

**A Foundation for Collaboration: Building an Institutional Repository to Preserve and Promote the Legacy of Austin Peay**

**A White Paper prepared by the APSU Faculty Leadership Program, Spring 2016**

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**APSU Faculty Leadership Program, Spring 2016**

### **Executive Summary**

Encouraging interdisciplinary activity and collaboration at Austin Peay State University (APSU) will support the institution's mission and vision while enhancing our current academic culture. An institutional repository (IR), which is a tool for consolidating the scholarly output of the university, would provide a much needed foundation for interdisciplinary activity and collaboration and could include a "Call for Collaboration" portal. The benefits of utilizing an IR as well as increasing interdisciplinary activity and collaboration include increasing research on campus by leveraging multiple expertise, allowing for applications to otherwise unavailable grants, and providing opportunities to explore innovative methods to increase student success. Additionally, an increase in interdisciplinary activities and collaborations will increase the enrollment of high performing, transfer, and international students through the enhancement of quality research and high-impact learning experiences, which will also attract high-quality faculty and staff. There are two major obstacles to encouraging interdisciplinary activity and collaboration: a lack of cross-campus knowledge and a lack of resources. Creating an institutional repository would overcome the lack of knowledge by providing accessible information to faculty, staff, and students, while simultaneously creating an opportunity to promote APSU. Additionally, an IR would provide an opportunity for university and community-wide recognition of accomplishments, which would produce healthy competition and increase motivation. After the knowledge is accessible to the campus, then the lack of resources can be addressed through increasing the use of the IR or providing additional support.

Implementation of the IR must include buy-in during the early development stages, which may include new internal grants, release-time, or healthy competition. The IR must be able to handle a wide array of archival materials, including pdfs and high quality videos and images in order to house materials such as conference proceedings, theses, field studies, research reports, works in progress, presentations, lecture series, and videos/images of creative activities. The cost of implementing and maintaining an IR will vary depending on the implementation method, and the staff and processes involved in curating the data. Software cost will either come in the form of money paid to a provider who would supply software as well as server space and bandwidth, or in an investment of personnel and physical resources to host the IR on campus. No matter which software option is chosen, there is a secondary cost for curating the data in the repository, which would likely be in the form of staff at the Woodward Library. These costs, however, are far outweighed by the benefits of an IR to the university and its faculty, staff, students, and local community. With an IR that promotes collaborations, Austin Peay can achieve its strategic goals, while preserving and promoting our legacy.

# **A Foundation for Collaboration: Building an Institutional Repository to Preserve and Promote the Legacy of Austin Peay**

## **APSU Faculty Leadership Program, Spring 2016**

### **Overview**

An institutional repository (IR) is a tool for consolidating the scholarly output of the university, providing a resource to faculty and staff for storing information and, when prudent, sharing that information with the academic community. The IR also provides a much needed foundation for interdisciplinary activity and collaboration. “Institutional Repositories (IRs) play a fundamental role in centralizing, preserving, and making accessible institution’s intellectual capital and, at the same time, they form part of a global system of distributed and interoperable repositories that provide the foundation for a new disaggregated model of scholarly publishing” (Paul, 2012, p. 2). IRs provide many opportunities to institutions, supporting both academic and administrative areas. Among these opportunities are the initial goals of interdisciplinary activities and collaboration. The benefits of these activities include increasing research on campus by leveraging areas of multiple expertise, allowing for applications to otherwise unavailable grants, and providing opportunities to explore innovative methods to increase student success. Moreover, an increase in interdisciplinary activities and collaborations will increase the enrollment of high performing, transfer, and international students through the enhancement of quality research and high-impact learning experiences. An IR is a tool to further these goals and provide a valuable resource to the university community and beyond.

### **Key Recommendation: Institutional Repository (IR)**

There are many characteristics that make Austin Peay State University (APSU) a great college to work for, but “teaching environment” is cited most readily by faculty and staff (The Chronicle of Higher Education & ModernThink LLC, 2015). It is not uncommon to hear constituents refer to APSU as a teaching-focused institution and state this culture of teaching as a primary consideration in the decision to apply to the institution. Likewise, most faculty agree that teaching is enhanced by scholarly and creative activities. Through candid interviews conducted over the course of this semester, the Faculty Leadership Program (FLP) has learned that many of our teacher-scholars (ourselves included) believe that collaboration and interdisciplinary activities not only facilitate our teaching and scholarly endeavors, but also yield rich opportunities to engage, inform, and model professional behaviors to our undergraduate and graduate students. To that end, an IR fosters an environment that encourages interdisciplinary activity. As Armbruster and Romary (2010) state, “repositories may have many functions, but unless they serve scholarly communication first and foremost, they will not be accepted and used in the long-term. Acceptance and usage by the scholarly community is crucial to sustainability” (p. 5). This creates a mutually beneficial relationship between faculty and the IR.

In an effort to maintain APSU's trend of leading through excellence, this IR will support the core values and strategic plan of the university. Currently, APSU has no centralized clearinghouse for faculty, staff, student, and alumni research and creative works. This can limit interdisciplinary collaboration and grant writing, as well as undergraduate and graduate research opportunities.



An IR also provides visibility to the scholarly output of the university, making research and publications available to the world and providing a means of tracking access to those publications. As traffic and use increase, so will peer and student recognition of ongoing and completed scholarly, creative, programmatic, and grant-funded works. “Some studies have estimated that open access articles are cited 50% to 250% more than non-open access articles. In some disciplines, online files receive on average 300% more citations than materials available only in paper format” (The Open Citation Project, 2004). Also, “Google Scholar gives preferential treatment to materials in IRs; a paper picked up from an IR would appear higher up on the Google results list” (Ashworth, 2006). In each of these instances, we are strengthening the APSU community and culture while enhancing scholarly activity. Additionally, readily accessible knowledge of activity within and across departments will likely lead to some healthy competition to engage and promote activity within the IR.

We envision a feature that promotes new posts to the IR to facilitate APSU’s Public Relations and Marketing mission of enhancing and advancing the image of the university. Our PR & Marketing office can also use recent posts to directly promote our image to the state and region. This recognition and knowledge of diverse institutional activity has multiple benefits such as facilitating the attraction of high-quality students to participating university departments, which, in some cases, may alleviate the burden of faculty having to individually recruit for their specialized programs. In addition to facilitating the strategic initiative of growing enrollment at the undergraduate and graduate levels, raising the academic profile (and thereby the competitiveness) of APSU will also attract high-quality faculty. As these quality recruits, both students and faculty, further contribute to the IR, we will further increase our traffic. For example, a competitive university in Tennessee noted that when they began using an IR in 2012 they had 14,000 items in the repository and one million downloads; in 2016 they have grown their repository to 30,000 items and 5.5 million downloads (H. Mercer, personal communication, April 6, 2016). The breakdown of sources at the same university indicate that 56% of their IR traffic results from search engines (e.g., Google), followed by referring sites (26%) and direct links (18%), suggesting the utility of indexing with public search engines for discoverability (Jordan, n.d.). This finding further illuminates the benefit of an IR’s usage statistics. We can track quantity, frequency, and origin of traffic (just to name a few valuable statistics) in quantifying potential return-on-investment.

Once a successful marketing campaign and prominent IR attracts students seeking to engage with the research or creative process, the IR would support those students directly. Goal Priority 2 of the strategic plan requires the university to foster and support student engagement and success. Specifically, Goal Priorities 2.1.2 through 2.4.2 state that APSU will enhance quality research experiences for all students, create high-impact practices to support retention and student growth, and explore innovative methods to promote success. All goals should be measured, and the IR can be used as one instrument of measurement by housing and tracking student scholarly and creative work. The IR also lends itself to Goal Priority 3.5 in that it increases information technology infrastructure and is an innovation, which promotes growth (Austin Peay State University, 2015).

APSU's legacy is a vital part of our university. One of the issues that we believe the university must address is creating a connection to that legacy, especially between alumni and the current body of work going on at the university on a daily basis. Creating, preserving, and promoting a chronicle for our university may provide a number of benefits from alumni development to entrepreneurial opportunities. People of all types -- from current students to alumni, community members, and investors -- want to be a part of successful institutions. APSU has a tradition of success and academic rigor. ASPIRE will create a singular focal point easily accessible for anyone, not only as a historical narrative and a link to the past work of our alumni, faculty, and staff, but also as a promotion of the continuing scholarly and creative work of our institution. It may serve as a tool for both on- and off- campus entities, such as community leaders and regional or national entrepreneurs who are researching opportunities for creating relationships in Clarksville or Middle Tennessee.

### **Faculty Obstacles and Opportunities**

Interdisciplinary activities and collaborations cannot happen if faculty are unaware of what is occurring outside their departments. Additionally, Brian Quinn, a Social Science Librarian, states, "faculty are much more likely to identify with and cooperate with requests from their own tribe, as it were," (2010, p. 71). Not only are faculty unaware of potential interdisciplinary activities and collaborations, but they are also uninformed about available tools, software, equipment, and external grants. Creating an IR would overcome this major obstacle and would provide accessible information to faculty, staff, and students, while simultaneously creating an opportunity to promote APSU. "A high profile IR may be used to support marketing activities to attract high quality staff, students, and funding" (Jain, Bentley and Oladiran, 2008, p. 3). Currently, the necessary information for encouraging interdisciplinary activities and collaborations is unavailable or too difficult to find.

There are two major obstacles to encouraging interdisciplinary activity and collaboration: a lack of cross-campus knowledge and a lack of resources. As previously stated, the FLP believes the knowledge shared by an IR solves the former problem. Only after this information is available can the lack of resources be addressed. A major resource issue is the lack of time or flexibility to accommodate interdisciplinary activities and collaborations due to rigidity of class schedules, rigidity of accommodating allocation of work hours outside of the classroom, and, in some cases, too many departmental committees. This lack of time is exacerbated by the fact that faculty often teach courses that do not easily equate to their research interests or expertise. There is also a lack of tools and equipment that would promote interdisciplinary activities and collaborations, such as the Statistical Package for the Social Sciences (SPSS), NVivo software for qualitative data analysis, and grant management training. Additionally, the grant training issue is intensified due to a lack of support staff. For example, we heard from multiple internal and external grant awardees that having to navigate and often self-teach grant management as well as budget requirements and reporting was a negative, unforeseen, consequence of being awarded grant monies. It was also noted that the potential legal ramifications (and becoming versed therein) for inaccuracies or non-compliance, regardless of intent, was intimidating. Having support staff properly trained in these internal, state, and federal requirements would not only protect the

university from potential litigation, but alleviate some of the perceived burden of applying for and potentially receiving competitive grants. Finally, we've also identified an overall issue of motivation underlying the lack of resources, as there is currently little to no incentive for interdisciplinary activity or collaboration. By making all scholarly research available and easily searchable, the IR provides faculty with an incentive to promote themselves, as well as the university, by creating and publishing quality research. "The usage statistics supplied by repository services can be very impressive and act as a strong incentive for researchers to contribute. By collecting and presenting various metrics of repository usage, repository managers are able to offer a valued service to both researchers and institutions" (Confederation of Open Access Repositories, 2013, p. 10). Furthermore, an IR would provide an opportunity for university and community-wide recognition of accomplishments, which would produce healthy competition and increase motivation.

### **IR Implementation Suggestions**

The benefits previously discussed are only attainable with adoption and regular use of the IR for its initially intended purposes of increasing cross-campus knowledge and opportunities for collaboration. We will need to gain stakeholder buy-in during the early stages of development and/or acquisition of the IR, as well as to foster momentum by encouraging faculty and staff (and eventually students) to take advantage of this powerful tool. As with any university, there are likely diverse levels of motivation and abilities in terms of scholarly activity. Those looking to strengthen abilities will benefit from university instituted support initiatives, whereas those needing to strengthen motivation will benefit from activity appropriate incentives (Hanover Research, 2014). Possible incentives may include internal grant monies for faculty collaboration or otherwise scholarly and creative endeavors, and/or release time that would follow a proposal and outcome report format to facilitate accountability. The determination of success should be independent of yielding publication, grant-capture, display/performance, or similar externally determined outcomes. Both of the above scholar-types would also likely benefit from a voluntary research mentor. Research mentors could be discipline-specific or carefully matched with an interdisciplinary emphasis. It is worth considering if mentors of first-year faculty would also serve as research mentors or if it makes sense to have two mentors. Part of using and/or reporting for internal-grant or release time could include use of the IR as a means to continually feed momentum. Additionally, research mentors would be expected to promote and informally train mentees on use of the IR.

As with any organizational culture shift, there must be buy-in across stakeholders; in our case this includes students, all levels of faculty, staff, and senior leadership, with additional consideration for our broader community. Top-down or bottom-up adoption, unto itself, will eventually halt progress. For these reasons, it is crucial for buy-in across institutional levels; leadership should provide institution-wide foundational support for the adoption and use of the IR, as well as encourage it. Providing needed support for increased collaborative activities also demonstrates that APSU values this type of productivity and acknowledges that it requires time and support to be successful, defined broadly. Low-cost ways to increase faculty awareness and buy-in include informational or training presentations at the departmental/college levels, events

showcasing the IR, faculty testimonials, asking faculty to collect student work, and directing traffic through cross-posting on social media platforms (Hixson, Henry, & Neville, 2013). While it is still envisioned as a voluntary activity, we believe that allowing collaborative/IR activities to be listed and accepted in some capacity across all departmental retention, tenure, and promotion dossiers will further incentivize adoption and use.

In order to stay current, functional, and integral, any IR must be properly staffed and certain technical requirements must be met. Initiating an IR with data collection and its archive would take considerable commitment of resources from the university. There are several options here. The simplest of these is to use the staff and infrastructure that already exists, specifically the library and its staff who already have the expertise in archiving this type of material. The library is currently looking into digitization options and has discussed an IR with the FLP. Additionally, with the redevelopment of the Austin Peay website, it might be important to consider the IR's promotion and place in this new redesign.

The IR must be able to handle a wide array of archival materials. PDFs require minimal storage space; however, archiving videos and high resolution photography/artwork will consume storage rapidly. This archive must continually grow to meet the needs of an ever-increasing number of items stored digitally. Popular IR software usually supports most standard and many newer forms of digital media.

The FLP recommends that the IR house faculty/student publications including conference proceedings, theses, field studies, research reports, and works in progress. Presentations, lecture series, and videos/images of creative activities, such as APSU's existing *Zone 3*, *The Freshman Legacy*, *Theta Delta*, and others, will also be housed in the repository. In addition, the IR will include the previously mentioned "call for collaboration" portal with a searchable index of IR-participating faculty and their respective research interests, expertise, and collaboration needs. This portal is a one-stop shop for those who want to collaborate on projects or need information about facilities and/or equipment and materials on campus that are available for use. See Appendix C for initial categories.

### **Cost of IR Implementation and Data Curation**

The cost of implementing and maintaining an IR will vary depending on the implementation method, and the staff and processes involved in curating the data. The survey in Burns, Lana, and Budd (2013) found the median price of implementing an IR to be \$25,000 with a median annual cost of \$31,500. Costs varied widely depending on factors such as the size of the institution, the number of documents housed in the repository, and where the software is hosted.

The FLP has researched some of the software options for IRs for a better understanding of the current environment. While a full study of these options would be required before the university selected a system, some core details can be presented here. We have identified three main software options: 1) the university could pay a provider to host the IR externally, 2) IR software could be downloaded and installed on university systems, or 3) a custom IR system could be developed by APSU. Each option has different costs and impacts the Office of Information Technology (OIT) to different degrees. Externally hosted options are more expensive up-front,

but the impact on OIT would be minimal. Much of the popular IR software is open source, and therefore free to download, however OIT man-power and hardware resources would need to be devoted to installing, configuring, and maintaining the system. Developing an IR in-house would involve significant OIT resources and would take the longest amount of time to complete. Regardless of which solution is ultimately chosen, there will be a cost to the university. The cost will either come in the form of money paid to a provider who would supply software as well as server space and bandwidth, or in an investment of personnel and physical resources to host the IR on campus. For a more detailed breakdown of popular repository systems and sample costs, see Appendix D.

There will be a secondary cost incurred for curating the data in the repository no matter which software option is chosen. The majority of this cost would likely be in the form of personnel at the Woodward Library who would curate the IR. The Burns et al. (2013) survey found a median of 1.9 full time equivalent (FTE) work on the repositories. This result included librarian personnel as well as IT staff, which indicates that staff cost can vary depending on the software option.

### **Future Recommendations and Considerations**

The IR is an endorsement of the university's commitment to research, innovation, and scholarship. Though it does send a strong message that is mission-forward and inclusive, the IR should be viewed as a constantly evolving entity. The FLP feels the IR can grow and should continue to grow with time. A healthy IR creates a tradition of institutional legacy, a timeline of what has come before, bridging into the work that continues. This is not just a museum of sorts, but also a living record of the university's activities. No website that remains stagnant will continue to be utilized to its fullest extent. Once the IR is utilized consistently by the APSU community, we feel we can expand the program to encompass some or all of the ideas listed below:

- Tracking of student internships
- Tracking of student employment post-graduation
- Expanding this digital space into a physical space, such as centers, displays, or collaborative environments
- Lecture series or symposium that promote collaboration
- Archiving recordings of lectures, symposium, and series
- Tracking programs, initiatives, and exhibits
- Listing instrumentation and software available on campus
- Outreach and recruitment of high achieving students
- Community involvement activities
- Entrepreneurial opportunities within the region
- APSU-funded internal collaborative grants
- Meeting notes and policies
- Important records such as accreditation reports and documents
- Maintenance of role-specific content for ensuring continuity
- Increased support staff to implement the above changes, as needed.

These ideas are ways we can help the IR gain momentum within our community, in addition to preserving institutional memory, whether it be at APSU or our global community. For instance, tracking students post-employment will allow us to help current students network to find jobs. Tracking this data would also help us recruit future students by showing them listings of where current students have been employed post-graduation. It is our hope that collaborations might occur naturally as a result of an IR, but a physical space would encourage these collaborations after an online space was already functioning in this capacity. Some programs, initiatives, or exhibits might not get the media attention they need to reach those who need it the most, or the donors that could help the most. Expanding the IR to incorporate these types of activities would give them one more venue where they might get the exposure they require. Bringing back a lecture series, such as the Provost's Lecture Series or the Library's Athenaeum, could help show our community and ourselves the innovation that is occurring at APSU. Recording and archiving these types of scholarship would broaden the scope and visibility of these wonderful events occurring on our campus. Allowing the IR to serve as a place where lists of university-wide site licenses and software can be found will provide researchers with the information that might be the missing components for their research. Increasing the perception of innovation occurring on campus to potential students, the community, and with area businesses will improve our interaction with each of these groups.

As collaborations are being encouraged across our campus, providing a monetary incentive in the form of an internal grant, similar to a Revitalizing Academic Success Initiative (RASI) or Student Academic Success Initiative (SASI), would help increase our efforts in this area. Meeting notes and important documents across campus are dispersed across university webpages. Centralizing these notes digitally would make searching for these easier and would make them more available for the average consumer. In addition to these direct incentives, there are also inherent incentives provided by core functionality of the IR. As Jain, Bentley, and Oladrian (2010) note: "Many authors lack time, resources, or expertise to ensure preservation of their scholarly work" (p. 4). An IR would solve this problem for any materials stored inside it. Also, retiring members of our community often take their knowledge and contacts with them. Similarly, documents associated with various leadership roles on campus (e.g., frequently used forms, departmental policies, and accreditation reports) are housed in desk drawers or on the current leader's individual computer. Allowing a centralized location for this information to be deposited would facilitate change management, making transitions smoother and ensuring continuity across personnel transitions. While the initial IR will probably require restructuring of current positions, advanced functionality of the IR that could be of interest in the future might require additional support staff.

There is the possibility for institutional changes to occur alongside the implementation of an IR. Any future committees that are established to develop an IR should consider the broader implications an IR could have on the APSU community and within departments. If departments are allowed to think freely and creatively, some positive ideas might be generated that could allow faculty and staff more flexibility in their time, something that could enable collaborative experiences. Among these changes, some subtle and some profound, are the idea of reinstating a common hour, integrating more hybrid courses that meet fewer times per week, course schedule

flexibility, or even a radical rethinking of the university course scheduling (see Appendix E). Some of these ideas were discussed in informal meetings, but not all were popular or well-received. However, the FLP believes they at least warrant further discussion and flexibility in individual time-management should be encouraged.

## **Conclusion**

The FLP was tasked with developing a project to culminate our experience during this program. After shadowing key personnel on campus, listening to presentations from chairs, deans, and administrators, and deliberating amongst ourselves, the FLP decided to focus on devising a recommendation for encouraging interdisciplinary activity at APSU. The vehicle that we decided upon is the creation of an IR. IRs foster an environment suitable for increased interdisciplinary activity and collaboration, while also providing many other resources and benefits to the university and its faculty, staff, students, and our surrounding community. Austin Peay is already aspiring to achieve the university's strategic goals. With an IR, Austin Peay can ASPIRE to reach them in a new way, one that promotes collaborations, while preserving and promoting our legacy.

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**Appendix A: Example Institutional Repositories to aid in developing APSU's IR**

<b>Institution</b>	<b>Institutional Repository Name</b>	<b>Website URL</b>
<b>University of Tennessee - Chattanooga</b>	UTC Scholar	<a href="http://scholar.utc.edu/">http://scholar.utc.edu/</a>
<b>Middle Tennessee State University</b>	JEWLScholar	<a href="http://jewlscholar.mtsu.edu/">http://jewlscholar.mtsu.edu/</a>
<b>East Tennessee State University</b>	Digital Commons	<a href="http://dc.etsu.edu/">http://dc.etsu.edu/</a>
<b>Tennessee State University</b>	Digital Scholarship	<a href="http://digitalscholarship.tnstate.edu/">http://digitalscholarship.tnstate.edu/</a>
<b>University of Memphis</b>	Electronic Thesis & Dissertation (ETD) Repository*	<a href="https://umwa.memphis.edu/etd//">https://umwa.memphis.edu/etd//</a>
<b>University of Tennessee-Knoxville</b>	TRACE	<a href="http://trace.tennessee.edu/">http://trace.tennessee.edu/</a>
<b>University of Tennessee Health Science Center</b>	Digital Commons	<a href="http://dc.uthsc.edu/">http://dc.uthsc.edu/</a>
<b>University of Texas at Austin</b>	Texas ScholarWorks	<a href="https://repositories.lib.utexas.edu/">https://repositories.lib.utexas.edu/</a>
<b>Texas A&amp;M University- Kingsville</b>	Digital Repository*	<a href="http://cdm16771.contentdm.oclc.org/">http://cdm16771.contentdm.oclc.org/</a>
<b>Florida State University</b>	FSU Research Repository	<a href="http://diginole.lib.fsu.edu/repository">http://diginole.lib.fsu.edu/repository</a>
<b>Western Kentucky University</b>	TopSCHOLAR	<a href="http://digitalcommons.wku.edu/">http://digitalcommons.wku.edu/</a>
	<b>* Predominately dissertation and theses</b>	

## ***Appendix B: Alternative IR Names***

Acronyms:

- AP SPIRAL (Scholarship, Publications, Innovation, Research and Learning) - a description of what the IR contains. This title was probably the least popular. The predominant reaction was that it really did not evoke a positive image.
- AP CIRCUS – Chronicle (Catalog/Collection) for Institutional Research and Collaborative University Scholarship – referencing the legacy, mission statement, etc.

In reference to the Governor mascot:

- "The Monocle Chronicle" - suggests a living document/archive that is the story of the university
- "The Top Hat" - refers to excellence
- "The 'Stache" - a pun, playing off the idea of a repository (stash)

## ***Appendix C: Categories***

Example of IR Categories:

- Administration
  - The IR could store the president's Annual Reports and papers of past presidents.
- Alumni
  - An IR could connect alumni with the legacy they helped develop and could be used for career tracking.
- Centers
  - The IR would promote centers that need to attention both from the community and the university. Examples are: Center for Excellence for the Creative Arts and Center of Excellence for Field Biology
- Colleges and Schools
  - Each college has active faculty, all of which present their work at a variety of venues in many mediums. The IR could archives these presentations.
- Grants (list of funded grants and lists of grant opportunities by specialization)
- Library
  - University Archives and Special Collections
    - Academic council minutes and university yearbooks could be archived.
- Research
  - Faculty and staff research narratives/interests and expertise/skills could be archived to promote collaboration and spread awareness across campus.
  - Undergraduate and graduate scholarly and creative work could also be archived.
- Scholarly and creative works
  - Graduate and undergraduate theses, field studies, research reports, and publications will need to be promoted in the IR.

## ***Appendix D: Sample of Institutional Repository Software***

There are a variety of possible institutional repository software systems. Several systems are listed here in order to present potential solutions and basic costs. This information is only representative and is not meant to be complete. The costs here do not include the costs associated with data curation. A complete evaluation of potential institutional repository systems would need to be completed before implementing our system.

In 2014, UNESCO (Bankier and Gleason, 2014) evaluated five institutional repository systems:

- Digital Commons
- Dspace
- EPrints
- Fedora
- Islandora

At the time of the article, Digital Commons had the most features, but the tools continue to be updated and new ones have been created. UNESCO used three primary sites to determine which systems to evaluate. Those sites continue to be updated, and currently, the most popular systems listed with the number of sites using each system are:

- Registry of Open Access Repositories (ROAR, 2016) lists the 5 most used systems as:
  - Fedora (50)
  - OPUS (Open Publications System) (71)
  - Bepress (Digital Commons) (388)
  - EPrints (591)
  - DSpace (1645)
- Directory of Open Access Repositories (OpenDOAR, 2016) lists the 5 most used systems as:
  - dLibra (60)
  - OPUS (73)
  - Bepress (Digital Commons) (145)
  - EPrints (416)
  - DSpace (1327)
- Repository66.org (Repository66.org, 2016) lists the 5 most used systems as:
  - Fedora (40)
  - ETD-db (44)
  - BEPress (Digital Commons) (168)
  - EPrints (468)
  - DSpace (1225)

The following table lists the 4 most popular systems based on the information above. While OPUS is popular, based on the previous information, its documentation and website are almost entirely in German, so it is not included.

Software	Company / Organization	Website	Hosted Offsite	Self-hosted Onsite	Software License	Software Price
<b>DSpace</b>	DuraSpace	<a href="http://www.dspace.org">http://www.dspace.org</a>	Yes, through various service providers, <a href="http://www.duraspace.org/service_providers">http://www.duraspace.org/service_providers</a>	Yes	BSD	Free
<b>EPrints</b>	Eprints	<a href="http://eprints.org/uk/">http://eprints.org/uk/</a>	Yes, through EPrints Services, <a href="http://www.eprints.org/uk/index.php/services/">http://www.eprints.org/uk/index.php/services/</a>	Yes	GPLv3 and LGPLv3	Free
<b>Digital Commons</b>	Bepress	<a href="http://digitalcommons.bepress.com">http://digitalcommons.bepress.com</a>	Yes, through Bepress, <a href="http://digitalcommons.bepress.com/about/support/">http://digitalcommons.bepress.com/about/support/</a>	No	N/A	N/A
<b>Fedora</b>	DuraSpace	<a href="http://fedorarepository.org">http://fedorarepository.org</a>	Yes, through various service providers, <a href="http://www.duraspace.org/service_providers">http://www.duraspace.org/service_providers</a>	Yes	Apache License, Version 2.0	Free

The software for many options is free since they are open source projects. However, the cost for hosting the software will depend on which hosting option is chosen. If the software is self-hosted at APSU, the associated costs will involve the server-space and the infrastructure needed to support the software, as well as the man-hours needed to install, manage, and support the software.

If the software is hosted through a service provider, which would be similar to how D2L is hosted, the cost would largely be moved to paying the hosting provider. The hosting cost would depend on the software chosen and the particular agreement with the chosen hosting provider. The following table is provided to give an idea of the costs involved; actual costs will depend on a variety of factors such as the actual service plan, optional features, amount of storage, etc.

Software	Hosting Option	Approximate Price/Year	Storage Space	Reference
<b>DSpace</b>	DSpaceDirect Small	\$3750	75 GB	<a href="http://dspace-direct.org/pricing">http://dspace-direct.org/pricing</a>
<b>DSpace</b>	DSpaceDirect Medium	\$5500	150 GB	<a href="http://dspace-direct.org/pricing">http://dspace-direct.org/pricing</a>
<b>DSpace</b>	DSpaceDirect Large	\$8250	250 GB	<a href="http://dspace-direct.org/pricing">http://dspace-direct.org/pricing</a>
<b>Eprints</b>	Eprints Services	Setup \$13,425; Annual fee \$7,425	50GB	<a href="http://www.eprints.org/uk/index.php/services/">http://www.eprints.org/uk/index.php/services/</a>
<b>Digital Commons</b>	Bepress	\$26,008	unlimited	<a href="http://digitalcommons.bepress.com/about/contact/">http://digitalcommons.bepress.com/about/contact/</a>
<b>Fedora</b>	Lyrisis	\$ 13,650 initial setup + hosting; \$7,500 annual renewal	200 GB; 10,000 items	<a href="https://www.lyrisis.org/LYRISIS%20Digital/Pages/Repository.aspx">https://www.lyrisis.org/LYRISIS%20Digital/Pages/Repository.aspx</a>

### ***Appendix E: Additional Changes Investigated for Increasing Faculty Time for Scholarship***

- Common hour – This idea was posed to a number of chairs. The idea was intriguing but was met mostly with resistance since the bigger programs – ones that had a large number of majors but also a large number of core course sections – just do not have the luxury of losing any time during the day in order to schedule all of their in-demand courses. Those who perceived it as potentially feasible believed it would only be useful if it was structured (for example, every other Monday is reserved for collaboration meetings).
- Hybridization of all core courses – This idea came from one of the chairs who has had to deal with a lack of space for the program's courses. By scheduling core classes two days a week but only meeting one day a week with the other day being an online day, the program was able to double the number of courses offered and free up space for these extra courses. Additionally, this option might be viable for certain types of upper level program courses. When asked about this option, several chairs gave a favorable response.
- Radical rethinking of the university course scheduling – One of the more radical ideas for reworking the weekly course loads for faculty might be to take on a university model that occurs at a few schools around the country and even in APSU's own College of Education. Eliminating the MWF course scheduling and moving to a MW/TF/F course schedule does not reduce any faculty loads, but does make scheduling a bit more flexible and may allow departments to 1) have more time to plan for meetings and program events on Fridays; 2) may address some faculty's constant requests for longer class times for certain courses; and 3) may give faculty a sense of more time for scholarship and/or creative activities. There are fewer class periods per week for the same faculty load.