Introduction

This year, the Libraries moved forward strategically on a number of fronts, expanding our capabilities to meet the university’s growing needs and interests in areas such as data science and management; visualization; virtual and augmented reality; making/fabrication/3D printing; and research capacity and competitiveness. We are deeply engaged with the Division of Academic and Student Affairs (DASA) others in the planning and design for the renovation of the D. H. Hill Library featuring the Academic Success Center (ASC), scheduled for completion in fall 2020. We anticipate many new opportunities for synergies between library and ASC services that will enrich the student experience. In the meantime, a variety of needed enhancements and updates to other library learning spaces were undertaken this year, aiming to alleviate the impact of the loss of valuable study seating during the construction phase of the renovation project beginning in spring 2019 and to produce an eventual, significant increase in seats and spaces that are needed and highly valued by students and faculty.

Many of our initiatives aim to improve access and reduce costs and other barriers for students and scholars, for example, through open alternatives to traditional textbooks, opportunities for student employment and scholarships, and inclusive, multidisciplinary programs and events. This year, we expanded our curriculum of workshops for the university community, building knowledge and skills in subjects such as data science, visualization, virtual reality, design thinking, digital media production, and digital research and scholarship. Providing core research infrastructure for the university in the form of a high-quality research collection remains a central priority for the Libraries, as well, and the use of the collection continued to increase this year. The Libraries is committed to being a powerful competitive advantage for NC State University in every aspect of its mission, and, to that end, we foster a culture of creativity, diversity, and innovation.

I. Supporting the University’s Strategic Plan

Goal 1. Enhance the success of our students through educational innovation.

The Libraries’ Alt-Textbook project empowers and supports faculty working to innovate pedagogically, enhance access for NC State students to high-quality, tailored educational materials, and reduce the financial burden of expensive textbooks. It has become a state and national model for open education, saving NC State students more than $400,000 to date.

The Libraries’ partnership with the TH!NK program has led to a total of 49 collaborations with faculty, including 17 course-based interactions this fiscal year, using Makerspace, digital media, visualization, information literacy, and research resources. Faculty have also integrated their courses with the Libraries’ Multimedia Research Contest and the Wolfpack Citizen Science Challenge.
The Libraries awarded the first two Library Leaders Scholarships, recognizing exemplary contributions to the Libraries by current students. The two awards of $2,500 each come from the Library Leaders Scholarship Endowment, established to provide scholarship support for students working at the NCSU Libraries and to encourage them to consider pursuing an advanced degree in Library and Information Science.

Launched in Fall 2017 in collaboration with the Graduate School, the Peer Scholars Program gave 15 graduate students and postdoctoral researchers the opportunity to share their expertise by teaching workshops on topics including design, programming, analytics, immersive technologies, visualization, and diversity. A total of 24 sessions were offered to over 350 participants from 55 units (colleges and departments) across campus.

The highly successful Making Space series continued for its second year, aiming to confront bias and systemic barriers to inclusion in the STEM fields by representing the experiences and perspectives of individuals from underrepresented groups in science and technology. These successful technologists engage with students through workshops and lectures on topics ranging from biofabrication to game design to net art.

The Digital Media program continued its dedication to enhancing the digital literacy skills of the NC State community, with more than 15,000 reservations in 11 multimedia spaces, support for multimedia projects in 22 courses, and 50 digital media workshops and programs.

**Goal 2. Enhance scholarship and research by investing in faculty and infrastructure.**

**Collections**

The NCSU Libraries collections are shared core research infrastructure, offering the entire university community a deep and diverse portfolio of content in all formats and disciplines. Ninety percent of our collections investment is for research content, and 10 percent is for instructional and other content. Our investment in these resources, many of them available online, yields significant benefits for research productivity at NC State.

Journals and databases continued to show significant use in 2017 (this data is available by calendar year), with over 4.1 million journal article downloads (up 13% percent from the previous year) and 7.5 million database searches (up 8 percent from the previous year). The total usage of the print and digital collections exceeded 16.4 million in 2017/18 (a 7 percent increase over the previous year).

This year, the Libraries put online its one millionth digitized image from the Special Collections Research Center, dramatically increasing over the last three years the number of materials made available for researchers in areas of university history, agricultural innovation, cooperative extension, and architecture and landscape architecture. These resources were created with library support, plus over $600,000 from the North Carolina State Library through the Library Services and Technology Act (LSTA).
Spaces for learning and research

In its first full academic year, the Libraries’ Virtual Reality (VR) Studio, located in repurposed space in the west wing of the D. H. Hill Library, offered 66 orientation sessions and 29 workshops that introduced six new topics to students. Over 1,800 people visited the VR Studio this year.

The Libraries partnered with the College of Management and the College of Sciences to create a dedicated space for access to and training for Bloomberg terminals (financial data and software) in the D. H. Hill Library and Hunt Library. Librarians also negotiated additional content mining rights for computational research at NC State.

The Libraries collaborated with DASA, Capital Project Management, and the Office of the University Architect to advance the Academic Success Center at the D. H. Hill Library project into design development, the final phase before construction documents. Planned to open in fall 2020, the project includes the complete renovation of the second and third floors of the bookstacks towers, a new open stairwell connecting these floors with the Ask Us lobby, and new mechanical rooms on the fourth floor. In addition to the DASA Academic Success Center spaces on the second floor of the north tower, new Libraries spaces will include an Innovation Studio on the second floor of the south tower, an enlarged and upgraded Visualization Studio on the third floor of the north tower, and a Dataspace on the third floor of the south tower.

Research partnerships and support

A new Data & Visualization Services department was created with existing positions and resources to help students and researchers develop critical data science skills. This department further establishes the Libraries’ central role in providing services and instruction in data discovery, evaluation, modeling, analysis, and visualization; geospatial data techniques; and metadata creation, along with access to high-performance and other computing resources, specialized software, and state-of-the-art visualization spaces.

The Libraries partnered with the Office of Information Technology (OIT) and others to procure an enterprise license for Lynda.com to provide online, self-paced learning and professional development resources for all NC State faculty, staff, and students, in response to increasing demand and need for this content across disciplines and curricula.

To support compliance with research data management and public access requirements, research librarians in our Data Management Planning service collaborated with faculty members, college research officers, ORIEND, SPARCS, the Proposal Development Network, and Research Support Council, providing resources and consultation for researchers applying for grants from NSF, DOE, DoD, USDA, NEH, and NIH. As of June 2018, this service has supported $6.2 million in awarded grants to date, including at least four NSF CAREER Award winners. This year, the service piloted a new outreach model for Research Data Management consultations, including support for experimental data documentation,
managing machine learning data and large simulation datasets, and developing standard operating procedures for lab-wide data management.

As members of the Comparative Medicine Institute (CMI) and liaisons to the Chancellor’s Faculty Excellence Program (CFEP) cluster in Translational Regenerative Medicine, life sciences research librarians engaged in the CMI retreat and seed grant initiatives; assisted with expert searching, citation management, and publication analysis; presented to centers and institutes on impact measurement and network analysis; and provided guided practice in network and publication analysis to research support staff in the College of Veterinary Medicine (CVM) and CMI.

Goal 3. Enhance interdisciplinary scholarship to address the grand challenges of society.

Research librarians collaborated with the Chancellor’s Faculty Excellence Program (CFEP) clusters, and with faculty and students in all programs and disciplines, offering expertise and support in areas such as visualization and visual narrative, data analytics and management, in-depth literature searching, citation management, and bibliometric analysis.

Library staff delivered a total of 380 workshops on 96 unique topics, with 4,320 total attendees from all colleges and 48 departments. These workshops help students, faculty, and researchers build knowledge and skills in subjects such as data science, visualization, virtual reality, design thinking, digital media production, making/fabrication, and digital research and scholarship. Plans are in place for continued expansion of this program during the upcoming academic year.

The Libraries partnered with the Graduate School to become members of Software Carpentry, a national nonprofit training organization focused on teaching scientific computing and software skills for scientists, engineers, and other researchers.

Library events focusing on the results of research and scholarship brought together students and faculty across the disciplines, offering opportunities for collaboration, knowledge sharing, and new connections. For example, Coffee & Viz is a forum for NC State researchers and nationally recognized guests to present their visualization work and discuss topics of interest with colleagues, students, and the public. Since its inception in January 2015 at the Hunt Library, it has showcased 38 faculty and graduate student projects, with a total attendance of more than 2,400.

Goal 4. Enhance organizational excellence by creating a culture of constant improvement.

Public and teaching spaces at the D. H. Hill Library were updated with new furnishings and technologies, including group study rooms and the Learning Commons, and a new quiet reading room was created in the west wing with modular, glass walls.

A new collaborative visualization space was created at the Veterinary Medicine Library featuring an interactive, high-resolution, touch-screen panel. This space was designed and configured in consultation with Centennial Biomedical Campus researchers, the College of
Veterinary Medicine (CVM) Library & Educational Resources Committee, and CVM Computing Resources.

The Libraries Information Technology Department oversaw the successful transfer of administration of the Libraries’ high-performance computing (HPC) and render farm nodes to the OIT HPC group. These valuable graphics processing resources are now available to and being used by the larger campus HPC community while still available for Libraries support of faculty and student work.

The Libraries offered the Data Science and Visualization Institute for Librarians in partnership with the Coalition for Networked Information and Data Science Training for Librarians. This year’s week-long course attracted 30 participants from 15 states and Canada.

This year we sustained our success in attracting minority librarians to the NCSU Libraries Fellows program. Two of four Fellows hired for the 2018-20 cohort are from underrepresented racial/ethnic groups. The Fellows program has been a valuable pipeline for the Libraries: 50 (66%) of the Fellows have been hired into permanent roles at the completion of their fellowships since the program began in 1999.

Goal 5. Enhance local and global engagement through focused strategic partnerships.

The Libraries’ suite of public programs showcases the research and work of faculty and students, highlights the contributions of alumni, and engages the public in innovative ways that demonstrate the Libraries’ and the university’s forward-looking and experiential focus. In 2017/18, the Libraries hosted 88 public events with attendance of more than 7,500. Library Journal named our Director of Program Planning and Outreach, Marian Fragola, a 2018 “Mover & Shaker,” applauding her “knack for creating programs that span disciplines and are open to the public.”

A large-scale public event, State of the Sciences: LIVE at the Library, was held in April in collaboration with the College of Sciences as part of the North Carolina Science Festival. More than 800 children and adults, including many university alumni, enjoyed virtual reality experiences in the Creativity Studio, behind-the-scenes bookBot tours, pop-up science books, Makerspace activities, and Coffee & Viz lightning talks, all programmed and coordinated by library staff.

The NCSU Libraries is part of a team participating in a nationwide research project led by Ithaka S+R to study the research practices of civil and environmental engineering faculty. The work conducted by our team will contribute to a rich description of how scholars in the field conduct their work and will lead to actionable recommendations for how libraries and others can best support that work going forward.

Visitors from 103 countries from Afghanistan to Zimbabwe have come to see the James B. Hunt Jr. Library. The library attracts widely diverse groups, from grade school campers to seniors, educators to executives, as well as prospective students and their parents. We have
toured more than 68,000 people since the building opened in early 2013, and requests for
tours have not diminished. NC State’s Office of Partnerships and Economic Development
and the Global Training Initiative are among the campus units that frequently include the
Hunt Library on their tours as a point of institutional pride.

The Libraries co-sponsored and hosted the sixth annual *Designing Libraries for the 21st
Century conference* at the James B. Hunt Jr. Library. This year’s conference attracted over
230 librarians and designers from 30 states and five countries.

**Make-a-thon** is an event organized by the NCSU Libraries with the University
Sustainability Office and four University Housing Living and Learning Villages. It seeks to
kickstart ideas that could improve the sustainability of the campus, the community, or the
world. The January 2018 event brought together 148 students on 39 interdisciplinary teams
representing 10 of the university’s colleges.

**II. Programs: Special achievements of significance; volume of activities, special program
reviews, studies, or plans, and changes in scope of activities**

**Special Achievements**

**Grants**

- Continued execution of a $414,000 grant from the Andrew W. Mellon Foundation,
  “Visualizing Digital Scholarship in Libraries and Learning Spaces,” to support the
  advancement of tools and techniques for developing and sharing large-scale visual
  content for research.
- Designed and prepared to open a Dataspace at the Hunt Library (cluster of specialized
  workstations with support for data science and analysis) with a private foundation grant
  of $389,100. This project will also enhance the Game Lab’s capabilities for data
  visualization, workshops, and interactive presentations.
- Awarded a $360,384 “Digitizing Hidden Special Collections and Archives” grant from
  the Council on Library and Information Resources, enabling the Libraries to partner with
  the American Society for the Prevention of Cruelty to Animals (ASPCA) on a three-year
  project, "The Animal Turn: Digitizing Animal Protection and Human-Animal Studies
  Collections."
- Awarded a $35,000 grant from The Pentair Foundation to support STEM-related
  programming and instruction for underrepresented groups at NC State. This funding also
  supported the Making Space series, which aims to confront bias and systemic barriers to
  inclusion in the STEM fields by presenting the experiences and perspectives of
  underrepresented groups in science and technology.
- Executed an Institute of Museum and Library Services (IMLS) grant of $49,958 to
  explore the need for and ideal components of a subject-specific, simple, flexible, and
  scalable “toolkit” for the creation and adoption of open textbooks.
- Executed an IMLS grant of $49,808 to explore the need for and ideal components of an
  open educational resource (OER) for teaching library science students and professionals
  about scholarly communication.
• Awarded a $25,000 grant from the NCSU Foundation to develop a virtual reality studio in the D.H. Hill Library as a hub for teaching, learning, and research with virtual and augmented reality.

• Executed the second year of a Library Services and Technology Act (LSTA) grant awarded to NC LIVE. This $135,566 award enabled NC LIVE to create and deliver a comprehensive training program for member libraries. NC LIVE also secured a third year of funding for this initiative for FY 2018/19.

• Awarded a five-year, $115,318 USDA Forest Service grant for InsideWood, an internet-accessible wood anatomy information resource used extensively worldwide.

• Received a $7,823 grant from the U.S. Agricultural Information Network to digitize hundreds of individual publications (approximately 6,000 pages) created by the North Carolina Cooperative Extension Service and held in the NCSU Libraries’ Special Collections Research Center.

• Completed the second and final year of a $154,800 Council on Library and Information Resources grant to support a postdoctoral fellowship.

• Received a National Network of Libraries of Medicine State and Regional Exhibiting Award of $2,000 to exhibit at the North Carolina Veterinary Conference.

• Notified in June 2018 that NC LIVE secured an LSTA grant totaling $149,451 to address the high costs of textbooks by coordinating the expertise and resources of all higher education communities in North Carolina to curate a collection of electronic textbooks and encourage their adoption.

**Fundraising**

In the fiscal year ending June 30, 2018, the Libraries raised approximately $3.58 million in gifts and new commitments. This total is 9% above our 2016-17 total of $3.27 million, 36% above our previous three-year (2015-17) average of $2.62 million, and 29% above our 5-year (2013-17) average of $2.77 million. This also represents our highest amount raised since the Think and Do the Extraordinary campaign launched its pre-public phase in July 2013, and the first time ever that the Libraries has recorded back-to-back years exceeding $3 million raised. To date, the Libraries has recorded approximately $19.9 million in gifts and new commitments in the Think and Do the Extraordinary campaign, 90% of our current $22 million goal. Highlights for the year included an $850,000 estate gift from a retired faculty member, a $389,100 foundation grant to create a Dataspace and renovate the Game Lab at the Hunt Library, the acquisition of several prestigious collections, and several other major gifts to support diverse areas.

**Changes to programs or activities**

In response to growing interest and demand throughout the university, a new **Data & Visualization Services department** was created with existing positions and resources to help students and researchers develop critical data science and visualization skills. These services are offered in conjunction with an expanded program of training workshops in these

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1 All reported numbers are accurate according to the Advance database on 7/2/2018. However, they do not reflect official reported numbers from Advancement Services for FY18, which will be available later in July 2018.
areas that complements the university curriculum and enhances research skills, capacity, and competitiveness. In summer 2018, a new **Dataspace** will be created at the Hunt Library offering a cluster of specialized workstations and support for data science and analysis. A similar space will be designed for the D. H. Hill Library as part of the Academic Success Center renovation project.

### III. Diversity: Initiatives and Programs

This year we sustained our success in attracting minority librarians to the **NCSU Libraries Fellows program**. Two of four Fellows hired for the 2018/20 cohort are from underrepresented racial/ethnic groups. In addition to the Fellows program, the Libraries appointed minority librarians to fill two of eight permanent positions this year (excluding NC LIVE). In total, hiring of librarians from underrepresented groups was at 33% in 2017/18, well exceeding availability which is calculated at 15.39% for the field.

Wolf Tales, the Special Collections Research Center’s initiative to “capture the voices of the Pack,” developed regular recording events and outreach with historically underrepresented communities at NC State, including new partnerships with the Association of Women Faculty, the NCSU Women's Center, NC State Live, and others. In 2017/18, the collection added 83 new recordings with community partners at 16 recording events, for a current total of 152 recordings with alumni, students, faculty, and staff.

The NCSU Libraries joined the Association of College and Research Libraries (ACRL) Diversity Alliance, a national program uniting academic libraries committed to increasing the hiring pipeline of qualified and talented individuals from underrepresented racial and ethnic groups.

### IV. Staff: Major new appointments, kudos, professional activities and recognition

Vice Provost and Director of Libraries Susan K. Nutter, one of NC State’s most dynamic and influential leaders, retired on October 1, 2017 after 30 years of service to NC State. Greg Raschke was appointed to serve as Interim Vice Provost and Director of Libraries. Previously, he served as Associate Director for Collections and Scholarly Communication for over a decade. A national search for the position will be launched in summer 2018.

**Major New Appointments**: Karen Ciccone, Department Head, Data & Visualization Services; Micah Vandergrift, Open Knowledge Librarian; and Mira Waller, Department Head, Research Engagement.

**Staff Honors and Awards**: Susan Nutter won the North Carolina Library Association Distinguished Library Service Award; the NCSU Libraries won the ALA Information Today Library of the Future Award for innovative development of patron training programs about information technology; Marian Fragola became the NCSU Libraries’ tenth Library Journal Mover and Shaker; Tessa Minchew received the NASIG Birdie MacLennan Award; Nushrat Kahn won the Association for Information Science & Technology’s New Leaders Award; Heidi Tebbe won the Special Libraries Association’s Rising Star Award; Shaun Bennett won
the Charleston Conference’s Up and Comer Award; and Debbie Currie received the U.S. Agricultural Information Network’s Service to the Profession Award.

**Professional Activities and Recognition:** Brian Dietz attended the Association of Research Libraries’ (ARL) Library Management Skills Institute I; Maria Collins was selected to attend the ACRL Harvard Leadership Institute for Academic Librarians; Jennifer Garrett was selected to attend the ARL Leadership and Career Development Program; Lisa Ruth attended the Symposium for Strategic Leadership in Diversity, Equity and Inclusivity; Sonoe Nakasone won a Code4Lib Conference Diversity Scholarship; Heide Tebbe was selected to be a NASA Datanaut; Kris Alpi won the Librarians without Borders® Ursula Poland International Scholarship; William Langston was selected to attend the Minnesota Training Institute for Early-Career Librarians from Traditionally Underrepresented Groups.

V. **Recommendations and concerns for the future**

**Sustaining the Research Collections**

The Libraries faces the long-standing challenge of sustaining a strong research collection while losing $550,000 a year in buying power due to inflation. After years of state budget reductions, despite our serious efforts to protect the collections, NC State continues to fall behind our peer institutions on expenditures for these shared, core resources that are integral to learning and research and that support the university’s competitiveness and success. Moving up from the bottom third to at least the average of the university’s peer group in collections expenditures by FY 2019-20 remains a high priority.

**Academic Success Center at the D. H. Hill Library**

The Libraries looks forward to the opening of Academic Success Center at the D. H. Hill Library in 2020 and to welcoming students into the additional, technology-rich Libraries spaces to be created as part of that project. We will collaborate with DASA to enrich the student experience through our complementary services and spaces, offering immersive technologies, making and innovation services, collaborative learning and research spaces, and community-engaged programming to enable experiential teaching and learning. As a whole, this inclusive, forward-looking project has significant potential to become a model in higher education.
## Library Services

<table>
<thead>
<tr>
<th>Year</th>
<th>User Visits to Libraries (a)</th>
<th>Total Circulations (b)</th>
<th>Instructional Sessions/Students</th>
<th>Reference Transactions</th>
<th>Total Technology Lending/Laptops</th>
</tr>
</thead>
<tbody>
<tr>
<td>17/18</td>
<td>2,547,617</td>
<td>466,452</td>
<td>1,109/21,550</td>
<td>32,339</td>
<td>322,248/57,474</td>
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<tr>
<td>16/17</td>
<td>2,575,325</td>
<td>573,450</td>
<td>1,067/23,718</td>
<td>30,052</td>
<td>304,695/71,755</td>
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<tr>
<td>12/13</td>
<td>2,247,315</td>
<td>639,145</td>
<td>666/17,982</td>
<td>41,625</td>
<td>71,387/72,871</td>
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<tr>
<td>07/08</td>
<td>1,694,215</td>
<td>598,648</td>
<td>446/11,977</td>
<td>32,325</td>
<td>45,342/26,397</td>
</tr>
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</table>

## Library Services (continued), Expenditures, and ARL Ranking

<table>
<thead>
<tr>
<th>Year</th>
<th>Items Loaned to External Organizations</th>
<th>Items Borrowed from External Organizations</th>
<th>Expenditures on Library Materials ($) (c)</th>
<th>Total Library Expenditures ($) (c) (d)</th>
<th>Association of Research Libraries (ARL) Ranking (e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17/18</td>
<td>18,122</td>
<td>24,201</td>
<td>12,581,182</td>
<td>36,047,384</td>
<td>N/A</td>
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<tr>
<td>16/17</td>
<td>19,552</td>
<td>25,699</td>
<td>12,031,807</td>
<td>34,165,080</td>
<td>Not published</td>
</tr>
<tr>
<td>12/13</td>
<td>15,370</td>
<td>23,758</td>
<td>11,091,415</td>
<td>36,764,177</td>
<td>29</td>
</tr>
<tr>
<td>07/08</td>
<td>14,979</td>
<td>22,509</td>
<td>9,809,078</td>
<td>28,249,762</td>
<td>39</td>
</tr>
</tbody>
</table>

## Collection Statistics

<table>
<thead>
<tr>
<th>Year</th>
<th>Volumes in Library</th>
<th>Volumes Added (Gross)</th>
<th>Serial Subscriptions</th>
<th>E-Resources Owned/Leased (f)</th>
<th>Overall Use of the Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>17/18</td>
<td>5,273,930</td>
<td>323,221</td>
<td>127,658</td>
<td>1,257,778</td>
<td>16,492,719</td>
</tr>
<tr>
<td>16/17</td>
<td>5,224,181</td>
<td>200,731</td>
<td>100,463</td>
<td>1,193,930</td>
<td>15,489,613</td>
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<tr>
<td>12/13</td>
<td>4,858,743</td>
<td>328,548</td>
<td>68,300</td>
<td>691,418</td>
<td>12,065,393</td>
</tr>
<tr>
<td>07/08</td>
<td>3,981,278</td>
<td>126,853</td>
<td>61,990</td>
<td>461,235</td>
<td>6,441,281</td>
</tr>
</tbody>
</table>
a) Effective July 1, 2016, door counts at the Hunt Library were transitioned from turnstile counts (interior, at the entrance to the library) to building counts (at the building doors on Partners Way and The Oval).
b) Includes circulation of reserve materials, both print and electronic.
c) Amount reported to ARL includes NC LIVE and library-related expenditures made by NCSU colleges and units outside of OUC 25.
d) Excludes benefits.
e) Currently ARL’s membership includes 114 academic libraries.
f) E-books, e-journals, and e-databases; includes NC LIVE resources, starting in 2000/01.