

CHAPTER 9

e-channel: A Platform for Disseminating the Scholarly Output of Innovators

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BACKGROUND

The Spencer S. Eccles Health Sciences Library (EHSL) is responsible for advancing the educational, health care, and research efforts of University of Utah (UU) Health. Located in the heart of the health campus, its faculty and staff partner with the schools of medicine and dentistry, the colleges of nursing, pharmacy, and health, and the University's hospitals and clinics. Before 2012, the EHSL building housed a sizable print collection. In 2013, witnessing the dwindling use of its print resources, EHSL made the tactical decision to eliminate the vast majority of its print books and journals.² EHSL decided to relinquish its traditional role of collecting books in favor of collecting and connecting people through sharing library and office space and building a collaboration space. Staff members, freed from ongoing maintenance of the stacks, were able to redirect their efforts to seeking partners with whom the EHSL could collaborate on future projects driving innovation and discovery at the institution. The reclaimed physical space allowed the EHSL to invite those strategic partners into the building and focus on becoming the central hub for interprofessional and innovative collaborations.

Working in close proximity with University innovators facilitated EHSL's involvement in key institutional initiatives and projects. As EHSL became increasingly involved with campus innovation efforts, EHSL faculty soon became aware of the unique information needs and professional challenges of these individuals. Chief among them is the lack of publishing opportunities for disseminating their work. Traditional journal publishing focuses on research outcomes and is typically not receptive to publishing manuscripts or objects devoted to medical innovation output such as process improvements,

new technologies, brainstormed ideas, digital therapeutics (e.g., health applications and games), and other similar projects—both successes and failures. A literature search failed to produce a journal dedicated to medical innovations. This coupled with conversations with innovators at conferences confirmed a scholarly venue was needed. Building on the recommendations of a commissioned report by consulting firm, Delta Think, Inc., examining nontraditional publishing opportunities, EHSL faculty and staff met to discuss ways of addressing the lack of dissemination options for innovative work. The decision was made to create a nontraditional platform, e-channel, to collect and publicize the work of innovators across many disciplines, but particularly the health sciences. A partnership between gamers, EHSL faculty, and staff resulted in the creation of a multimedia platform soliciting and disseminating the work of innovators from various organizations and disciplines.

PLATFORM COLLABORATION

One of the first partners to share space in the EHSL building was The Therapeutic Games and Apps Lab (The GApp Lab).³ The GApp Lab comprises Entertainment Arts & Engineering (EAE) graduate students and is a collaboration between EAE, the Center for Medical Innovation (CMI), and EHSL. While The GApp Lab focus primarily on the research, development, and production of interactive, medically focused games and apps, the expertise and skills of its members made them logical collaborators for the development of the e-channel platform. EHSL negotiated a contract with The GApp Lab including 1400 hours of e-channel site design work from a student team consisting of an engineer, an artist/designer, a producer, and a research assistant working under the direction of a faculty mentor. The completed project, illustrated in [Fig. 9.1](#), was delivered to EHSL in early 2015.

The homegrown platform designed by The GApp Lab was the launch point for e-channel's development and served as the inspiration for collaborative projects going forward. In 2016, the platform for e-channel ultimately migrated to a more flexible and easily modified one—WordPress (see [Fig. 9.2](#)) to accommodate the rapid growth of content. Moving from a homegrown interface built using JavaScript Object Notation to a commercially available one offered many more attractive features such as usage statistics, access tiering rights, and a robust search engine capable of searching across different content formats to enhance discovery. It also eased adding new content as an entire new interface component does not have to be built each time. It is notable that



Figure 9.1 e-channel Home Page, Version 1, 2015 © e-channel.

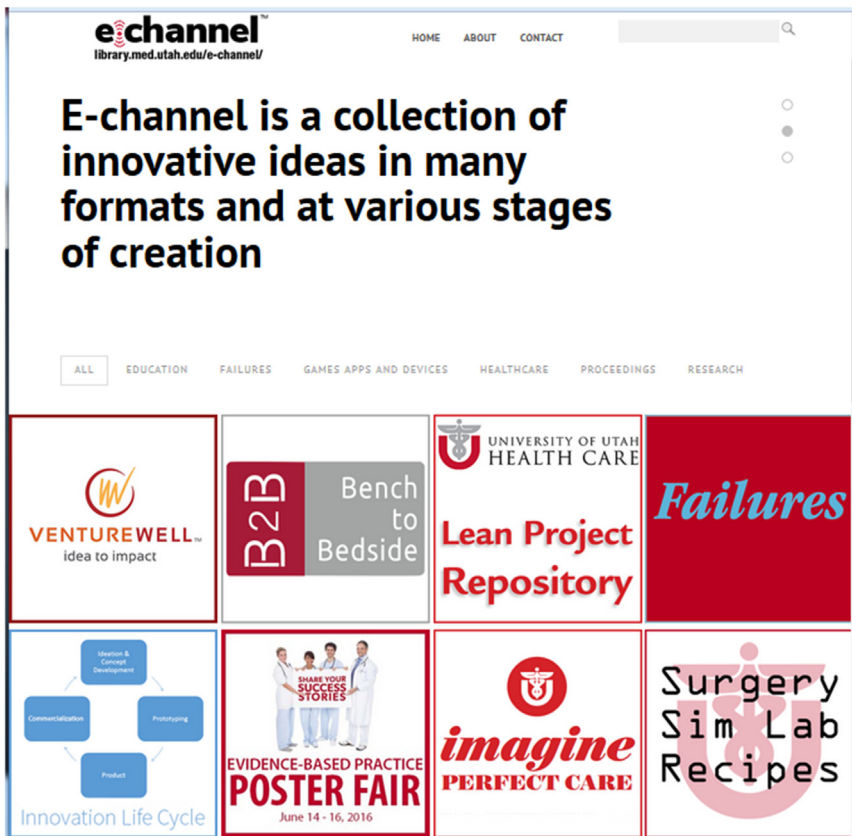


Figure 9.2 e-channel Home Page, Version 2, 2016 © e-channel.

e-channel—a platform dedicated to collaborative and innovative work—was itself the product of a fruitful partnership between the EHSL and other institutional departments.

CONTENT COLLABORATIONS—LOCAL PARTNERSHIPS

Center for Medical Innovation

As this was the original unit housed within the remodeled EHSL print collection space, it was natural the first entry for e-channel was the output created by this innovation center. CMI consists of three subunits—the annual Bench to Bedside (B2B) student medical device competition, a Skills Center or simulation center used primarily by surgeons to practice various skills and operating techniques, and The GApp Lab.

Bench to Bedside

Each year a student-driven medical device competition occurs in the spring with a capstone event held at the Utah state capitol building. Teams are given \$500 and around 6 months to create a prototype device, conduct market research and generate a business plan, and obtain a provisional patent. Judges are gathered from throughout the University to view team video pitches prior to the capstone and then to personally interview teams at the event. Cash prizes totaling over \$70,000 are awarded, including one from the Library Innovation Team (LIT) comprising representatives from all three University libraries—enabling teams to reinvest earnings to further develop their products. Top winners are granted University commercialization support to enter the market. The EHSL has videotaped the pre-capstone pitches and has encouraged the B2B student leaders to inform teams of the services and resources offered by the LIT. Library faculty present at B2B workshops and consult on identifying “prior art”—proof that an idea or invention is already known. Librarians also help identify evidence to support product need and development, and market research to aid in business plan creations. Resulting B2B pitch videos, annual reports, and photos are captured and preserved in e-channel to provide a one-stop-source for outputs from this now international competition.

Skills Center

The Skills Center houses a lot of simulators and training devices. Educational sessions are frequently conducted by University and outside instructors for surgeons, anesthesiologists, and other health-care professionals. The Skills

Center's one claim to fame is to create low-cost training tools to supplement the more expensive simulators. Their collections of "Surgery Sim Lab Recipes" are hosted on e-channel. Future e-channel content will include more of the Center's instructional materials supporting low-end simulations.

The GApp Lab

The aforementioned The GApp Lab, which partnered with EHSL to bring the vision of e-channel to life, remains an ongoing collaborator. Student teams submit "wrap kits" to e-channel for preservation and dissemination.⁴ These multi-format "wrap kits" consist of various game design elements, such as artwork, style guides, and demo videos so the research and processes part of game development are documented for the future. Before The GApp Lab's collaboration with EHSL via e-channel, most of these important data sets were lost as graduating students would leave the institution, grant funds would run out, or programming attempts would fail. This loss of historical documentation of obstacles encountered, problems solved, and decisions made regarding game development meant future The GApp Lab teams were unable to build on the work of their predecessors. By partnering with EHSL to collection, organize, preserve, and share their "wrap kits," The GApp Lab is able to ensure mistakes, and triumphs of previous teams are passed on to future generations of innovators at the institution. This dissemination of knowledge via e-channel has a positive impact on The GApp Lab's ability to fulfill its mission of developing games and apps to improve patient care.

Lean Project Repository

Many institutions are looking toward applying Lean principles to eliminate waste within their institutions and to gain more cost efficiency. In 2013, Dr. Vivian Lee, then Senior Vice President of the Health System, CEO of the UU Hospital and Dean of the School of Medicine, commissioned the UU School of Business to train four cohorts of health leaders in Lean principles. The resulting project summaries—or A3 templates—were collected and disseminated via e-channel. Resulting professional journal publications, if written, have been linked to the project summaries.

Games4Health

Games4Health is another student innovation competition offered by The Sorenson Center for Discovery and Innovation, David Eccles School of Business at the University. It holds an annual competition ending in

the spring with a capstone gala and award event. Starting in 2014, the competition has grown to include 14 countries and 85 international universities in 2017. Students can create wireframe games, share their ideas, and create promotional videos to enter the competition. The competition has gone from being a local one to an international one and now includes high school students who won three awards in the 2017 competition. Games are often themed around funding sponsor interests such as positive psychology. e-channel has collected this competition's outputs so they are organized, preserved, searchable, and therefore discoverable to many.

Technology Venture Commercialization

The UU TVC is tasked with helping UU faculty, staff, and students with taking mature ideas to the market. TVC offers consulting services, workshops, an incubator, and other services to entrepreneurs, including industry. They also sponsor a bimonthly event called Tech Tuesday to give UU and industry members a chance to learn about new products, programs, and opportunities and to network. The EHSL was a first co-sponsor of a Tech Tuesday when *Crossing the Chasm's* one author, Michael Eckhardt, was a speaker. This event's presentation and related materials are available on e-channel.

Working with the TVC, the EHSL faculty soon realized while there was a lot of information about innovation and entrepreneurship throughout the UU Innovation Ecosystem⁵ websites, there was no one place where this information was readily available. The EHSL worked with TVC to generate an Innovation Lifecycle pointing to relevant UU resources pertinent to each stage of the innovation progress. This Innovation Lifecycle is on e-channel.

Imagine Perfect Care

Another UU Health program initiated by Dr. Lee was Imagine Perfect Care (IPC). IPC was started to encourage UU personnel to think of their efforts through the lens of a patient. Placing the patient at the center of health care creates a culture appreciated by patients and engages them to maximize their health care. IPC created a physical Resource Center bringing together in one space an environment where UU personnel can learn about others' initiatives and can test new concepts such as "room of the future." Several patient room mock-ups enabled staff to test workflows and efficient layouts of furniture and facilities. White Styrofoam walls

outlining the room spaces enabled staff to write their ideas for changes right on the walls. The Resource Center showcased many EHSL initiatives such as an app bar (U-Bar), an Ideation Studio, a repository of patient education documents, and Healthi4U, a student-driven health video production competition. In return, EHSL promoted outputs from IPC Resource Center Open Houses and co-produced videos to illustrate IPC seed-funded accomplishments.

Department of Biomedical Informatics

The UU School of Medicine's Department of Biomedical Informatics (BMI) often sponsors lectures and visiting scholar events. The EHSL videotapes these occasions and includes them on e-channel when permission is gained from the speakers. BMI offers a Data Science for Health summer course to University personnel with EHSL providing technical support. Guest speaker video lectures are recorded and posted to e-channel each year the course is offered.

Moran Eye Center

The John A. Moran Eye Center is one of the premier research and clinical care eye centers in the United States. With a strong commitment to education and quality training for ophthalmologists both locally and internationally, the Moran Eye Center undertook an ambitious project to capture the work of its faculty, residents, and fellows with the goal of making hundreds of locally performed ophthalmic surgeries, unique case presentations, and lectures given by recognized experts freely available to the global ophthalmology community. The content creation was easily achieved, but the Moran Eye Center found itself challenged by the task of needing to organize, describe, and disseminate the content in a systematic way. After reaching out to EHSL for guidance, the two entities formed a collaboration to create the Moran Clinical Ophthalmology Resources for Education (CORE).⁶ Working in partnership with eye center faculty, an organizational structure for presenting the material was developed and refined to accommodate variations in local and global training programs. Various content sources were identified and collection procedures established to capture those outputs. As content is produced, EHSL manages the process for submission, peer review, acceptance, and dissemination via the CORE, a component of e-channel.

While still in its early stages, this project has been a highly successful EHSL—Moran Center collaboration. Libraries are uniquely positioned to

assist institutional departments to collect, organize, and disseminate their intellectual output via meaningful digital educational repositories.

Global Health

The UU has a history of global health initiatives addressing the systems and processes by which health care is delivered to patients around the world. Many University initiatives in this arena focus on potential changes to increase access, quality, and equitability. In pursuit of this goal, the institution has invited medical practitioners, policymakers, professionals, investors, technologists, students, and businesses to participate in an annual Extreme Affordability Conference⁷ devoted to creatively tackling the challenges of accessible and affordable health care on a global scale.

The EHSL works collaboratively with the UU Global Health program to capture the innovative ideas and solutions shared at the conference. Interested parties who are unable to attend the Extreme Affordability Conference can visit e-channel to browse the collection of posters presented during the meeting. By partnering with Global Health to preserve and disseminate the output of this important endeavor, EHSL enables health-care practitioners to explore pilot programs already underway and identify the resources and professional connections needed to engage in future global health initiatives.

Healthi4U

Annually, the EHSL partners with other UU units to offer a student health video competition called Healthi4U to encourage students across all professions to create short videos to communicate health messages on a plentitude of topics.⁸ Teams comprise three to five students from at least three disciplines. Five scholarship awards are granted to winning teams and resulting videos are shared via e-channel and selected ones via the UU Health Hospital's patient education television station.

Eccles Health Sciences Library

EHSL also places many of its activities and events in e-channel. Annually, EHSL holds an InfoFair to highlight the lightest technologies, related issues, key relevant topics, etc. Posters, videos, programs, etc., from these events are hosted on e-channel. The 2017 EHSL InfoFair was on the hot topic of research reproducibility. EHSL received grant funding several times to generate an awareness of sex and gender differences in research. Items

produced by these grants are hosted in e-channel, including videos with underrepresented communities within the Salt Lake region documenting women's preferences for health care.

Additional Local Partner Links

There are several additional partners included in e-channel where contributed content is not stored within the WordPress platform but linked to the content to highlight it. The reasoning for this is because of the amount of storage and labor required to duplicate the content. Examples of these include the ARUP Institute for Learning,⁹ creating educational modules to enhance medical laboratory practice throughout the country, and the Scope radio show, producing daily podcasts and health instructional content.¹⁰ In time, it is hoped some of the content displayed by these e-channel tiles can be added to the e-channel platform for preservation purposes.

CONTENT COLLABORATIONS: NATIONAL PARTNERSHIP—VENTUREWELL

Attendance at different gaming and innovation conferences led to the former director of the EHSL contacting the professional association staff sponsoring such conferences to determine interest in sharing content with e-channel. One association agreeing to contribute conference output to e-channel was the National Collegiate Inventors and Innovators Alliance (NCIIA), now VentureWell. Through conversations with NCIIA staff, pdf versions of contributed posters have been added to e-channel since 2014. Posters are not exclusively on e-channel, but are preserved there as VentureWell replaces their conference posters annually on their site.

CONTENT COLLABORATIONS: INTERNATIONAL PARTNERSHIPS

Innovation Vault

The field of innovation and entrepreneurship education has been growing rapidly at universities throughout the world. The UU has joined numerous peer institutions in devoting resources supporting the curriculum needs of this discipline. To broaden the field of content experts from whom students can learn, EHSL partnered with the Canadian Innovation Centre (CIC) to create the Innovation Vault on e-channel.

CIC is a national, not-for-profit organization dedicated to helping innovators, inventors, and entrepreneurs transform their ideas into market successes. In 2012, Andrew Maxwell, the CIO and Director of Partner Relations at CIC, began capturing video interviews with luminaries in the field of innovation and entrepreneurship with the goal of creating a resource of current industry and academic knowledge. As the project grew, he also began collecting video documentation of lectures, seminars, and conference breakout sessions on topics relevant to the field. The challenge then was to organize these hundreds of videos into a searchable database offering ease of access and topical discoverability. Discussions between the CIC and EHSL led both parties to conclude that the organizational expertise of EHSL could solve this dilemma and a project partnership was quickly established.

The CIC agreed to provide the video content to EHSL for inclusion on e-channel, while EHSL agreed to curate, describe, organize, and preserve the collection in a way optimizing its discoverability and usefulness for academic programs devoted to innovation and entrepreneurship. The resulting Innovation Vault is a rich video library enhancing learning by exposing viewers to insights and best practices developed by industry leaders. More information about the Innovation Vault and e-channel itself may be found in the book, *Information and Innovation: A Natural Combination for Health Sciences Libraries*.¹¹

Digital Games Research Association

Another international professional association partnering with EHSL by contributing content to e-channel was DiGRA—Digital Games Research Association. Their president happened to be a faculty of The GApp Lab at the UU, and thus connections were easy to make as the Lab had helped to create e-channel's first platform. He shared the idea with the governing board of DiGRA who readily agreed. Annual meeting presentations and posters for the last 3 years are available via e-channel and DiGRA's website.

LESSONS LEARNED

Producing e-channel has led to many lessons learned from technological perspectives to philosophical and cultural differences. EHSL staff were given a chance to redirect skills required by a print library environment to an online digital collection format through the creation of e-channel.

Additional skills were needed such as graphic arts, WordPress management, and marketing talent.

Culturally, one main lesson learned is innovators are not as willing to share content as other kinds of academic personnel as a result of the commercialization future for their output. Ideas, even failed ones, are of great value. While they may not spark at one moment in time, with later innovations or a fresh set of eyes, a failed idea can turn into a gem of one with the right cultivation and growth environment. Originally it was envisioned innovative teams would be willing to complete structured templates to document their contributions, their progress, and the barriers to success; this has not proven to be the case. Students find it difficult to complete even competition-related paperwork with their time constraints, let alone complete an “achievement” document. Intellectual property rights mean more than just promotion or tenure potential with innovators—it can translate into real dollars and revenue for not only them but their associated institutions as well.

As with most things in life, finding the sweet moment when someone has a need you can fulfill or address is when e-channel comes to the rescue. Personnel need to reach a pain point before they will take the time to add content and contribute to e-channel. A champion also can assist with encouraging peers and others to think about preserving their output via e-channel.

Creating a platform such as e-channel dependent upon the submission of content from others takes patience and time to develop. Individuals need to be able to understand the value they will gain from contributing their output to such a venue without a recognizable brand or broad awareness. Understanding how easy contributing to e-channel is seemed to be another hurdle. A comment statement was “I don’t know how to submit my contributions so I haven’t.” Getting word about e-channel out across the University has been a challenge as there are so many different scholarly communication venues available to University personnel. Being able to decipher which ones add value to busy workloads has been an issue. The tipping point for selling e-channel has been its preservation nature. While each innovative group has desired to keep its current content on its local website or media outlet, knowing content will be accurately described and preserved by e-channel has offered the release of a lot of output to e-channel. Gaining the trust of innovators has been a key achievement. Building relationships over time to gain trust has been invaluable.

While failure reporting was encouraged, very few have been submitted. Is the word “failure” too harsh? Does a failure often lead to a commercializable success and therefore should be protected and not shared with others? Innovators are encouraged to fail hard and often—it is a culture norm—meant to be iterative and therefore, perhaps not documented? Time will tell.

FUTURE COLLABORATIONS

With the value of intellectual property in mind, a future goal for e-channel is to work with the UU Health Faculty Affairs office to see if academic credit can be granted to items hosted by e-channel, especially if a peer review process can be initiated for content acceptance. Altmetric impact can be gained for such items as they are multimedia and openly available via the Internet. If e-channel is recognized locally and nationally as the one key source for innovation-related information, inclusion of faculty content will enhance individual academic portfolios for promotion and tenure.

More content from a variety of sources will be added to e-channel soon. Additional global health content and output from the UU’s quality units will be forthcoming. As new videos and company stories are created by Lassonde Entrepreneur Institute¹² participants as part of its *Launch* program, they will be described and posted on e-channel. Content originating from the University’s Entrepreneurial Faculty Scholars (EFS) various programs is being culled. The addition of EFS means all the UU Innovation Ecosystem units have employed e-channel as their official archival site,⁵ and thus a link to e-channel has been added to the Ecosystem’s website. As the student competitions described in this chapter hold their annual events, resulting output will be posted. Other innovation-related professional associations are being contacted to see if they are willing to share any content they generate. As more people get comfortable with reporting their failures, e-channel can be the source for disseminating them as well.

SUMMARY

All in all, e-channel has been a successful initiative for the EHSL. While most of the current content derives from individuals associated with the University, there is starting to be uptake from national associations and others. It has enabled library staff to transition their skills from print collections to digital ones, and it has served to document knowledge being generated by the University’s innovators. It has also assisted EHSL

with building key collaborations and partners with several internal University units and external national and international agencies. A one-stop-shop for innovation-related information, educational programs, and self-guided development, e-channel welcomes anyone to submit content by contacting the lead author of this book chapter.

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