. They also offer companies low-cost personnel and low-risk, ‘try-before-you-buy’ opportunities to assess potential job candidates (for a synopsis of HRM internships for Master's students, see Gifford-Gonzalez 2017). But some HRM employers express concerns about providing administrative or financial support, including modified duty schedules, for employees interested in pursuing part-time graduate education. Several Canadian employers have expressed concerns with allowing HRM candidates access to HRM project data for use in course projects or thesis research (Anderson 2018; Hammond 2016; Kintigh et al. 2014:19; LaSalle and Hutchings 2012). Despite keen interests in finding and retaining talented and committed staff, HRM has yet to institutionalize access on the part of junior personnel to professional development.

It seems likely that these are HRM industry growing pains, kinks to be worked out as HRM program graduates from SFU and elsewhere apply and demonstrate their improved understandings and capacities. In the meantime, the concept that universities exist to conduct “curiosity-driven” research and impart knowledge to students to satisfy mere intellectual curiosities is, for better or worse, a holdover from the days when post-secondary education was largely for the children of the privileged. (Three authors of this chapter were cautioned as their interests in the past budded that archaeology should only be studied by those with independent financial means sufficient to support quaint intellectual hobbies). Most large public universities abandoned “ivory tower” pretenses and positions decades ago, and many academic fields are actively pursuing big enrollments in robust and specialized professional programs at undergraduate and graduate levels. Faculty research remains highly valued, especially to the extent that the resulting knowledge advances the academic underpinnings of professional practices. Some students are still being groomed for future academic careers, to be sure, but a clear majority of students who enroll in the SFU Archaeology graduate program, and all candidates for the HRM professional program, do so to advance their prospects for entry into or advancement within a field of highly skilled practice, not to become academic teachers or researchers.

Publicly funded universities expect to be accountable to governments and taxpayers, and it is not unusual for governments to survey employment status of alumni in order to compile evidence that education effectively leads to careers that serve socioeconomic and institutional needs, as well as individual interests in rewarding and

satisfying work-lives. Universities are justifiably proud of the achievements of their students and frequently claim that a university education is the foundation for societal vitality as well as career success. The latter message, especially, has been received by high school counsellors and parents. The most common reasons cited by undergraduates for attending SFU were “get a good job” (47%) and “train for a specific career” (38%) (SFU Institutional Research and Planning 2017). There should be no surprise among professional archaeologists or HRM corporate managers that students are actively seeking education to facilitate their initial professional employment and subsequent advancement.

Accreditation is an emerging option for a professional HRM program. Faculties of medicine, business, architecture, geology, planning, engineering, and education provide programs of study with curricula that are to a greater or lesser extent mandated and evaluated by a professional body. For example, in Canada, engineering programs are accredited partially on the content and structure of the university curriculum and the attributes of graduates of the program (Engineers Canada 2017). Accounting programs in business schools are accredited through the Chartered Professional Accountants of Canada process that also specifies learning outcomes and curriculum content (CPA 2017). Accreditation visits to universities are taken very seriously by all parties, and no university faculty or administration wants to see its professional programs lose accreditation or be placed on probation. In addition to its programs to register individual qualified professionals, the Register of Professional Archaeologists (RPA) currently certifies archaeological field schools (RPA 2015b), certifies continuing education programs (RPA 2017), and recognizes affiliated societies that meet specified criteria (RPA 2018a). The Register’s 2017–2022 strategic plan (RPA 2018b) features initiatives to foster professional development at all career levels, providing further support for the accreditation of university-based graduate training programs in archaeology, including HRM.

Opportunities also abound for serious discussions to create industry-university partnerships that address mandates for HRM professional development on various levels—from unmonitored hour-long webinars to advanced and intensively evaluated training in pursuit of recognized credentials. These partnerships should, we argue, build on fundamental disciplinary mandates for resource conservation, ethical practice, and high-quality knowledge creation and mobilization as a public good. SFU’s Executive MBA in Aboriginal Business and Leadership (SFU Beedie School of Business 2017) provides one model for a partnership that has engaged numerous industry interests and trained over 100 working professionals, and there are many others (University Industry Demonstration Partnership 2017). What is missing, so far as we are aware, from the domain of HRM industry or government partnerships with universities is real commitment to sustained collaboration on the part of HRM firms and larger environmental services and construction support companies.

Successful relationships between universities and professional bodies or industry groups must at some point transcend internships, recognize each partner's responsibilities and benefits, and allocate duties accordingly. The three principal stakeholders in such partnerships are

1. Students who wish to enter a profession and who seek certainty that the university program they select will provide appropriate education and training;
2. Universities that prepare students for professional entry or advancement and that have multiple interests in the professional and financial success of graduates; and
3. Working professionals who want to strengthen the reputation and capacity of their firm, their profession, and its members.

Subsidiary stakeholders include communities of heritage owners and stewards, the public, proponents of land alteration (and advocates for land conservation), and various levels of government that have interests in well-educated and well-regulated professionals serving the public and private clientele.

Among the biggest problems that university archaeology programs face is the long-standing struggle by professional archaeologists to craft an effective self-regulation process. A professional certification system that is efficient, enforceable, and cross-jurisdictional would give university faculties clear targets and standards for preparing students. At least as important, professional certification would also provide governments with new tools for ensuring the creation of public goods in compensation for heritage consumed by community and economic development. Despite these advantages, pockets of real resistance to establishing certification processes persist among apparently self-interested HRM business owners. If HRM archaeologists are not willing to agree that their mid- and senior-level staff (especially field and project managers) must hold a degree from a program that is accredited by a professional body, then they can hardly blame the academic community for shrugging off further calls for specialized training to serve the needs of the profession. Academic archaeologists are generally open to guidance from practicing professionals in training students to current professional specifications so long as non-academic colleagues step forward to assist in recruiting appropriate students, defining performance criteria, and applying those same criteria when hiring junior staff. Academic archaeologists and other instructors are also more likely to welcome HRM leaders' input on the structure and content of degree, continuing education, and professional development programs to the extent that such input presages program applications and related support from those leaders and their employees.

SFU and other universities in Canada and the United States appear to be ready and able to collaborate with HRM industry representatives. As of 2018, SFU is particularly interested in discussions to identify and harmonize diverse interests in advancing the education of junior colleagues who have made commitments to HRM careers. Additional discussion topics having potential benefits for professionals and industry groups include the opening of new markets for HRM services, the internationalization of HRM policy, the

diversification and specialization of HRM practice, engagements with Indigenous and local or descendant communities, the translation of important HRM research results into broadly accessible media, the battles against looting and other cultural heritage crime and resource attrition, the integration of biophysical and sociocultural heritage conservation, and the recruitment and retention of personnel from Indigenous communities and other underrepresented groups. Archaeology needs, and our diverse public-government-private clientele deserves, future-focused deliberations centered on how university-industry collaborations can add value and scope to each of the four essential dimensions of HRM—law and policy, ethics and practice, business management, and research design and methods. There is not likely to be a better, more cost effective, or more politically appropriate time than the last years of the 2010s to define the desired attributes of future generations of practice, practitioners, public engagements, and research impacts.

The commitment, at SFU and other universities, to funnel expertly trained professionals into HRM is expanding and deepening forceful fields of intellectual, commercial, and communal gravity to meet changing standards for HRM licenses to operate on multiple social and political levels. HRM's future vitality and integrity will depend even more on practitioner commitments to savvy management, impeccable ethics, excellent research, and strategic and critical thinking. The long-term vitality of graduate curricula like the SFU Professional HRM Program will require multi-faceted collaborations among universities, HRM employers, industry groups, and government regulators to envision and specify essential attributes of desired futures and to shape training, research, and outreach initiatives in the co-creation of those broadly beneficial ends.

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