COLLABORATIVE EFFICIENCY REVIEW

August 2012

Prepared By:
Office of State Budget and Management in conjunction with
The University of North Carolina
Executive Summary

UNC General Administration (GA) and the Office of State Budget and Management (OSBM) analyzed potential efficiencies of six program areas. This report describes the results of this review and recommends strategies for improving performance.

Advancement

Peer benchmarking and staffing analysis indicate some UNC institutions are not well positioned to take advantage of the potential return from major gifts, including planned giving. Similarly, the performance of some annual fund programs is mixed. Additional capacity can increase the number and average value of major gifts, and preferred vendors can lower costs and improve the performance of annual fund programs. The project team recommends the below strategy.

- Strengthen major gift prospect management systems
- Provide additional capacity to institutions with a demonstrated need and readiness
- Establish and administer preferred vendors that support advancement programming

Internal Audit

Internal auditors promote effective and efficient operations. The level and depth of internal audit services provided by audit offices across the UNC system varies due to differences in staffing, skill levels, and workload. The project team recommends a central audit group be established to service UNC’s nine smallest institutions and UNC GA. Key benefits of the central audit group are described below.

- Expands access to specialized skills
- Mitigates risks from personnel transitions and creates career growth opportunities
- Promotes standardization and practice consistency within the group and system-wide

Residency Verification

Each UNC institution administers its own residency verification program for applicants. With many prospective students applying to multiple UNC institutions, approximately 26% of classification efforts are duplicated. Because these duplicate classifications are made using different processes, between 5% and 12%, of these duplications are classified inconsistently. The project team recommends the classification process be centralized (final appeals would still be adjudicated by the current joint UNC and NCCCS State Residence Committee). Benefits from centralization are listed below.

- Eliminates inconsistent and duplicate classifications
- Reduces burden on campus administrators
- Simplifies classification for prospective students
- Potentially serves the NC Community College system

E-Journals

E-journal prices have grown nationally by about nine percent per year, but e-journal expenditures across the UNC system have grown by only five percent per year. The UNC system’s strong performance is dampened by declining levels of access from some publishers - despite higher
expenditures. It is also threatened by continued e-journal inflation that far exceeds budget growth in higher education. To help contain expenditure growth and expand access, the project team recommends the strategy below.

- Share expenditure and access data system-wide
- Develop a system-wide plan to mitigate the risk of diminishing access
- Streamline the purchase of common library products
- Evaluate ways to increase access to UNC research, such as open access publishing

**Procurement Services**
The UNC system is realizing savings from the Combined Pricing Initiative (led by UNC GA’s Information Resources Division), which provides system-wide contracts and licensing agreements and increased efficiency with the implementation of the e-procurement initiative from the UNC FIT team. The project team recommends both initiatives are continued and that UNC GA and the Department of Administration’s Division of Purchase and Contract examine current procurement policies to promote purchasing cooperation between campuses.

**Travel**
When travelling on business, UNC personnel can use either their personal vehicle or vehicles leased by their institution from North Carolina’s Motor Fleet Management (MFM) service. The study team identified a cost to operate a MFM leased vehicle of $.60 per mile. Reimbursement rates for personal vehicle use vary from $.30 per mile to $.555 per mile (IRS business standard mileage rate) depending on the distance traveled. The project team recommends a request to OSBM to allow an exception for the UNC system for the use of a single reimbursement rate (IRS business standard mileage rate) for all authorized business travel in a personal vehicle. Savings from this change are listed below.

- The cost differential between the IRS rate and the University operating cost of the owned vehicles
- Administrative efficiencies from operating a single travel reimbursement process

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Type of Efficiency</th>
<th>Year 1</th>
<th>Year 3</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal Audit</td>
<td>Savings</td>
<td>1%</td>
<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Residency Verification</td>
<td>Burden Reduction (hours)</td>
<td>7,500</td>
<td>22,500</td>
<td>37,500</td>
</tr>
<tr>
<td>Procurement</td>
<td>Savings</td>
<td>$812,035</td>
<td>$2,436,105</td>
<td>$4,060,175</td>
</tr>
<tr>
<td>Travel</td>
<td>Savings</td>
<td>$31,000</td>
<td>$248,000</td>
<td>$697,500</td>
</tr>
<tr>
<td>E-Journals</td>
<td>% Cost Avoidance*</td>
<td>No Change</td>
<td>4%</td>
<td>8%</td>
</tr>
<tr>
<td>Advancement</td>
<td>% Increase</td>
<td>1%</td>
<td>2%</td>
<td>5%</td>
</tr>
</tbody>
</table>

*Cumulative Savings in Year After Implementation:

<table>
<thead>
<tr>
<th>Program Area</th>
<th>Type of Efficiency</th>
<th>Year 1</th>
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<td>% Increase</td>
<td>1%</td>
<td>2%</td>
<td>5%</td>
</tr>
</tbody>
</table>

*Cost avoidance is the inflation adjusted difference between e-journal prices and UNC e-journal expenditures.
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I. Introduction

The University of North Carolina (UNC) system is distinguished by its ability to excel amid dynamic and demanding circumstances. Continued focus on operational performance and improved efficiency is increasing productivity and reducing costs system wide. The purpose of this review was to continue the focus on operational performance and identify additional strategies to improve the efficiency and effectiveness of selected programs in the UNC system.

Scope
In February 2012, UNC General Administration (GA) requested the Office of State Budget and Management (OSBM) collaborate on analyzing identified program areas for potential efficiencies. Initial brainstorming sessions and interviews with subject matter experts from UNC GA, interagency councils, and university officials helped frame how potential shared services or efficiencies could be evaluated for future implementation.

Potential efficiencies were evaluated in terms of burden reduction, process simplification, increased effectiveness, cost savings and/or avoidance, and/or improved access to specialized capabilities. An assessment of the complexity and difficulty of implementing changes and achieving the value proposition was also evaluated. Potential value propositions, along with recommendations for focus, were presented for review and six areas were requested for further study by the project team.

Data Collection
Survey data from UNC institutions was a primary source of information for analysis. Surveys collected data about the range of capabilities for each program. This included information about the number of personnel, how personnel were assigned to functional areas, and range of training.

Surveys also requested information about program outputs. Output related information provided one way of viewing the performance of each program area. To the extent practicable, surveys also requested information about outcomes, capacity, and productivity to supplement other performance information. If the burden from collecting useful quantitative responses (due to difficulties in accessing data, maintaining consistency and completeness across practice area, etc.) clearly outweighed the estimated value of the data, then qualitative questions were used instead. Although subjective, qualitative responses provided a range for analysis useful in formulating options and recommendations.

To improve the accuracy and utility of survey information, subject matter experts from across the UNC system questions volunteered to test the survey. Questions were modified, eliminated, and added based on feedback. Teleconference calls were arranged soon after surveys were distributed to assist institutions in interpreting the questions and to help coordinate responses. Following receipt of the survey response, the project team engaged campuses to normalize data and make sure information was interpreted as intended. Finally, survey responses were compiled and shared with the campuses for review.
The project team also conducted interviews and conference calls with UNC practitioners. Research using other data sources, including published reports, literature reviews, and interviews with officials from other state university systems supplemented the project team’s analysis.

Analysis and Recommendations
The study team analyzed data to identify trends, benchmarks, and variance. Key observations for each subject area were shared with UNC campuses and are presented in this report, along with options, estimates of benefits and drawbacks, and recommendations. In general, recommendations can be achieved by changes in organization (Advancement, Internal Audit, and Residency Verification), and/or changes to policy or practice (E-Journals, Procurement, and Travel). Recommendations include proposed implementation timelines and next steps. Specific performance targets are identified in the timelines where appropriate, and are based on performance baselines described in the report. Key milestones are also included to help assess implementation progress and effectiveness.

Acknowledgements
The project team received timely and thoughtful assistance from many subject matter experts across the UNC system. As practitioners, their insights provided additional context in which to formulate and complete the study.
II. Organizational Change Efficiencies

A. Advancement

Executive Summary

Many UNC advancement programs are taking advantage of shared services and economies of scale. This report recommends three high priority initiatives be implemented to further expand capacity and improve operational efficiency. Options were prioritized based upon three key criteria:

- fiscal year 2011 performance relative to peers approved by the UNC Board of Governors;
- performance over fiscal years 2010 and 2011; and
- expressed needs from survey respondents and the UNC Advancement Council.

Each priority initiative describes current performance and proposes target objectives. The objectives are based in part on peer benchmarks from 2011, which are available electronically from UNC GA. Lower priority actions are also provided for consideration. Recommended timelines and implementation plans for each recommendation are listed below to mitigate existing structural barriers that need to be addressed. Ongoing efforts by UNC GA are also complementing these recommendations and are outlined in Appendix A.

1. Expand capacity to identify, cultivate, solicit, and service planned gifts.

Need. Outright gifts remain a primary way that donations are made to colleges and universities. Nationally, about 35 percent of individual giving comes in the form of planned gifts (i.e., bequests, charitable remainder trusts, charitable lead trusts, charitable gift annuities, pooled income funds, etc.). In addition, the largest share (14 percent) of bequest dollars in the U.S. is designated for educational organizations.

Some UNC institutions are not well positioned to take advantage of the potential return from planned giving. For example:

- thirteen institutions have one or fewer staff assigned to planned giving, and four report no staff focused on planned giving;
- six institutions contacted fewer than ten planned giving prospects in fiscal year 2011;
- only three institutions have a relationship with a financial institution to provide the necessary servicing of planned gifts;

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1 Peer benchmarks are not available for NCSSM, as their peers do not report data to the Voluntary Support of Education survey.
3 “Review of Literature on Giving and High Net Worth Individuals,” The Center on Philanthropy at Indiana University, 2011).
• nine institutions received fewer planned gifts in fiscal year 2011 than 75 percent of the institutions in their peer group; and
• six institutions received smaller planned gifts (on average per bequest) than 75 percent of the institutions in their peer group.

Additional capacity to assist in cultivating and closing planned gifts may increase the number and average value of planned gifts. Establishment of a preferred financial institution will make available critical, long-term servicing of instruments like annuities—a capacity that can expand the array of planned gifts an institute can accept. Ongoing training to educate major gift staff to recognize opportunities for planned gifts when working with major gifts prospects can help improve effectiveness. Finally, vendors can develop marketing materials to effectively educate donors about ways to make different kinds of contributions.

Objectives
a. By January 2013, a preferred financial institution as well as a preferred vendor for marketing of planned giving is available for institutions for their use.
b. By July 2013, selected institutions are sharing planned giving capacity.
c. By July 2013, all UNC institutions have the capacity to service planned gifts.
d. By January 2015, for institutions sharing planned giving capacity, the number and average value of each planned gift has increased (e.g., at or above the 75th percentile of institutions in their peer group).

2. Expand capacity to screen, rate, research, prioritize, and engage major gifts prospects.

Need. Outright gifts from individuals constitute a growing segment of philanthropic support in the United States, having increased by 3.9 percent in 2011, following a previous year increase of 4.5 percent, and most recently constituting 73 percent of all giving.4

While institutions manage major gifts activity in a variety of ways, a number of campuses have expressed need for creation or refinement of specific major gifts capacities such as alumni screening and rating, prospect research, building relationships with major gifts prospects, and comprehensive prospect management. These capacity needs may contribute to mixed results at some institutions, such as:

• eight institutions report a declining number of new major gifts or pledges closed between fiscal years 2010 and 2011;
• six campuses report declining numbers of prospects profiled (researched) and prospects assigned to development officers for introduction, cultivation and solicitation between fiscal years 2010 and 2011;
• major gifts productivity at seven institutions is less than 75 percent of the institutions in their peer group.5

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4 For more information see “Giving USA, 2012.”
5 Major gift productivity was calculated by dividing the total amount of the three largest individual gifts by total support, as reported in the 2011 Voluntary Support of Education Survey.
nine UNC institutions report profiling more prospects per year than are assigned to staff for qualifying visits (although institutions may determine a segment of these prospects should not be assigned for follow up); and

six UNC institutions indicated additional capacity was needed to screen, rate, research, and engage prospects who would likely qualify as major gifts prospects.

Additional capacity to screen constituent databases, rate major gifts prospects, research prospects and assign them to major gifts officers may increase the number and value of major gifts. Disciplined and strategic implementation of prospect management systems can improve operational efficiency and increase the institution’s yield from major gift prospects. Preferred prospect screening and rating vendors can lower costs and improve service levels.

Objectives

a. By January 2013, preferred vendors are available for screening and rating prospects.
b. By July 2013, selected institutions are sharing prospect research capacity.
c. By July 2013, all UNC institutions have a well-functioning prospect management system consistent with key industry standards identified by the working group.
d. By July 2013, institutions using the preferred vendors have made initial contact with the top ten percent of prospects identified by the preferred vendor.
e. By January 2015, major gift productivity at institutions sharing prospect research capacity has increased (e.g., at or above the 75th percentile of institutions in their peer group).

3. Assist overall annual fund program design, and establish preferred vendors and system-wide contracts to support annual fund programming.

Need. Annual fund programs raise operating dollars, test an organization’s messaging with target audiences, and cultivate sustained philanthropic relationships with constituents. These programs rely on a variety of fundraising vehicles (e.g., direct mail, phonathons, online giving, social media, and personal cultivation and solicitation) to increase constituent contact and participation rates. The performance of annual fund programs across the system is mixed:

- seven institutions report alumni contact rates that are lower than 75 percent of the institutions in their peer group;
- five institutions report alumni participation rates that are lower than 75 percent of the institutions in their peer group;
- twelve vendors provide direct mail services to UNC institutions, but only 60 percent of the system’s alumni receive direct mail solicitations each year;
- nine UNC institutions separately contract with Ruffalo Cody in support of phonathon programming, but service levels vary and the percent of calls resulting in a gift or pledge is higher at some institutions than others;\(^6\) and

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\(^6\) For example, the percent of calls resulting in a gift or pledge rate can be as high as 20 – 30 percent, but is generally between one and five percent.
• most UNC institutions use vendors who provide support and maintain website solicitations and gift receipts, and social media tools can be cost-effective ways of attracting initial gifts, building relationships, and developing recurring gifts.\(^7\)

Preferred vendors offering annual fund services, such as direct mail and social media, can help lower costs and improve efficiency.

Objectives

a. By July 2013, select campuses have completed annual giving assessments and designed comprehensive, high-touch annual giving programs, with increased focus on higher alumni participation;

b. By July 2013 preferred vendors are available for direct mail, phonathon, website and social media services;

c. By January 2015, alumni participation rates at institutions using preferred vendors have increased (e.g., at or above the 75\(^{th}\) percentile of institutions in their peer group, or consistent with performance targets that may be defined by a University’s performance funding model).

Other Priorities

1. Expand capacity to establish and maintain relationships with priority foundations and corporations leading to philanthropic support.

All UNC institutions received contributions from corporations and foundations in fiscal year 2011. Additional training on industry best practices used to better identify, engage, and solicit prospective corporations and foundations is ongoing.

2. Establish preferred vendors for address and contact management services.

UNC institutions use different vendors to maintain up to date alumni contact information. A preferred vendor could lower overall costs and improve service levels.

3. Establish preferred foundation auditors.

UNC foundations use a variety of firms to audit their activities, and many UNC institutions have more than one foundation. A preferred auditor could lower overall costs and make auditing services more readily available.

4. Make available solicitations licensing services.

Many states require institutions to register their fundraising activities. Some institutions have not completed registration, and may be at risk of penalty. A preferred contract for legal services could accelerate the completion of registration at lower costs.

\(^7\) Eight vendors provide UNC institutions web services. ECU, UNC-CH, NCCU, and UNCW did not report use of an outside vendor.
Recommended Implementation Plans

A working group including representatives from the UNC Advancement Council, other advancement officers, procurement officers, and UNC GA can serve to operationalize each recommendation, monitor progress, and assist in mitigating any implementation risks.

Additional Capacity - The steps outlined below provide a framework for developing a strategy to add and share capacity in two areas: planned giving and prospect research.

A.1.1 – By October 2012, the working group outlines a strategy for acquiring additional capacity. Key questions the strategy should address are listed below.
   a. Document the criteria (or indicators of readiness) that constitute goals in processes related to planned giving, prospect research, and prospect management.
   b. Assess and select the best method for acquiring and paying for additional capacity (e.g., insourcing, outsourcing, etc.).
   c. Assess and determine what institution hosts the additional capacity (e.g., at UNC GA, at one or many institutions). UNC GA has provided additional staff capacity in the past. The University of Texas system pays the salaries and benefits of centralized staff who support planned giving, while travel expenses are paid by institutions within the system.

A.1.2 – By January 2013, institutions requesting additional capacity provide the working group a readiness plan demonstrating additional capacity would be effectively used. At a minimum, the plan should:
   a. Demonstrate the completion of recent screening, including the number of major gifts and planned giving prospects identified for which no existing staff are currently assigned to engage;
   b. Show evidence of completed (and ongoing) training of major gift officers and describe the methods used to prioritize prospective donors;
   c. Address how the institution is ready to implement (or already has) the criteria documented in A.1.1.(a); and
   d. Document the procedures to accurately account for the amount of time and results from the additional capacity provided to the institution (e.g. number of consulting days, number of new prospects identified, number of prospects contacted, a summary of the stages (introduction, education, cultivation, solicitation, stewardship) that all prospects are in and an agreement to participate in tracking those stages, etc.).

A.1.3. – By July 2013, the working group selects institutions most ready to take advantage of additional capacity, based upon the evidence from A.1.2.

A.1.4 – By July 2013, selected institutions are using additional capacity and reporting performance (as described in A.1.2.(d)).

Preferred Vendors - The below outlines steps for establishing six preferred vendors: financial institution services, education and marketing of planned giving, prospect screening and rating tools, direct mail services, phonathon services, and website/social media services.
A.2.1 – By October 2012, the working group has a consensus list of technical, operational, and performance requirements for each preferred vendor.
A.2.2 – By November 2012, the working group issues an RFP.
A.2.3 – By January 2013, the working group (or other designee) selects preferred vendors.
B. **Internal Audit (IA)**

**Executive Summary**

Three functional models were analyzed to determine how limited internal audit resources across the UNC system could be aligned to provide increased access to specialized skills, reduce burden from investigative audit/hotline report at smaller offices, and increase stability during internal audit staffing transitions. Advantages and disadvantages of decentralized, regional and hybrid models were assessed. The project team recommends the UNC system implement a model that would leave the eight largest institutions decentralized while centralizing the internal audit function for the smaller ten institutions.

**Analysis**

Each UNC institution and UNC GA maintain an internal audit function. Internal Audit Directors report functionally to the Audit Committee of their Board of Trustees and administratively to their Chancellor. The level and depth of internal audit services provided by each audit office can vary due to differences in staffing, skill levels, and workload.

**Staffing**

As of June 2012, there are 60 internal audit positions across the university system including 15 Directors, 39 auditors, four staff and interns, and two contractors. Office sizes range from $\frac{1}{2}$ FTE to eight FTEs. Ten of the 18 internal audit offices are staffed with three employees or less. Of the 60 internal audit positions, 53 were filled positions and seven were vacant positions.

Four institutions share staff and resources through a contracting arrangement. WSSU provides internal auditing services on a part-time basis to UNCSA. UNC GA recently contracted with NCSSM to provide internal auditing services on a part-time basis.

**Skill Levels and Certifications**

UNC system auditors are well qualified, and altogether hold 77 certifications or special qualifications. Credentials include masters’ degrees and/or business or professional level certifications. Of the professional level certifications, there are 16 Certified Public Accountants, 12 Certified Internal Auditors, ten Certified Fraud Examiners, ten Certified Information System Auditors, and two Certified Internal Control Auditors across the system. Forty-two system personnel hold the 77 certifications listed.

Based on the survey results, there appears to be a gap among the internal audit offices in staff with the ability to provide specialized resources. This gap is evident in the number of specialized audits that have been conducted across the UNC system over the past three years. Based on the survey, 12 of the 18 IA offices indicated additional skills or qualifications would help meet campus needs. The top two functional areas highlighted for increased skill or qualification were Information Technology Auditors and Certified Fraud Examiners.
**Workload**
The system completed 1,073 audits between 2008 and 2011. Of the 1,073 audits completed, 913 audits were planned. Special investigations and Financial Audits created the highest level of unplanned audit workload. In addition to the audit workload, other activities such as special assignments, risk assessments, consultations, and training took a significant amount of time. The number of completed audits or activities is not necessarily indicative of the time spent in the audit area. For instance, one investigation may only take 12 hours of resource time compared to an Internal Control audit that may take 80 hours to complete.

<table>
<thead>
<tr>
<th>Totals from FY 2008 - 2011</th>
<th>Planned</th>
<th>Completed/In Process</th>
<th>Percent of Completed Audits and Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Audit Activities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information System Controls</td>
<td>102</td>
<td>87</td>
<td>5.93%</td>
</tr>
<tr>
<td>Compliance</td>
<td>133</td>
<td>117</td>
<td>7.97%</td>
</tr>
<tr>
<td>Performance/Operational Audits</td>
<td>143</td>
<td>120</td>
<td>8.17%</td>
</tr>
<tr>
<td>Financial Audits/Reviews</td>
<td>104</td>
<td>141</td>
<td>9.60%</td>
</tr>
<tr>
<td>Internal Control Audits/Reviews</td>
<td>161</td>
<td>159</td>
<td>10.83%</td>
</tr>
<tr>
<td>Special Investigations</td>
<td>70</td>
<td>211</td>
<td>14.37%</td>
</tr>
<tr>
<td>Audit Findings Follow-Up</td>
<td>200</td>
<td>238</td>
<td>16.21%</td>
</tr>
<tr>
<td><strong>Audit Activities Total</strong></td>
<td>913</td>
<td>1,073</td>
<td>73.08%</td>
</tr>
<tr>
<td><strong>Other Activities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Assignments</td>
<td>45</td>
<td>128</td>
<td>8.72%</td>
</tr>
<tr>
<td>Other (Consultations, Risk assessments, etc.)</td>
<td>234</td>
<td>267</td>
<td>18.19%</td>
</tr>
<tr>
<td><strong>Other Activities Total</strong></td>
<td>279</td>
<td>395</td>
<td>26.91%</td>
</tr>
<tr>
<td><strong>Total Audits and Activities</strong></td>
<td>1,192</td>
<td>1,468</td>
<td>100%</td>
</tr>
</tbody>
</table>

Apart from the data presented above, internal audit offices also reported over 270 hotline complaints across the system in the past three years. Not all campuses track hotline complaints. However, of the campuses who do track complaints, the volume has ranged from zero to 80 complaints over the past three year period.

**Internal Audit Organizational Structures**
In addition to the survey instruments, face-to-face meetings and conference calls were held with UNC system internal auditors as well as other public university systems in the United States. Of the four systems contacted, two internal auditing functions were decentralized – similar to UNC’s current system – and two systems were centralized. Strengths and weaknesses of the two types of systems discussed were generally similar.

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8 The information gathered in the chart is based on the Internal Audit Plans submitted by the institutions and the system-wide summary prepared by UNC GA each fiscal year.
9 The University of California system, The University of Texas system, the California State University system, and the University of Georgia system.
### Decentralized Structure

<table>
<thead>
<tr>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Permanently assigned internal auditing presence on each campus</td>
<td>• One person Internal Audit Offices</td>
</tr>
<tr>
<td>• Internal audit is viewed as part of campus and may be perceived as more</td>
<td>• Turnover creates the greatest challenge.</td>
</tr>
<tr>
<td>in touch with ongoing campus operations</td>
<td>• Inconsistent tools and procedures across the system</td>
</tr>
<tr>
<td>• Limited travel for auditors</td>
<td>• Limited availability of specialized resources</td>
</tr>
<tr>
<td></td>
<td>• Limited professional career growth and opportunities to specialize</td>
</tr>
</tbody>
</table>

### Regional Structure

<table>
<thead>
<tr>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Potential increased availability of specialized resources to campuses</td>
<td>• May increase travel for auditors</td>
</tr>
<tr>
<td>within region (if those resources exist in the region)</td>
<td>• Potential perceived resource drain from host campus (host campus resources</td>
</tr>
<tr>
<td>• Greater consistency of tools and procedures</td>
<td>now shared with other campuses in the region)</td>
</tr>
<tr>
<td>• Some availability for professional career growth and opportunities</td>
<td>• Reporting structure would create complex intra-institutions reporting</td>
</tr>
<tr>
<td>to specialize (may require relocation)</td>
<td>relationships.</td>
</tr>
</tbody>
</table>

### Centralized Structure

<table>
<thead>
<tr>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Larger IA Office provides career growth and mentorship opportunities</td>
<td>• May increase travel for auditors</td>
</tr>
<tr>
<td>• Increased availability of specialized resources to all campuses</td>
<td>• Internal auditors may not be physically present on each campus every day.</td>
</tr>
<tr>
<td>• Greatest consistency of tools and procedures.</td>
<td>• Maintaining a close relationship with the institutions may require more</td>
</tr>
<tr>
<td>• Focused oversight of system as a whole to promote efficiency through</td>
<td>effort.</td>
</tr>
<tr>
<td>standardization of practices</td>
<td></td>
</tr>
</tbody>
</table>

### Options

Based on the survey findings and research, the study team identified three options for increasing access to specialized skills, reducing the investigative audit/hotline report burdens on smaller offices, and providing increased stability during internal audit staffing transitions. The options vary in level of organizational change required as well as overall impact on the defined purpose for the study.

**Option 1 – Maintain Status Quo and focus on Improved Communication and Leadership from UNC GA**

Option one would focus on enhancing communication and leadership efforts of internal auditing across the UNC system and at UNC GA. The organizational change impact to the IA structure is
very low with option one, but so are any anticipated efficiency gains. Option one would not reduce the investigative/hotline report burdens on smaller offices or provide increased stability during internal audit staffing transitions. With an increased focus on improved leadership and communications, the access to specialized skills may be somewhat alleviated if IA Offices are willing to share resources. Increased leadership and governance from UNC GA could help develop consistent tools, manuals and templates, charters, and supplemental resources to assist smaller offices in meeting the needs for their campuses.

**Option 2 – Develop a Regional Model**

Option two creates six regional offices to supply campuses with internal auditing services versus 18 individual offices. The regional model would focus on reducing the travel for internal auditors from a fully centralized model while still increasing access to auditing skills requiring specialization, reducing investigative burdens on smaller offices, and increasing stability during internal audit staffing transitions. Six Regional Directors would be required compared to the current 15 Audit Directors, thus freeing up nine positions that could be re-programmed to high priority audit activities. Although the regional model gives one-person audit offices access to specialized skills, provides room for career growth for employees, and reduces the risk during staffing transitions, the model also directs resources away from the larger campuses to balance the need on the smaller campuses. This would be a disadvantage to larger campuses that currently operate well in executing its established audit plans.

**Option 3 – Develop a Hybrid Model**

Option three would consolidate internal audit offices for institutions with less than $200 million in spending in fiscal year 2011 into one centralized office and retains the remaining offices as stand-alone units on each campus. In this model, eight campus internal audit offices would remain intact, while ten would be consolidated into a common pool that would report under UNC GA. The ten offices that would become part of the UNC GA internal audit group would retain current staff on individual campuses. Although some travel would be required by the auditors in the central pool, efforts would be made to streamline assignments to avoid excess travel. Implementation of this model can increase access to specialized skills not currently available, provide career growth for employees, and mitigate risk associated with staffing transitions.

A fourth option, complete centralization, was also considered. Although efficiencies could be gained by consolidating all internal activities into one central organization, increased travel for all auditors and complete loss of internal auditing presence on campuses would be a significant disadvantage of a fully centralized model. When considering the centralized model against the current internal auditing environment, and the research of other university systems, the project team did not consider this a viable option for the immediate future.

**Recommendation**

Internal auditing can be a catalyst for improving an institution’s effectiveness and efficiency by providing insights and recommendations based on analyses and assessments of institutional data and business processes. Through consulting and performing independent audits, reviews, and investigations, auditors seek to provide reasonable assurance to management that effective stewardship is maintained over an institution’s resources. When properly designed and
implemented, the internal audit function can play a key role in promoting and supporting effective organizational governance.

Based on the study findings and analysis as well as research with other university systems and campuses, more can be done to increase efficiency with the internal auditing structure. The study team recommends moving forward with option three to develop a hybrid model. This model keeps most internal auditors on their respective campuses while increasing access to specialized auditing skills, increasing stability during auditor transitions, providing a path for career advancement, and reducing the impact of unplanned audit activities.

Eight campus internal audit offices would remain intact, while ten would be consolidated into a common pool reporting under UNC GA. The ten offices that would become part of the UNC GA internal audit group would retain current staff on individual campuses. Leadership of the centralized audit function would be provided by two audit managers divided into regions for administrative and management purposes. The two audit managers would report to a Director for Internal Audit (this position may also be titled Vice President for Internal Audit) who would oversee the implementation and operations of the centralized model as well as coordinate internal audit functions statewide to assist independent offices as needed.

A working team consisting of campus Internal Audit Directors and UNC GA staff should be convened to develop a plan for the implementation of the hybrid model. Items that need to be considered include developing a governance structure that defines roles and responsibilities, developing a funding model for the new structure, and establishing timelines to promote a short-term implementation strategy. Several milestones require deliberate planning and execution to fully implement the hybrid model. Below is a high-level implementation timeline.

A. **Develop governance structure** – Finalize the governance structure for the hybrid model including reporting roles and responsibilities for the Director of Internal Audit, Audit Managers, Audit Directors, and Auditors.
   a. September 2012 – Finalize the governance structure and define roles and responsibilities of all parties.
   b. October 2012 – Work with campus and General Administration leadership to confirm organizational reporting roles and responsibilities.

B. **Define the funding model** – Determine the method of funding for the new organizational structure.
   a. September 2012 – Identify funding mechanism for hybrid model. Consider new roles and responsibilities as well potential travel, tools, operating, and training costs.
   b. October 2012 – Work with campuses and UNC GA to confirm funding approach.

C. **Hire Director of Internal Audit, Audit Managers, and Information System Auditor** – Hire UNC GA infrastructure.
   a. October 2012 – Create and post UNC GA positions
   b. November 2012 – Hire UNC GA positions and begin transition process.
Once the UNC GA infrastructure is in place, the new team would continue implementation of the central pool, complete risk assessments, and finalize audit plans in the spring of 2013. The implementation goal is to have the hybrid model execute internal audit plans in fiscal year 2014.
C. Residency Verification

Executive Summary

Prospective students applying to UNC institutions are classified as resident or non-resident for tuition purposes. Classification relies on careful application of policy and procedure to produce the right outcomes. Differences in timing, organization, and procedure make it harder to consistently arrive at correct conclusions. Classifications are performed independently by each institution. As a result, classification efforts are duplicated when a prospective student applies to multiple UNC institutions.

In the fall 2011, 149,795 prospective students applied to UNC institutions. Of these, approximately 32,076 prospective students applied to multiple UNC institutions, resulting in 51,450 duplicate classifications. Of these duplicate classifications, approximately 1,780 (about six percent) were classified inconsistently. Further review found that over the past three academic years, prospective students applying to multiple institutions received inconsistent classifications approximately five and 13 percent of the time.

Centralizing residency classification activities eliminates duplicate and inconsistent residency classifications by classifying each applicant once rather than for each application. Centralization can also simplify the application process for prospective students. Once operating well, this central unit could service North Carolina’s Community Colleges, thereby easing student transfers.

Analysis

The residency classification process generally comprises three phases: initial classification, reclassification, and appeal. Survey data show UNC institutions expended about 50,000 hours (or 24 FTE) in fiscal year 2011 to handle initial classifications, reclassifications, appeals, and general inquiries from prospective students. Few UNC personnel are solely dedicated to this function. Instead, classification responsibilities are assigned to many personnel, including admissions officers, registrars, counselors, legal counsel, and others.

Phase I – The Initial Classification

Nine UNC institutions use software automation to complete most initial classifications. Automation is able to quickly determine clear cut residency classifications (e.g., a student has never lived in North Carolina). When automation is not able to determine residency, the classification must be completed manually. Survey data indicate almost half of all initial classifications were completed using automation in fiscal year 2011.

Survey responses show a wide range of time is needed to complete an initial classification, from a few seconds, if automated, to an hour, if manual. While automation quickly completes initial

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10 Prospective students have submitted complete applications. Data about duplications and inconsistency from UNC GA’s Institutional Research and Analysis, sourced at: UNC-GA IRA/SDF.QR022b/31MAY12.
classifications, survey results indicate any manual review at automated institutions takes about as long as manual review at non-automated institutions. The time needed to address general inquiries is also about the same among campuses. In addition, data suggest automation does not reduce the number of subsequent reclassifications or appeals.

Different forms between campuses in the current process make it harder for applicants to understand what information is required. As a result, prospective students may inadvertently respond incompletely (and/or incorrectly) to questions. For example, some UNC institutions primarily base initial classification decisions on information provided in the application for admission, while others require supplemental forms.

**Phase II - Reclassifications**

Approximately four percent of initial classifications are later requested for reclassification. Once enrolled, a student may request a review of his or her residency status. About half (53 percent) of those requesting a reclassification do so during their first year of enrollment. Survey respondents indicated a reclassification to resident status is commonly the result of the student having demonstrated domicile in North Carolina after the initial classification. It is not commonly a result of the student completing documentation more accurately.

Differences in the rates of overturned reclassifications (i.e., those resulting in reclassification to resident status) between similar institutions may be an indicator of procedural differences across the system. If initial classification and reclassification procedures are generally the same at each institution, then institutions with similar proportions of out-of-state students should have an equivalent percent of overturned reclassifications. Instead, institutions enrolling similar numbers of out-of-state students have different overturned rates.11

**Phase III - Appeals and the State Residence Committee (SRC)**

Students who remain unsatisfied with the result of their reclassification can appeal their status on campus. While the campus-wide FTE required to support the on-campus appeals process is considerably less than other phases of the classification process, each appeal still can be very resource consuming. About 20 percent of appeals were overturned to resident status in fiscal year 2011.

Upon completion of the campus-based appeal, a student who is still dissatisfied with their status can enter the fourth and final stage by appealing to the SRC. The SRC comprises officials from the UNC system and the system of North Carolina Community Colleges. In fiscal year 2011, 104 appeals were made to the SRC, and four were overturned. This low overturned rate by the SRC suggests UNC institutions generally classify students correctly. Institutions commented in the survey that the SRC provides an additional level of assurance and promotes consistency.

11 Percentages of applicants from “out-of-state” found in Table 59 “Number of Freshman Applications, Acceptances, and Enrollees in the University of North Carolina, Fall 2010” of Statistical Abstract located at: http://www.northcarolina.edu/stat_abstract/index.php?pageid=11232&inline=1&return_url=%2Fstat_abstract%2Findex.php%3Fpg%3Dl%3Dv%26node_id%3D11146. The number of transfers distorts this generalization, but the number of transfers is small relative to the overall number of applicants and therefore its impact is relatively small.
Graduate Schools

Initial classifications are generally requested for reclassification at greater rates by graduate students than undergraduates. Survey data indicate about 7.4 percent of initial classifications were disputed by graduate students, while only about 2.7 percent were disputed by undergraduates in fiscal year 2011. This disparity may be largely driven by prospective graduate students having, on average, more complicated residency histories.

Other Public University Systems

Variance in procedure is not unique to the UNC system. The project team contacted other public university systems in the United States. All universities who were contacted acknowledged they review duplicate applications. Some systems use automated tools and standardized application forms, but many do not. While no initiatives exist to completely eliminate duplicate applications or to centralize processes, the California State University (CSU) system reported the speed and efficiency of its automated software, which completes initial classifications in seconds, sufficiently reduced additional burden from duplicate applications. The study team also interviewed the university systems of Colorado, California, Florida, Massachusetts, New York, Texas, Minnesota, and Tennessee.

Options and Recommendation

Option 1
Develop a uniform residency application, automate all initial classifications, and expand training.

Advantages
- Form standardization and automation can reduce burden and promote consistency.
- This option pursues common sense steps that are likely amenable to most institutions, and it limits disruptions to current performance.

Disadvantages
- Automation and form standardization requires some institutions to make adjustments to current procedures.
- Some institutions would expend additional resources to become automated.

Option 2
Centralize reclassifications and appeals, but institutions continue to perform all initial classifications.

Advantages
- Reduces some burden at institutions.

Disadvantages
- Requires new procedures to ensure seamlessness between initial classifications - performed at institutions - and subsequent reclassifications and appeals performed
centrally. As a result, burden reduction and improved consistency may be partially (or fully) offset by burden and inconsistencies of new procedures.

**Option 3 and Recommendation**
Centralize the entire residency verification process in one place. The SRC would continue to perform its functions the same way.

**Advantages**
- Eliminates inconsistency and duplication.
- Staff would generally welcome relief from this function, and more time for other priorities.
- Promotes efficiency through economies of scale.
- Simplifies the application process for students.
- Could later service North Carolina’s Community College system.
- Locates all applicant information in one place to enable other potential efficiencies.

**Disadvantages**
- Requires some initial capitalization (approximately 15 FTE are needed to fully administer the process for the system).
- Graduate schools may not be receptive, as centralization would be a bigger change given the highly decentralized nature of classification programs at graduate schools.

**Proposed Implementation Timeline**

By October 2012, an intra-system working group including residency classifiers, admissions officers, and legal counsel should complete a detailed plan to establish a centralized unit that is fully operational by fall 2013 (so as to classify prospective summer 2014 students). The plan should include timelines for the below.

1. Establish a consensus of common business processes for operating a central unit, as well as functional and technical requirements needed for automation.
2. Assess options for centralizing, including insourcing, virtualization, and outsourcing, and then select an implementation approach.
3. Determine the fixed and variable costs for operating the central unit and how it would be funded (e.g., cost recovery basis, fully funded through other source(s), or hybrid, etc.).
4. Develop a concept of operations documenting who does what, how, and when, and hiring plans to adequately perform the functions described above.
III. Policy and Practice Efficiencies

A. E-Journals

Executive Summary

In fiscal year 2011, the UNC system expended $24.2 million (all fund sources) for e-journal subscriptions. While this represents a small portion of the system’s total expenditures, the return on this investment – access to information - enables high quality, efficient, and impactful scholarship and research by the system.

Between 2008 and 2010, e-journal price inflation grew nationally between ten and 24 percent, and has continued rising.\textsuperscript{12} Expenditures for the UNC system’s e-journal subscriptions, however, grew only ten percent between fiscal years 2009 and 2011. This comparison suggests the UNC system’s e-journal program performed well in an increasingly difficult market. If growth in UNC’s e-journal expenditures and national e-journal inflation rates remain the same, the UNC system would avoid an estimated $11 million in e-journal expenditures over five years.\textsuperscript{13}

Overall strong performance, however, is dampened by declining levels of access from some publishers despite higher expenditures. It is also threatened by continued e-journal inflation that far exceeds budget growth in higher education. The UNC system, like many other colleges and universities, is at risk of declining access even if growth in expenditures remains constant.

This report establishes a performance baseline, as measured by changes in cost relative to changes in access. While these measures are sometimes compared between institutions or consortiums, this report evaluates them across the UNC system for the first time. The report also identifies four “higher-risk” publishers whose growth in expenditure outpaces growth in access. Finally, the report recommends strategies to better position the UNC system to contain e-journal costs while expanding access.

Background

Higher education is addressing challenges created from high journal inflation.\textsuperscript{14} Nationally, e-journal subscriptions comprise an increasing share of overall library spending, and total library expenditures are declining as a percent of total university expenditures (from 3.7 percent in 1982

\textsuperscript{12} For more information, see: http://www.libraryjournal.com/article/CA6725256.html. Other discussions of high journal inflation can be found here: http://www.lboro.ac.uk/departments/dis/lisu/downloads/op34.pdf; http://www.lib.berkeley.edu/Collections/pdfs/monser05.pdf; and http://www2.ebsco.com/en-us/InfoProfs/serialspriceproj/Pages/index.aspx.

\textsuperscript{13} This cumulative total assumes an annual nine percent journal inflation rate against a five percent rate of expenditure growth across the UNC system.

\textsuperscript{14} The Information Access Alliance recently submitted a statement to the U.S. Department of Justice and Federal Trade Commission describing the effects of publisher pricing practices on access, see: http://www.informationaccess.org/bm-doc/iaa_doj_ftc.pdf.
to less than two percent in 2009).  

As a result, rising e-journal costs are constraining resources for other educational services, such as specialized training, priority acquisitions and e-books, and other services essential to student and faculty achievement.

These challenges are compounded by publishers using restrictive licensing terms and non-disclosure agreements. These practices make it hard for the system to share information about price and license terms, undermine negotiating position, and consequently impede access to scholarship.

A number of colleges and universities are taking action to contain costs and expand access. Some examples include:

- Over 10,000 faculty and researchers, including some from the UNC system, are abstaining from publishing, refereeing, and/or providing editorial services to Elsevier.

- The Research Libraries of the United Kingdom centrally negotiated with Elsevier and Wiley-Blackwell on behalf of research colleges and universities, resulting in lower price increases.

- The University of Oregon and Southern Illinois University used metrics similar to the ones in this report to negotiate better deals with major publishers.

In addition, many colleges and universities are promoting use of open access (OA) publishing and archiving. While its full potential and limitations are not entirely clear, evidence suggests OA can diminish access barriers inherent in traditional publishing. Instead of publishers charging institutions fees to access research, OA journals charge authors nominal fees for the cost of publishing. Some colleges and universities (including some UNC institutions) provide funds to faculty to offset these nominal fees. OA articles can be more quickly and widely accessible, at less overall cost. This consequently increases usage and overall impact, and studies demonstrate positive correlations between OA and increased citation counts of 50 to 250 percent.

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16 To learn more, see: [http://thecostofknowledge.com/](http://thecostofknowledge.com/).

17 For more information, see: [http://www.rluk.ac.uk/content/background-briefing-proposed-action-reduce-journal-prices-member-libraries](http://www.rluk.ac.uk/content/background-briefing-proposed-action-reduce-journal-prices-member-libraries).


20 The UNC-CH and UNCG libraries administer OA funds, and NC DOCKS and other repositories complement OA by aggregating and making freely accessible the research produced by UNC faculty.

21 For more information, see [http://www.earlham.edu/~peters/fos/newsletter/02-02-06.htm#know](http://www.earlham.edu/~peters/fos/newsletter/02-02-06.htm#know), [http://opcit.eprints.org/oacitation-biblio.html](http://opcit.eprints.org/oacitation-biblio.html), and Alma Swan, “The Open Access Citation Advantage: Studies and
Perhaps most important for leading research institutions like the UNC system, by accelerating and enhancing accessibility, OA generates greater returns (and impact) from R&D compared to traditional publishing. Cost-benefit analyses by the Joint Information Systems Committee show transitioning to OA would produce greater benefits than costs, as measured by higher returns from R&D and decreased publishing costs.\textsuperscript{22} Finally, OA may already be contributing to a shift in existing publisher pricing models.\textsuperscript{23}

**Summary Analysis**

Additional investment in e-journal subscriptions should expand access, as measured by changes in expenditures compared to changes in access. To evaluate changes in expenditure and access, metrics from 13 publishers were analyzed covering the period between calendar year 2009 and 2011.\textsuperscript{24} Metrics representing greater access include:

- Increases to the number of titles and uses;
- Growth in cost-per-title (CPT) and cost-per-use (CPU) that is lower than growth in expenditure (as well as decreases in CPT and CPU); and
- Increases in the number of highly-used titles (HUTs).

Table 1 shows how additional investment in these 13 publishers (17 percent expenditure growth compared to a ten percent increase system-wide for all e-journals) produced less title growth, but was on pace with growth in use. During the same period, the CPT and CPU grew more slowly than growth in expenditure, while growth in the percent of HUTs was higher than growth in expenditures.

<table>
<thead>
<tr>
<th>Percent Change in Expenditure from CY 2009</th>
<th>Percent Change in Titles from CY 2009</th>
<th>Percent Change in CPT from CY 2009</th>
<th>Percent Change in Use from CY 2009</th>
<th>Percent Change in CPU from CY 2009</th>
<th>Percent Change in HUTs from CY 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>+17%</td>
<td>+10%</td>
<td>+6%</td>
<td>+18%</td>
<td>-1%</td>
<td>25% - 33%</td>
</tr>
</tbody>
</table>

Because external benchmarks are not fully available for these 13 publishers (except for changes in price), it is not clear how these measures compare to other colleges and universities. Therefore, measures were compared by publisher across the UNC system.

\textsuperscript{22} For more information, see: \url{http://www.jisc.ac.uk/publications/reports/2009/economicpublishingmodelsfinalreport.aspx}. They also report the overall cost of open access publishing to be cheaper per article than traditional publishing, and would accrue savings to higher education that would be sufficient to offset the costs for shifting entirely to OA.

\textsuperscript{23} Other factors may contribute to a shift in balance of power for negotiating future subscription rates from publishers to buyers. For example, Bernstein Research estimates that fast growth in R&D spending and results (e.g., reports), along with slower growth in library spending, may limit the performance of Elsevier’s share price. For more information see: \url{http://www.arl.org/bm-doc/mm11sp-aspesi.pdf}.

\textsuperscript{24} These 13 publishers collectively represent most (75 percent) of the UNC system’s e-journal expenditures.
In addition to this longitudinal analysis (covering calendar year 2009 to 2011), the project team examined access levels of every title from each publisher for calendar year 2011. Metrics representing greater access from publishers include:

- Higher percentages of used titles (and lower percentages of unused titles);
- Lower percentages of titles whose CPU exceeds $30; and
- Lower percentages of titles with a CPU above $30 that are used fewer than five times.\(^{25}\)

Metrics from four publishers (Elsevier, Wiley-Blackwell, Taylor & Francis, and Oxford University Press) suggest continued investment by the system is at higher risk of diminishing returns. These four are the UNC system’s higher-risk publishers, with Elsevier representing the system’s highest-risk.

Overall changes in use can also be evaluated in context with changes to the number of potential users (e.g., students and faculty). The number of UNC system faculty and students declined by less than one percent from 2009 to 2011, and are estimated to change only slightly in the near future. Therefore, changes in access measures are only minimally affected by changes in the number of UNC users.

Analyses of individual titles show institutions have access to many of the same titles, but at CPU levels above and below $30. For example, 97 percent of all Elsevier titles subscribed to by the UNC system are subscribed to by more than one institution. For 66 percent of these common journals, some campuses have a CPU above $30 while others have a CPU below $30. Further analysis of these data may offer insight into cost savings opportunities.

Appendix B describes the performance of each publisher in greater detail. Supplementary electronic files are available from UNC GA and the University Librarian Advisory Council (ULAC) containing additional data summarized in this report, including metrics by title for each publisher at each institution.

**Recommendations**

Request a working group, including representatives of the ULAC, Faculty Assembly, procurement and legal officials, to facilitate completion by others of the following.

**A.1 - Expand and Curate a Data Repository (by December 2012)**

The working group should maintain a simple repository (e.g., a data file) to make data easily accessible to decision makers. Data may include information from this report, licensing (e.g., archival access, inter-library loan permissions, and cancellation allowances), fund source, and related information. The repository should be updated annually, and may include data from other colleges and universities (who similarly may have access to the repository as appropriate).

**B.1 - Execute a System-wide Plan (beginning July 2013)**

Using data in the repository, the working group should consult with each UNC institution and recommend to UNC GA a system-wide plan that can contain expenditures and expand access of

\(^{25}\) Appendix B explains why a CPU threshold of $30 was used as basis for analysis.
specific publishers. When considering what publishers to include in the plan, the working group should examine the data from the four higher-risk publishers identified in this report. The plan should include a combination of system and institution-specific goals, as well as interim performance milestones to monitor progress. Suggested objectives are listed below, and should be scheduled for completion by the end of calendar year 2015.

- Reduce annual growth in expenditure to more closely parallel growth in use.
- Lower annual growth in cost-per-use and cost-per-title so it is below annual growth in expenditure.
- Reduce the annual change in cost-per-use or cost-per-title.

Coordinated analysis and action for e-journals may establish a proof-of-concept for acquisition of e-books. Similar to the steps outlined above, UNC institutions could identify a core group of e-books required each year, the prices, licensing terms, and a plan of action to contain expenditures and expand access. Because data rights management issues for e-books are as complex as licensing terms for e-journals, standardization and streamlining of the legal review would improve license terms, reduce burden, and obtain discounts from vendors.

C.1 - Prioritize Acquisition of Common Library Products Using SciQuest (by December 2013)
The UNC system is using SciQuest to streamline procurement and enable lower pricing for common products. Libraries procure a large volume of common products (approximately $19 million), but greater coordination and electronic enablement could produce lower prices. For example, EBSCO expenditures totaled $8.8 million in fiscal year 2011, and Harrassowitz totaled $1.7 million. The acquisition of other common library products may be enabled for e-procurement and ACH payment.

C.2 - Develop E-Journal Licensing Templates and Checklists (by December 2012)
Standardized templates and checklists can improve access by ensuring uniform terms and conditions (e.g., abstain from non-disclosure agreements). It can also reduce the amount of time to develop and approve subscriptions, offering publishers incentives to lower price.

D.1 – Evaluate the Potential of Open Access Publishing (by March 2013)
The working group should review how OA, and other alternatives, accelerates dissemination and eases access to the results of UNC research. The review should examine whether guidelines for determining faculty tenure promote greater access to published UNC research.

26 The plan may include coordinated action by a number of schools, individual actions by each institution, and other permutations. Some public university systems designate an institution to centrally execute a plan.
B. Procurement

Executive Summary
During the 2003 Session of the North Carolina General Assembly, UNC and the Division of Purchase & Contract (P&C) worked together on House Bill 975 (Session Law 2003-228) and House Bill 1070 (Session Law 2003-312). The legislation originated from UNC’s need to respond quickly and efficiently in a competitive environment driven by academic, research, and service needs. The legislation gave UNC more flexibility and responsibility for purchasing decisions and has been crucial in responding to the purchasing needs of the UNC institutions in a timely and efficient manner.

In an effort to expand on the efficiencies created by the 2003 legislation, the study team investigated whether collaborations could simplify and improve the current purchasing processes. Two areas were identified that may have a quick and meaningful impact on purchasing: collaborations between UNC institutions with differing authorized purchasing delegations, and continued focus on the E-Procurement Initiative with the UNC Finance Improvement and Transformation (FIT) team and the Combined Pricing Initiative with the UNC General Administration Information Resources Division.

Collaborations across the campus purchasing offices are improving current purchasing power. Procurement efficiencies are being gained with the initiatives in place through UNC FIT and the UNC General Administration Information Resources Division. These initiatives are focusing on increasing the negotiating and buying power for campuses and state agencies. Although efficiencies are being gained with strategic sourcing, there remain potential resource inefficiencies due to delegation policies currently in place. The study team recommends continuing the strategic sourcing efforts already in place and amending procurement policies to allow campuses with differing delegations to assist each other and leverage the existing procurement skills and capabilities on the campuses.

Analysis

Current Initiatives
In addition to exploring potential shared services among campus procurement offices, information was gathered on current successes with the E-Procurement Initiative directed by the UNC FIT Team and the Collaborative Procurement Savings directed by the General Administration Information Resources Division. The goal of the UNC E-Procurement Initiative is to provide a single instance electronic marketplace portal for campus purchase to payment transactions. This portal allows campuses to electronically process procurements from the “shopping experience” at the department level down to the payment to the vendor without the need for paper processing.

Thirteen UNC campuses have now implemented North Carolina based company SciQuest’s E-Procurement tool enabling fully integrated business-to-business electronic commerce for the UNC system. The SciQuest application enables efficient automated payment functionality with vendors allowing for electronic invoicing, reducing transaction processing time and potentially capitalizing on performance rebates.
A primary goal of the E-Procurement Advisory Committee has been to increase the number of catalogs hosted on the UNC GA Consortia Site and encourage the use of those catalogs by the external campuses. A spend analysis was conducted to establish and complete catalog enablement for the UNC system’s top two to three vendors in major spend categories. The spend analysis included the top 100 suppliers based on invoice count and check amount in Fiscal Year 2011, for the seven largest universities within the UNC system. The industries with the top catalog spend in the analysis were:

1) Maintenance, Repairs and Overhauls (MRO)
2) Office Supplies
3) Audio Visual Equipment
4) Lab Supplies
5) Information Technology

The top suppliers identified for enablement expansion were:
1) Fastenal
2) Office Depot and Staples
3) Xerox
4) Sigma Aldrich

Based on this information, the project team has established consortia contracts and catalogs with three of these suppliers thus far. These suppliers include Fastenal, Office Depot and Xerox Audio Visual Solutions, bringing the total number of consortia catalogs to 11 along with 60 state term contracts that have also been loaded into the UNC GA Consortia Site. Negotiations are still in process with Staples to establish a consortia contract and catalog by the end of September 2012. Once the Staples contract and catalog are in place, the advisory committee will move forward with negotiations for a Sigma Aldrich contract and catalog.

Overall, the response from the campuses with regards to the catalogs and contracts has been extremely positive. Significant savings and efficiencies are expected as the initiative becomes fully operational and strategic sourcing is implemented at the system level. Immediate cost avoidance savings have been realized as campuses leverage e-catalog maintenance and contracts in a common purchasing portal.

Three other areas of focus for the E-Procurement Advisory Committee include forms enablement, ROI/KPI reporting development and strategic sourcing. Forms enablement will expand the electronic workflow processing by allowing campuses to electronically process current high volume manual transactions. The most impactful efficiency initiatives identified for forms enablement are Travel Reimbursement and Direct Pay Vouchers. These forms should be fully implemented by January 2013.

The ROI/KPI reporting development will establish an internal work team with three of the larger universities to co-develop high level reporting metrics that demonstrate the value add component of e-commerce on campuses. These metrics will identify and standardize the specific savings campuses are realizing as the e-Procurement tool becomes fully functional. This initiative is planned to begin in November 2012.
Strategic sourcing contracts with the Department of Administration’s Purchase and Contract Division has long been a sought after initiative. The combined buying and negotiation power of the UNC system and state agencies has yet to be fully realized. The Strategic Sourcing initiative with the UNC Fit team is currently focused on leveraging the State’s buying power in three areas: lab supplies, audio visual supplies, maintenance and repair items, dormitory furniture and office supplies.

In addition to the procurement efficiencies identified with the UNC FIT Team, the UNC General Administration Information Resources Division is working with campus Chief Information Officers on university-wide contracts with vendors for the most commonly used hardware and software products. Currently 65 negotiated vendor contracts are in effect that guarantee higher discounts to the UNC system than to any individual institution. The Combined Pricing Initiative provides smaller UNC institutions with greater purchasing strength than would be possible individually. To date, the Initiative has saved an estimated $4,732,021 in yearly licensing and implementation costs for consortium members by negotiating discounts and negotiating contracts collectively.

Potential Collaborations
The procurement offices at the University of North Carolina at Chapel Hill (UNC-CH), the North Carolina School of Science and Mathematics (NCSSM), and UNC General Administration (GA) were identified as candidates to further explore working together due to proximity and differing economies of scale. Study team members worked together with the procurement offices to document current processes and understand the workload and transaction activity at each purchasing level.

Although the procurement workflow at NCSSM and GA are similar, the systems used to facilitate purchases from beginning to end are different. NCSSM currently uses e-Procurement and NCAS during the purchasing process. At this time the drastically different procurement systems between NCSSM and UNC-CH prevent further integration. General Administration and UNC-CH, however, currently use FRS and are working to implement the same instance of PeopleSoft.

UNC-CH has a purchasing delegation of $500,000, NCSSM has a purchasing delegation of $35,000 and GA has a purchasing delegation of $25,000. Purchases over campus delegations require approval by the Board of Awards with the Division of Purchase and Contract (P&C). Although the Board of Awards is established to regulate large purchases, the lead time required to plan for purchases, gain approval from the Board of Awards, and procure the item can be timely. The total number of purchases above the delegation authority at GA and NCSSM were no more than 15 in the last year between the two organizations, and UNC-CH has the economies of scale to assume responsibility for transactions above NCSSM and GA purchasing delegation.

Recommendation
The current collaborations through UNC FIT and the UNC General Administration Information Resources Division are increasing efficiency and purchasing power across the UNC system and State. The initiatives are providing increased negotiation power as well as a collaborative
environment in which procurement offices can work. Continued focus and implementation of these initiatives is producing measurable savings.

Based on existing efficiencies and collaborations, as well as the research in current procurement processing methods, the study team recommends requesting a working group, comprising representatives of the Department of Administration’s Division of Purchase and Contract, General Administration, and legal officials to facilitate discussion and determine next steps for working through the regulatory barriers in the form of divergent purchasing thresholds. Current regulations prohibit UNC institutions from making purchases on behalf of other UNC institutions using the purchaser’s delegation. This inhibits collaboration by requiring multiple processes for each institution involved in the purchase without adding any benefit.
C. Travel

Executive Summary
Ground transportation is a major component of university travel spending. In fiscal year 2011, the UNC system spent $14.2 million across all fund sources for in-State ground transportation and motor vehicle rentals. This study area evaluated the difference between the current transportation reimbursement policy and a policy that would also allow reimbursement for the use of a personal vehicle for all miles driven at the Internal Revenue Service deduction rate (IRS rate). To evaluate the cost of the current policy the study sampled over a third of the state owned passenger vehicles assigned to the UNC system for the period January 1, 2012 through March 31, 2012. This sample contained 2,709 individual trips made from eight campuses and revealed a cost to the state from those trips of 60 cents per mile.

The current state-wide policy encourages the use of state owned motor fleet vehicles by reducing the allowed mileage reimbursement for using a personal car from the IRS rate, currently 55.5 cents per mile, to 30 cents per mile for round trips of 100 miles or greater when a state owned vehicle is available. Based on the sample’s median round trip of 117 miles, and average of 204 miles, this policy seems to cause many individuals to use a state owned vehicle for longer trips to avoid the personal reimbursement penalty imposed on those trips. Based on the survey findings, using a state owned motor fleet vehicle has a cost to the state of 60 cents per mile, 4.5 cents per mile more than the current IRS rate. The study team recommends amending the current policy to remove the rate differential on trips 100 miles or greater allowing for reimbursement for all trips taken with a personal vehicle at the IRS rate. This change would stop discouraging employees from choosing the most cost effective method for the state and would reduce administrative costs by greatly simplifying the reimbursement process.

Analysis
The survey of Motor Fleet Management (MFM) owned vehicles was directed to eight UNC system institutions with larger motor fleets. The eight institutions providing travel information were Appalachian State University, East Carolina University, Elizabeth City State University, NC A&T University, North Carolina Central University, North Carolina State University, UNC-Chapel Hill, and Western Carolina University. Trip information was only requested for the period from January 1, 2012 to March 31, 2012 due to the manual process required to gather the information at some of the institutions. A total of 3,453 trips were provided through the survey responses for analysis with a total of $435,791 travel costs charged to campus motor fleet management users. These charges are based on each campus’ documented internal cost recovery rate charged to end users for the operation of that campus’ assigned MFM owned vehicles.

Of the eight institutions surveyed, there were 733 passenger vehicles assigned from State Motor Fleet Management. Of those 733 passenger vehicles, 17 were permanently assigned to individuals, 179 were used for general campus motor pools, and 537 were assigned to specific schools or departments. In fiscal year 2012, $783,052 in expenses was reported for campus based motor fleet operations at the responding institutions. Of this amount, $722,087 was related to salary and benefits. Across the eight campuses surveyed, 16.64 FTE were reported contributing to campus motor fleet management operations.
Once information was received from the institutions, the study team removed trips with a vehicle other than a MFM passenger sedan. Trips with zero mileage and zero cost were also removed. All campuses in the survey except ECSU included overhead and motor fleet management costs in their internal cost recovery rates. ECSU applies an estimated overhead to the internal mileage rate. The overhead portion was determined by dividing three months or reported by the total number of miles submitted (64,908) for an estimated overhead rate of .21 per mile.

Of the 3,453 trips initially submitted, a total of 2,709 trips were used as a basis for travel scenarios with a total cost of $333,645. The average trip distance was 204 miles at an average cost of $0.60 per mile.

<table>
<thead>
<tr>
<th>Summary of Survey Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Trips</td>
</tr>
<tr>
<td>Total Miles</td>
</tr>
<tr>
<td>Total Daily Charges</td>
</tr>
<tr>
<td>Total Mileage Charges</td>
</tr>
<tr>
<td>Total Cost</td>
</tr>
<tr>
<td>Average Cost/Mile</td>
</tr>
<tr>
<td>Average Length of Trip</td>
</tr>
<tr>
<td>Median Length of Trip</td>
</tr>
</tbody>
</table>

**Recommendation**

Based on our analysis, reimbursing employees for more frequent use of personal vehicles, rather than directly providing State-owned vehicles, generates considerable cost savings for the UNC system.

The study team recommends the UNC system request a waiver from the State Budget Director to use the IRS rate for reimbursing employees for the use of their personal vehicles regardless of mileage and whether a state owned passenger car is available. Based on the estimates, the UNC system could save up to $310,978 per year with full adoption of this policy. In addition, one consistent rate may provide additional savings by eliminating the administrative burden of managing a more complex reimbursement process. In addition, any underutilized MFM passenger vehicles could be returned to MFM for further savings. The study team recognizes that MFM passenger vehicles may be the best option in some circumstances for a campus and does not recommend mandating the number, or terms of use, for MFM owned vehicles across the UNC system. This policy change would only provide campus leadership with additional means to employ the most cost-effective method of travel.
IV. Appendices

A. Advancement

Appendix A.1 – Summary of Peer Rankings.

The chart below identifies UNC institutions who perform at (or below) the 25th percentile and at (or above) the 75th percentile of their peers. For example, the alumni participation rate at five institutions is at or below the 25th percentile of their peers. Similarly, alumni participation rates at seven institutions meet or exceed the 75th percentile rates of their peers.27

<table>
<thead>
<tr>
<th>&lt;25th Percentile</th>
<th>Alumni Contact Rate</th>
<th>Alumni Participation Rate</th>
<th>Number of Bequests</th>
<th>Value per Bequest</th>
<th>Percent of Total Giving from Top 3 Individual Donors of Major Gifts</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECSU</td>
<td>UNCA</td>
<td>ECSU</td>
<td>ECU</td>
<td>ECSU</td>
<td></td>
</tr>
<tr>
<td>FSU</td>
<td>UNCC</td>
<td>NCAT</td>
<td>ECU</td>
<td>FSU</td>
<td></td>
</tr>
<tr>
<td>UNCC</td>
<td>UNCG</td>
<td>NCCU</td>
<td>NCAT</td>
<td>NCAT</td>
<td></td>
</tr>
<tr>
<td>UNC-CH</td>
<td>UNCP</td>
<td>NCSU</td>
<td>UNCA</td>
<td>NCCU</td>
<td></td>
</tr>
<tr>
<td>UNCG</td>
<td>UNCSA</td>
<td>UNCC</td>
<td>UNCSA</td>
<td>UNCA</td>
<td></td>
</tr>
<tr>
<td>UNCSA</td>
<td>UNCP</td>
<td>WSSU</td>
<td>UNC-CH</td>
<td>UNCP</td>
<td></td>
</tr>
<tr>
<td>WSSU</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;75th Percentile</td>
<td>ASU</td>
<td>ASU</td>
<td>ASU</td>
<td>ASU</td>
<td></td>
</tr>
<tr>
<td>ECU</td>
<td>ECU</td>
<td>UNCA</td>
<td>NCCU</td>
<td>NCSU</td>
<td></td>
</tr>
<tr>
<td>NCSU</td>
<td>FSU</td>
<td>UNCC</td>
<td>UNCC</td>
<td>UNCC</td>
<td></td>
</tr>
<tr>
<td>UNCP</td>
<td>NCAT</td>
<td>UNCP</td>
<td>UNCSA</td>
<td>UNCG</td>
<td></td>
</tr>
<tr>
<td>UNCW</td>
<td>NCCU</td>
<td>UNCW</td>
<td>UNCW</td>
<td>UNCW</td>
<td></td>
</tr>
<tr>
<td>WCU</td>
<td>UNC-CH</td>
<td>WCU</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WSSU</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

27 NCSSM’s peers do not report to the Voluntary Support of Education survey.
Appendix A.2 – Other Complementary Advancement Initiatives

**Professional Development.** Institutions requested UNC GA (with institution-based fundraising staffs) continue professional development for the system. UNC GA recently provided professional training to UNC advancement officers focused on annual fund programming, CASE management and reporting guidelines, and campaign planning. Training on the below topics was prioritized, and may also include implementation groups who wish to continue collaborating:

- collaborative and strategic corporate relations;
- strategic foundation relations;
- proposal writing;
- prospect management; and
- building success around trends in philanthropy.

**Preferred Vendors.** UNC GA has helped established preferred vendors for prospect research tools. These tools are available to UNC institutions at better prices and service levels. Similarly, UNC GA helped establish a pilot program at UNCA to share its direct mail vendor supporting their annual fund.

**Personnel Management and Succession Planning.** UNC GA is developing methods for advancement programs to improve succession planning by:

- making available a preferred vendor for executive search services (already used by UNCP, UNCC, and NCA&T);
- making available resumes and supporting documents of finalist candidates considered to be talented and attractive for hire by a UNC institution who surfaced in executive searches but weren’t the final hire; and
- designing methods for retaining talented senior professionals by fostering cross-institutional opportunities for promotion.
B. E-Journals

Appendix B.1 – Detailed Analysis

Higher Risk Publishers

1. *Elsevier*. The system expends the most on Elsevier, and expenditures grew by 15 percent. However, overall use declined four percent, and CPU increased by 21 percent. These two measures do not compare well to other publishers. In addition, the number of titles increased by two percent and CPT increased by 14 percent. Finally, the percent of HUTs remained about the same.

   In calendar year 2011, 61 percent of Elsevier titles were used. Of these titles, 40 percent had a CPU greater than $30, and 61 percent of titles with a CPU above $30 were used fewer than five times.

2. *Wiley-Blackwell*. Overall, the changes to expenditure and access from 2009 for Wiley-Blackwell, the publisher receiving the system’s second highest expenditure, compare favorably to other publishers. Expenditures increased by 12 percent. Growth in titles, use, and HUTs exceeded growth in expenditures (by 13 percent, 52 percent, and 42-60 percent, respectively), and CPU decreased by 26 percent.

   However, an in-depth analysis of each title from calendar year 2011 shows a greater percentage of titles have a CPU above $30, relative to other publishers. About 80 percent of these more expensive titles are used fewer than five times.

3. *Taylor and Francis*. Expenditures grew only three percent from 2009, and usage grew by 41 percent. While the CPU declined, it remains high relative to other publishers. Only 42 percent of Taylor and Francis titles are used, and 65 percent of titles with a CPU above $30 are used fewer than five times.

4. *Oxford University Press*. Expenditure growth exceeded growth in titles and use. Overall CPU increased by ten percent, representing the second highest increase behind Elsevier.

Other Publishers

Data was compiled for other publishers, but overall their changes in expenditures and access compare favorably to the four higher risk publishers described above. In addition, total expenditures for some of these publishers are relatively small. For example, expenditures for Informa Healthcare, Karger, Mary Ann Liebert, and World Scientific total $407 thousand, or about two percent of all system expenditure.

Key UNC System Observations

The second table in Appendix I shows changes in expenditure and access by UNC institution.

- UNC-CH and NCSU comprise approximately 43 percent of all e-journal expenditures. When excluding these two institutions (as well as ASU, ECSU, and ECU – who appear to
have arrived at their title counts differently), title growth across the remaining ten institutions of the UNC system still exceeds growth in spending.

- UNC-CH is the only institution expending less in fiscal year 2011 than in fiscal year 2009 (a 12 percent decrease). However, UNC-CH’s investment was accompanied by a ten percent growth in overall use and HUTs for the 13 publishers examined in this study. Growth in access despite declining expenditure suggests UNC-CH is cost-effectively shifting from low use (or unused) to high-use titles. Overall, UNC-CH is expending less for greater access.

- Conversely, growth in expenditures at six institutions (ECSU, NCCU, FSU, NCA&T, UNCP, and UNCC) for the 13 publishers exceeded growth in use, and at five of these institutions, growth in HUTs. These data suggest growth in expenditures are not returning equivalent growth in access.
## Table 1 – Publisher View

<table>
<thead>
<tr>
<th>Publisher View</th>
<th>Total Expenditure</th>
<th>Percent Change in Expenditure from 2009</th>
<th>Total Titles</th>
<th>Percent Change in Titles from 2009</th>
<th>2011 CPT</th>
<th>Percent Change in CPT from 2009</th>
<th>Percent Change in Use from 2009</th>
<th>2011 CPU</th>
<th>Percent Change in CPU from 2009</th>
<th>Percent Change in HUTs from 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elsevier</td>
<td>$7,257,488</td>
<td>15%</td>
<td>25,308</td>
<td>2%</td>
<td>$271</td>
<td>14%</td>
<td>-4%</td>
<td>$3.26</td>
<td>21%</td>
<td>the same</td>
</tr>
<tr>
<td>Wiley Blackwell</td>
<td>$3,646,637</td>
<td>12%</td>
<td>26,690</td>
<td>13%</td>
<td>$137</td>
<td>0%</td>
<td>52%</td>
<td>$4.24</td>
<td>-26%</td>
<td>42% - 60%</td>
</tr>
<tr>
<td>Springer</td>
<td>$2,107,226</td>
<td>5%</td>
<td>38,300</td>
<td>16%</td>
<td>$55</td>
<td>-9%</td>
<td>35%</td>
<td>$4.39</td>
<td>-23%</td>
<td>23% - 39%</td>
</tr>
<tr>
<td>Taylor and Francis</td>
<td>$1,587,325</td>
<td>3%</td>
<td>8,238</td>
<td>5%</td>
<td>$197</td>
<td>-3%</td>
<td>41%</td>
<td>$13.31</td>
<td>-27%</td>
<td>26% - 39%</td>
</tr>
<tr>
<td>Sage</td>
<td>$1,377,000</td>
<td>17%</td>
<td>7,954</td>
<td>31%</td>
<td>$173</td>
<td>-10%</td>
<td>85%</td>
<td>$3.10</td>
<td>-36%</td>
<td>60% - 83%</td>
</tr>
<tr>
<td>Nature</td>
<td>$574,727</td>
<td>34%</td>
<td>209</td>
<td>34%</td>
<td>$2,750</td>
<td>17%</td>
<td>34%</td>
<td>$1.15</td>
<td>0%</td>
<td>12% - 15%</td>
</tr>
<tr>
<td>Lippincott, Williams &amp; Wilkins</td>
<td>$416,494</td>
<td>28%</td>
<td>1,082</td>
<td>12%</td>
<td>$385</td>
<td>14%</td>
<td>19%</td>
<td>$1.61</td>
<td>8%</td>
<td>11% - 17%</td>
</tr>
<tr>
<td>Oxford University Press</td>
<td>$421,178</td>
<td>19%</td>
<td>2,736</td>
<td>9%</td>
<td>$154</td>
<td>9%</td>
<td>8%</td>
<td>$1.88</td>
<td>10%</td>
<td>17% - 25%</td>
</tr>
<tr>
<td>Cambridge University Press</td>
<td>$311,150</td>
<td>10%</td>
<td>4,090</td>
<td>1%</td>
<td>$76</td>
<td>10%</td>
<td>32%</td>
<td>$4.29</td>
<td>-18%</td>
<td>3% - 13%</td>
</tr>
<tr>
<td>Informa Healthcare</td>
<td>$154,356</td>
<td>16%</td>
<td>96</td>
<td>-22%</td>
<td>$1,608</td>
<td>62%</td>
<td>22%</td>
<td>$7.45</td>
<td>-5%</td>
<td>decreases</td>
</tr>
<tr>
<td>Karger</td>
<td>$117,940</td>
<td>40%</td>
<td>48</td>
<td>66%</td>
<td>$2,457</td>
<td>-15%</td>
<td>NA</td>
<td>$33.00</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Mary Ann Liebert</td>
<td>$83,196</td>
<td>5%</td>
<td>1,133</td>
<td>3%</td>
<td>$73</td>
<td>2%</td>
<td>21%</td>
<td>$3.31</td>
<td>-13%</td>
<td>19% - 32%</td>
</tr>
<tr>
<td>World Scientific</td>
<td>$51,677</td>
<td>22%</td>
<td>22</td>
<td>5%</td>
<td>$2,349</td>
<td>16%</td>
<td>107%</td>
<td>$83.08</td>
<td>-41%</td>
<td>N/A (increased)</td>
</tr>
</tbody>
</table>

*Total spend does not equal total spend from table A due to survey inconsistency (.005%).

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>25th percentile</td>
<td>10.00%</td>
<td>3.00%</td>
<td>137</td>
<td>-3.00%</td>
<td>20.50%</td>
<td>3.10</td>
<td>-26.25%</td>
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<tr>
<td>Median</td>
<td>16.00%</td>
<td>9.00%</td>
<td>197</td>
<td>9.00%</td>
<td>33.00%</td>
<td>4.24</td>
<td>-15.50%</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>75th percentile</td>
<td>22.00%</td>
<td>16.00%</td>
<td>1,608</td>
<td>14.00%</td>
<td>43.75%</td>
<td>7.45</td>
<td>2.00%</td>
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</tbody>
</table>
### Table 2 – Institutional View

<table>
<thead>
<tr>
<th>School</th>
<th>Total FY11 Titles</th>
<th>Percent Title Growth from FY2009</th>
<th>Total FY11 Expenditures</th>
<th>Percent Growth in Expenditures from FY2009</th>
<th>Percent Spend on 13 of total FY2011 spend</th>
<th>Percent Expendituir Growth of 13 from FY2009</th>
<th>Total CY11 Use of 13 Publishers</th>
<th>Percent Change in Cost per Use</th>
<th>Percent Growth in Use of 13 Publishers from FY2009</th>
<th>10+ times</th>
<th>25+ times</th>
<th>50+ times</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASU</td>
<td>22,520</td>
<td>19%</td>
<td>$1,077,805</td>
<td>10%</td>
<td>$877,049</td>
<td>81%</td>
<td>16.5%</td>
<td>145,872</td>
<td>$6.01</td>
<td>-8.4%</td>
<td>27.2%</td>
<td>34.7%</td>
</tr>
<tr>
<td>ECU</td>
<td>45,607</td>
<td>27%</td>
<td>$3,185,144</td>
<td>9%</td>
<td>$2,027,036</td>
<td>64%</td>
<td>16.5%</td>
<td>484,984</td>
<td>$4.18</td>
<td>-12.5%</td>
<td>33.0%</td>
<td>32.3%</td>
</tr>
<tr>
<td>ECSU</td>
<td>34,469</td>
<td>63%</td>
<td>$486,348</td>
<td>190%</td>
<td>$199,696</td>
<td>41%</td>
<td>512.9%</td>
<td>12,686</td>
<td>$15.74</td>
<td>226.9%</td>
<td>87.5%</td>
<td>127.9%</td>
</tr>
<tr>
<td>FSU</td>
<td>4,547</td>
<td>25%</td>
<td>$604,300</td>
<td>0%</td>
<td>$451,690</td>
<td>75%</td>
<td>82.7%</td>
<td>31,133</td>
<td>$14.51</td>
<td>44.0%</td>
<td>26.8%</td>
<td>24.8%</td>
</tr>
<tr>
<td>NCA&amp;T</td>
<td>8,662</td>
<td>-5%</td>
<td>$1,651,859</td>
<td>20%</td>
<td>$1,131,415</td>
<td>68%</td>
<td>93.4%</td>
<td>110,023</td>
<td>$10.28</td>
<td>64.3%</td>
<td>17.7%</td>
<td>28.1%</td>
</tr>
<tr>
<td>NCCU</td>
<td>4,019</td>
<td>2%</td>
<td>$337,541</td>
<td>15%</td>
<td>$307,518</td>
<td>91%</td>
<td>170.5%</td>
<td>18,776</td>
<td>$16.38</td>
<td>32.7%</td>
<td>32.8%</td>
<td>25.2%</td>
</tr>
<tr>
<td>NCSU</td>
<td>12,249</td>
<td>14%</td>
<td>$5,292,488</td>
<td>23%</td>
<td>$3,576,032</td>
<td>68%</td>
<td>2.7%</td>
<td>1,248,504</td>
<td>$2.86</td>
<td>-15.6%</td>
<td>21.6%</td>
<td>20.3%</td>
</tr>
<tr>
<td>UNCA</td>
<td>11,337</td>
<td>23%</td>
<td>$278,216</td>
<td>32%</td>
<td>$130,021</td>
<td>47%</td>
<td>46.4%</td>
<td>67,646</td>
<td>$1.93</td>
<td>-30.2%</td>
<td>109.8%</td>
<td>11.7%</td>
</tr>
<tr>
<td>UNC-Ch</td>
<td>10,598</td>
<td>-7%</td>
<td>$5,154,287</td>
<td>-12%</td>
<td>$4,815,471</td>
<td>93%</td>
<td>5.0%</td>
<td>2,350,522</td>
<td>$2.05</td>
<td>-4.4%</td>
<td>9.7%</td>
<td>10.5%</td>
</tr>
<tr>
<td>UNCC</td>
<td>8,397</td>
<td>52%</td>
<td>$1,851,619</td>
<td>9%</td>
<td>$1,414,614</td>
<td>76%</td>
<td>17.3%</td>
<td>223,258</td>
<td>$6.34</td>
<td>2.1%</td>
<td>14.8%</td>
<td>13.2%</td>
</tr>
<tr>
<td>UNCG</td>
<td>10,991</td>
<td>6%</td>
<td>$1,656,408</td>
<td>9%</td>
<td>$1,309,573</td>
<td>79%</td>
<td>11.8%</td>
<td>214,738</td>
<td>$6.10</td>
<td>-9.1%</td>
<td>22.9%</td>
<td>4.7%</td>
</tr>
<tr>
<td>UNCP</td>
<td>6,467</td>
<td>12%</td>
<td>$447,779</td>
<td>48%</td>
<td>$166,341</td>
<td>37%</td>
<td>55.5%</td>
<td>18,233</td>
<td>$9.12</td>
<td>5.3%</td>
<td>47.7%</td>
<td>86%</td>
</tr>
<tr>
<td>UNCW</td>
<td>9,278</td>
<td>7%</td>
<td>$1,412,105</td>
<td>8%</td>
<td>$1,096,457</td>
<td>78%</td>
<td>8.8%</td>
<td>105,980</td>
<td>$10.35</td>
<td>-1.7%</td>
<td>10.6%</td>
<td>16.9%</td>
</tr>
<tr>
<td>WCU</td>
<td>6,686</td>
<td>32%</td>
<td>$567,422</td>
<td>38%</td>
<td>$451,889</td>
<td>80%</td>
<td>44.5%</td>
<td>72,650</td>
<td>$6.22</td>
<td>-2.4%</td>
<td>48.0%</td>
<td>45%</td>
</tr>
<tr>
<td>WSSU</td>
<td>4,022</td>
<td>70%</td>
<td>$287,458</td>
<td>62%</td>
<td>$149,295</td>
<td>52%</td>
<td>56.8%</td>
<td>35,414</td>
<td>$4.22</td>
<td>-2.9%</td>
<td>61.5%</td>
<td>38.6%</td>
</tr>
<tr>
<td>System</td>
<td>199,849</td>
<td>23%</td>
<td>$24,290,779</td>
<td>10%</td>
<td>$18,104,097</td>
<td>75%</td>
<td>17%</td>
<td>5,140,237</td>
<td>$3.52</td>
<td>-1.0%</td>
<td>17.7%</td>
<td>24.8%</td>
</tr>
</tbody>
</table>

*Median*
Appendix B.2 – Common Subscription Methods

Libraries access journals in a variety of ways. Subscriptions to “standard” and “tailored” packages are common, and can be expanded to “Big Deal” arrangements. Subscriptions are also made on a title-by-title, or less commonly, a pay-per-view basis.

Most titles subscribed to by UNC institutions are made available through a big deal. These deals are advertised as providing access to nearly all of a publisher's titles at a price far lower than the cost of subscribing individually to each title. To enter into a big deal, libraries pay a minimal surcharge over current cost (generally ten to 20 percent) to access almost all titles available by a publisher. Big Deal surcharges, and the overall price, varies by campus depending on the types of journals and price paid when the library first entered the Big Deal, but the percent growth in titles and use almost always exceeds the change in price.\(^{28}\)

In general, Big Deals provide greater price stability for less title flexibility. Big Deals cover longer periods of time (typically three years), and allow buyers to “lock-in” to more stable prices – or price caps – that assure them annual price changes will not exceed agreed to caps. Price caps are generally between two and five percent. This stability helps avoid unpredictable, and sometimes high, annual price fluctuations associated with individual titles subscriptions, and to a lesser extent, smaller packages.

Big Deals also lock colleges and universities into a title inventory, allowing only minimal changes to this inventory over time. Changes beyond the threshold can result in penalties and other charges. Over time, this inflexibility can result in more unused titles than other subscription models, as schools are restricted from dropping undesirable titles. Similarly, exiting a Big Deal entirely likely would create some savings, but result in greater losses to access (as measured by number of titles and usage).

Individual title subscriptions can offer greater flexibility. Schools can drop or add titles each year without associated penalties. However, the absence of inflation caps can result in higher annual price changes – or less stability in pricing.

Pay-per-view subscriptions generally have fewer terms and conditions, and can be a cost-effective way for accessing critical titles that are used a very few times. However, the pay-per-view model is subject to greater price volatility than a package deal, and overall costs can quickly exceed estimates if the title is used many times. Also, pay-per-view can be harder to navigate electronically, and some users may turn away from using them and instead resort to alternative sources more quickly accessible in package deals.

\(^{28}\) Generally, 90 percent of what schools pay publishers in a big deal pays for the direct subscriptions that were individually subscribed to when the school entered into the deal. The remaining ten percent surcharge increases the title count (and subsequent usage) and usage by greater amounts than the cost. Conversely, a ten percent cost reduction off the current deal would cause larger reductions in title availability and use.
Appendix B.3 – E-Journal Methodology

Primary Metrics

- Change in Expenditure – Measures the percent change in expenditure over a period of time.

- Change in title count and cost per title (CPT) - Measures the percent change in the number of titles accessible from each publisher and the cost for each (i.e., total cost divided by total titles).

- Change in use and cost per use (CPU) – Measures the percent change in use and the CPU (i.e., total cost divided by number of uses).

- Change in highly used titles (HUTs) – Measures the percent change in HUTs (titles used more than ten, 25, and 50 times).

“Use” was defined as the number of PDF or HTML downloads, and was collected using COUNTER compliant practices. COUNTER compliant does not ensure consistency across institutions, but generally preserves data consistency within institutions.

Limitations of the CPU Metric

While cost-per-use (CPU) metrics offer good insight as to whether the titles made available by libraries meet the needs (or are actually used) at each school, there are limitations. For example, usage doesn’t assess functionality (as measured by whether the digital resource works as intended), usability (as measured by how easily users interact with the resource), and accessibility (as measured by how well the resources permits equitable access for patrons with disabilities). It also overlooks many uses that may be counted as one download, for example, when faculty access articles for use by a group of students.

Other metrics, such as cost-per-title (CPT), indicate how much a library has available relative to the price they are paying, but does not convey the extent to which the inventory of titles is meeting the needs of the libraries customers.

CPU Benchmarks

The project team applied a CPU of $30 or more as an indicator of higher CPU. This benchmark was derived from estimates for completing an interlibrary loan (ILL), which can be a suitable alternative to most needs when CPU exceeds $30.

A wide range of external estimates for completing an ILL are available ($25 - $45 per loan), and ULAC representatives estimated costs can range between $10 - $50. This range accounts for

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29 Wellesley College and the University of Illinois at Chicago estimates their costs of an ILL to be $30 (see http://www.libraryjournal.com/article/CA6723367.html and http://www.uic.edu/depts/lib/circulation/services/ill/illfaq.shtml). James Madison estimates costs to be around $45 per loan http://www.libraryjournal.com/article/CA6723367.html, and George Mason University estimates $25 per loan (see http://library.gmu.edu/services/ill.html). A librarian at the University of North Texas explained on a librarian list serve that they consider costs per use above $50 as high and used it as an indicator for review.
staff time at the lending library, as licensing terms require the lending library to print a hard copy of an electronic article, scan it, and then electronically transmit the article to the borrower. While this procedure is most common, licensing terms may instead require the lending library to print and then mail hard a copy version of the article to the borrower. Costs would be higher in the second scenario.

These loans represent requests from persistent searchers, as people generally continue searching within their library for comparable information that is more readily accessible, rather than requesting an ILL.

Notes about the Data
- Data was primarily collected on a calendar year basis, as licensing agreements generally begin at the start of the year and data is easily accessible that way. Overall expenditure data was collected for fiscal years 2009, 2010, and 2011 to link library expenditures with overall trends across the UNC system.

- Changes to expenditure were measured from fiscal year 2009 to 2011, and the fiscal year 2009 budget for the UNC system was particularly constrained. Therefore, the overall change may be greater than average changes if measured over other three year periods.

- The survey did not distinguish between subscriptions paid for using general and non-general funds. Funding sources may impact the choices institutions make. For example, it may be beneficial to use recurring fund sources to establish longer, bigger deals. Alternatively, if only one-time funds are available, shorter agreements on an individual title basis may be more beneficial. An analysis of fiscal year 2011 spending shows approximately $63 million was expended by libraries on collections, and about $3 million of this amount was restricted funding from non-State sources.

- Faculty and staff perceive some publishers to be higher quality than others, and therefore higher prices (relative to access) may be more tolerable.

- Larger publishers frequently absorb titles distributed by smaller publishers. As a result, expenditure growth may be partially explained by reallocating expenditures from a smaller publisher to one of the larger publishers reviewed in this report.

- Survey respondents indicated the number of titles in calendar years 2009 and 2010 were likely over counted. As a result, title growth may be higher (and CPT growth may be lower) than presented in this report.

- Institutions provided explanations of data issues, which are tabulated in the e-journal repository available at UNC GA. Common issues relate to the 2009 merger of Wiley and Blackwell publishing and likely errors in COUNTER data from selected publishers. As another example, some institutions (ASU, ECSU, ECU) appear to have arrived at their total title count differently, as their combined title count exceeds the number of titles subscribed to by all other UNC institutions combined.