Strategic Plan Implementation Update

June, 2015
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June, 2015

Strategy 1

Results 1-10
<table>
<thead>
<tr>
<th>Window</th>
<th>Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>English: sustainable use of environmental resources as a standing priority in operational and instructional practices</td>
</tr>
<tr>
<td></td>
<td>Content area scoring NCSSM intellectual properties and products</td>
</tr>
<tr>
<td></td>
<td>Apply for and receive contract of federal awards from state, federal, private foundation, or other qualified sources to fund</td>
</tr>
<tr>
<td></td>
<td>General revenue from financially self-sustaining or government programs to support the school's mission</td>
</tr>
<tr>
<td></td>
<td>Increase comparable charity donations to NCSSM by $200K annually</td>
</tr>
<tr>
<td></td>
<td>Increase charitable giving from across NCSSM families by an addition of $25K and 10 families annually</td>
</tr>
<tr>
<td></td>
<td>Increase charitable giving from across NCSSM alumni by an addition of $50K and 20 alumni annually</td>
</tr>
<tr>
<td></td>
<td>Increase student contributions to the institution by dominant giving from NCSSM</td>
</tr>
<tr>
<td></td>
<td>NCSSM employees and students foster a culture of charitable giving to the institution by dominant giving from NCSSM</td>
</tr>
<tr>
<td></td>
<td>Mission and objectives: Increase and diversify our sources of revenue and resources as we ensure sustainable use to best achieve our</td>
</tr>
</tbody>
</table>

Strategies and Results
Planning for Our Future - Building on Success
NCSSM Strategic Plan: 2012 - 2017
North Carolina
School of Science and
Mathematics

Office of Institutional Advancement

Strategic Plan Implementation Update
Strategies 1 and 5

Year 3 Mid-Year
July 1, 2014 - June 30, 2015

July 15, 2015

Brock Winslow
Vice Chancellor for Institutional Advancement

Katie Wagstaff
President, NCSSM Foundation
Strategic Plan Specific Results Assigned to Institutional Advancement

Strategy One: Increase and diversify our sources of revenue and resources as well as ensure sustainable use
1. Secure recurring state funding specific to the current operations and the expansion of distance education programming.
2. All elected and appointed leaders of NCSSM, including members of the Board of Trustees, Foundation Board of Directors, and Alumni Association Board of Directors, model a culture of charitable giving by donating financially to NCSSM.
3. NCSSM employees and students foster a culture of charitable giving to the institution by donating financially to NCSSM or making other contributions to the institution.
4. Increase charitable giving from NCSSM alumni by an addition of $30K and 200 alumni annually.
5. Increase charitable giving from current NCSSM families by an addition of $25K and 40 families annually.
6. Increase corporate charitable donations to NCSSM by $200K annually.

Strategy Five: Improve communication, public relations, and marketing
1. Improve the NCSSM website to enhance both internal and external communication.
2. Increase positive awareness of NCSSM.
3. Improve communication with all constituents of the NCSSM community such that pertinent information is available in a timely manner.

Overview

Of the 56 specific results called for in our 2012-2017 Strategic Plan, ten were assigned to the Division of Institutional Advancement, and eight of those 10 were slated to begin implementation in the first year. In reality, however, all were undertaken by necessity nearly from the start.

Six of these ten results (see items in bold below) are drawn from Strategy One, “Increase and diversify our sources of revenue and resources as well as ensure sustainable use to best achieve our mission and objectives,” and the remaining four from Strategy Five, “Improve communication, public relations, and marketing to achieve our mission and objectives.”

Implementations during this third year continue to build upon the work of the previous two years and, as indicated by our performance metrics, are generally yielding the results stipulated in the strategic plan. Our pace was slowed by unforeseen budget and personnel challenges, including hiring freezes, retirements, resignations and ensuing vacancies. We reported previously that we hoped to begin FY 14-15 with a fully formed team. However, it was not until February 2, 2015, that we established a full complement of personnel within the division, 5 members of which (40 percent) were hired within the past 13 months. Though we face an intimidating backlog of projects, we are understandably excited about our work together as a new team! Even so, highlights from this past year include a new branding implementation, an interim website refresh and outstanding fundraising results.

The remainder of this report addresses each of the ten specific result implementations attempted during the previous seven months.
Strategy #1 Summary

With our fiscal year ending, final results of donor activity and fundraising receipts are just being tallied. You will find enclosed illustrations of donor and financial activity to date.

We expect to exceed expectations for financial activity in the current year. We have in fact already eclipsed our goal, due primarily to strong performance in the corporate/foundation segment.

Other segments are performing satisfactorily at this time and continue to be generally receptive to increased frequency and customization of mass marketing activity. Our longer-term challenge remains to improve these activities even as we increase the frequency of more intentional and targeted activities to grow gift size and overall fundraising receipts. The addition of our new development director, Lauren Carr, and our new constituent relations director, Kim Logan, gives us more capacity to implement this shift.

In the shorter term, we have focused on operationalizing our annual fund program, which generates most of the mass marketing activity previously referenced. These activities have historically included seasonal direct mail solicitations, both traditional hard-copy and digital, phone-a-thon activities conducted by students, alumni, and parent volunteers and periodic special events. As Lauren has transitioned into her role, she has attempted to replicate these activities, incorporate additional programs, focus on donor retention and capture it all in writing in a clearly-defined annual fund development plan. We intend to increase the number of direct solicitations to eight per year and more consistently engage students in soliciting donors by phone. Additional programs include: establishing a “Giving Day,” incorporating a purposeful stewardship message in every “Catalyst” newsletter, strengthening content and interest in the “Connections” website, promoting employee and student matching gifts programs, expanding our “Loyalty Program,” increasing local/small business support and refining our acknowledgements process.

Many of these activities are designed to ensure that our donors understand the positive impact their gift makes on students and the school, feel appropriately appreciated, and have ample opportunity to engage with the institution. As solicitation activity increases, so must stewardship, acknowledgement, and engagement activities. While it is unlikely that these additional activities will generate immediate financial returns, they will help donors feel more deeply connected to NCSSM and increase donor retention over time, supporting both the donor participation and fundraising goals of the strategic plan.

See the following three illustrations for key performance metrics, including goals for the the five-year life cycle of the strategic plan as well as current financial and donor participation activity. You will also find additional information and discussion on each specific result.
Key Performance Metrics
5 Year Timeline

Anticipated Donation Results over the Five Year time period

<table>
<thead>
<tr>
<th>Benchmarks</th>
<th>FY 12-13</th>
<th>FY 13-14</th>
<th>FY 14-15</th>
<th>FY 15-16</th>
<th>FY 16-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corp. &amp; Fndn</td>
<td>$425,000</td>
<td>$743,000</td>
<td>$825,000</td>
<td>$1,025,000</td>
<td>$1,225,000</td>
</tr>
<tr>
<td>Alumni</td>
<td>$175,000</td>
<td>$205,000</td>
<td>$235,000</td>
<td>$265,000</td>
<td>$295,000</td>
</tr>
<tr>
<td>Families</td>
<td>$175,000</td>
<td>$200,000</td>
<td>$225,000</td>
<td>$250,000</td>
<td>$275,000</td>
</tr>
<tr>
<td>Leadership</td>
<td>$20,000</td>
<td>$30,000</td>
<td>$50,000</td>
<td>$80,000</td>
<td>$120,000</td>
</tr>
<tr>
<td>Employees</td>
<td>$12,000</td>
<td>$12,000</td>
<td>$12,000</td>
<td>$12,000</td>
<td>$12,000</td>
</tr>
<tr>
<td>Students</td>
<td>$2,000</td>
<td>$8,000</td>
<td>$8,000</td>
<td>$8,000</td>
<td>$8,000</td>
</tr>
<tr>
<td>Friends</td>
<td>$10,000</td>
<td>$10,000</td>
<td>$20,000</td>
<td>$30,000</td>
<td>$40,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$819,000</strong></td>
<td><strong>$1,208,000</strong></td>
<td><strong>$1,375,000</strong></td>
<td><strong>$1,670,000</strong></td>
<td><strong>$1,975,000</strong></td>
</tr>
</tbody>
</table>

Anticipated Participation Results over the Five Year time period

<table>
<thead>
<tr>
<th>Benchmarks</th>
<th>FY 12-13</th>
<th>FY 13-14</th>
<th>FY 14-15</th>
<th>FY 15-16</th>
<th>FY 16-17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alumni Donors</td>
<td>500</td>
<td>700</td>
<td>900</td>
<td>1,100</td>
<td>1,300</td>
</tr>
<tr>
<td>Families</td>
<td>550</td>
<td>590</td>
<td>630</td>
<td>670</td>
<td>710</td>
</tr>
</tbody>
</table>

Donation benchmarks established by statistical analysis of results from FY 00-01 through FY 10-11.
Statistical analysis of participation benchmarks are pending review.
"Families" constituency is comprised of current and past families.

Performance Metrics
Donor Participation Activity

<table>
<thead>
<tr>
<th></th>
<th>6/30/2013</th>
<th>6/30/2014</th>
<th>6/30/2015</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leadership</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOT</td>
<td>84%</td>
<td>92%</td>
<td>88%</td>
</tr>
<tr>
<td>FBOD</td>
<td>93%</td>
<td>90%</td>
<td>75%</td>
</tr>
<tr>
<td>Alumni Association BOD</td>
<td>96%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Employees</td>
<td>59</td>
<td>70</td>
<td>83</td>
</tr>
<tr>
<td>Students</td>
<td>185</td>
<td>191</td>
<td>143</td>
</tr>
<tr>
<td>Alumni</td>
<td>629</td>
<td>668</td>
<td>813</td>
</tr>
<tr>
<td><strong>Family</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online Junior Parents</td>
<td>11</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>Online Senior Parents</td>
<td>7</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Junior Parents</td>
<td>199</td>
<td>182</td>
<td>136</td>
</tr>
<tr>
<td>Senior Parents</td>
<td>169</td>
<td>147</td>
<td>160</td>
</tr>
<tr>
<td>Alumni Parents</td>
<td>224</td>
<td>240</td>
<td>134</td>
</tr>
<tr>
<td>Grandparents</td>
<td>31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Families Total</td>
<td>610</td>
<td>592</td>
<td>449</td>
</tr>
<tr>
<td>Corporations</td>
<td>60</td>
<td>60</td>
<td>64</td>
</tr>
<tr>
<td>Foundations</td>
<td>9</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

Counting method: Soft count of activity
Note that both a “hard-count” view of actual financial results and a “soft-count” view of donation activity by segment are included in the above illustration. The hard-count view is summative and consistent with our financial accounting; meaning that each donation received is assigned to only one source. The soft-count view reflects the influence of constituents on donation activity; meaning that a donation may be attributed to multiple sources.

For example, in the hard-count view for financial activity, personal donations made by Trustee Carr Thompson are reflected in the “leadership” donor segment. A soft-count view reflects her personal donations AND donations from the Burroughs Wellcome Foundation on which she had significant effect. Note that the soft-count view also accounts for other types of donations influenced by constituents such as corporate gifts, matching gifts, or gifts from family or friends. Such influences are not recognized by the hard-counting method but are important to understanding the overall context of fundraising activity. As you compare these two views, look for differences in segment totals (soft-count much higher than hard-count) as indicators of constituent activity.
Strategy #1
Specific Result #1

Secure recurring state funding specific to the current operations and the expansion of distance education programming.

Assigned to: Brock Winslow
Performance metric: Increased state funding
Summary of Implementation: Sustained effort to educate members of the NC General Assembly and UNC Board of Governors regarding the value and impact of our distance education programming.
Recommended next steps: Continue efforts to educate policy-makers, particularly about capital needs that constrain our ability to expand services to more students. More effectively engage elected and appointed principals of other constituents of NCSSM as institutional advocates.

This specific result was largely accomplished in July 2012, but requires ongoing efforts to both preserve these gains and advance future initiatives.

For example, during the last two legislative sessions, NCSSM, UNC-Asheville and UNCSA were all exempted from budget flexibility reductions by special provision in recognition of our small size, efficiency and high performance. Ideally, we will be able to preserve this exemption as necessary in future sessions.

During the 2015 legislative session, and amid increased demand for our services, we have advocated for priority capital needs, such as technology infrastructure, that support current operations as well as targeted expansion of distance learning and educational support capacities that especially benefit low-wealth schools in largely rural areas of the state.

In both the near-term and long-term, we should take care to preserve capacity to engage and educate policymakers about NCSSM.
Strategy #1
Specific Result #2

All elected and appointed leaders of NCSSM, including members of the Board of Trustees, Foundation Board of Directors, and Alumni Association Board of Directors, model a culture of charitable giving by donating financially to NCSSM.

Assigned to: Brock Winslow and Katie Wagstaff
Performance metric: 100% donor participation activity
Status report: See "Performance Metrics: Donor Participation Activity."
Result achieved, balancing for ex officio appointments and timing differences

Summary of Implementation: Board members were solicited regularly during board meetings and were contacted by their peer leadership with support from professional staff

Recommended next steps: Frequent, peer-driven solicitations and cultivation activities will continue and will be supported by professional staff

By the end of FY 2013-2014, our leadership boards far exceeded their goal for financial support to NCSSM. We appreciate the Chancellor and executive committee leadership of trustees, foundation directors and alumni association directors for undertaking much of the cultivation, solicitation and stewardship necessary to achieve this success. Most of our nearly 90 elected or appointed leaders committed their financial support to the NCSSM Foundation well in advance of year-end, inspiring others and relieving our professional staff of solicitation and collection responsibilities late in the year.
Strategy #1
Specific Result #3

NCSSM employees and students foster a culture of charitable giving to the institution by donating financially to NCSSM or making other contributions to the institution.

Assigned to: Brock Winslow and Lauren Carr
Performance metric: Increased donor participation activity
Status report: See “Performance Metrics: Donor Activity”
Summary of Implementation: Through a variety of efforts and campaigns, Lauren and the 14-15 Attaches have helped their respective peers gain awareness of the impact of the NCSSM Foundation with a strong focus on acknowledgement.

Recommended next steps: Continue to strategically cultivate these groups as their gifts will pay much greater dividends in later chapters of their lives; employees through planned gifts and students once they’re successful alumni.

In an effort to promote a culture of philanthropy and gratitude on campus among students and employees, we have focused on increasing the visibility of the NCSSM Foundation in a variety of ways. Examples include: decorations on the office or residence hall door of every donor, running a constant slideshow acknowledging donors on the large-screen television in Bryan Lobby, social media challenges where students highlight the opportunities for which they are most grateful, featuring students and families who have donated to NCSSM on an exhibit when you first enter the school, and signage around campus highlighting a variety of areas where the Foundation has supported a program or activity.

At the end of the last school year and at the beginning of this year, employees were directly solicited with a focus on payroll deduction. As a result, we have achieved and maintained stronger employee participation.

And at the suggestion of a parent, we have worked with the Business Office to allow graduating students/families to donate the remaining balance of their security deposit to the Foundation as a charitable gift.

Even so, inspiring students to donate without a no-cost gimmick or quid pro quo offer remains a challenge. We are grateful for the Fahey Challenge Endowment and the flexibility it offers to explore appropriate incentives and means to cultivate student philanthropy.
Strategy #1
Specific Result #4

Increase charitable giving from NCSSM alumni by an addition of $30K and 200 alumni annually.

Assigned to: Brock Winslow and Lauren Carr
Performance metric: Increased financial and donor participation activity
Summary of Implementation: Annual fund activities from previous years were replicated and are being evaluated in terms of success. Participation YTD is slightly higher than this time last year.
Recommended next steps: Lauren will complete and implement the Annual Fund Development Plan which will incorporate and allow capacity for analysis of fundraising activities so we can focus on our most successful methods of raising money and participation.

As shared in the overview, we are increasing the number of direct solicitations and more consistently making solicitation calls. In March 2015 we tested a "Giving Day" event and are evaluating the benefit of further developing this program. With a focus on donor retention, the volunteer efforts of our leadership boards were focused on donor acknowledgement rather than solicitation, as we believe this effort will better support donor retention. Additionally, our student attachés focused on basic prospect research to strengthen our alumni contact data and the attributes we can use to make more personalized solicitations.
Strategy #1
Specific Result #5

Increase charitable giving from current NCSSM families by an addition of $25K and 40 families annually.

Assigned to: Brock Winslow and Lauren Carr
Performance metric: Increased financial and donor participation activity

Summary of Implementation: Annual fund activities from previous years were replicated and are being evaluated in terms of success. Participation YTD is somewhat less than it was this time last year.

Recommended next steps: We plan on utilizing the prospect research resource available to us from UNC-GA to more intentionally solicit families with greater capacity.

We saw incredible energy and participation from our families in the first part of the academic year through a series of peer-to-peer challenges. Similar to the alumni segment, we expect an increase in giving from families with an increase in direct solicitations. We will also direct the volunteer efforts of our parent council in a similar fashion as with our alumni board, focusing on peer acknowledgment in order to build donor retention. Additionally, we hope to see an increase in financial activity from this sector by utilizing prospect research provided by UNC-GA to inform more prioritized and tailored solicitations of families with greater capacity.
Strategy #1
Specific Result #6

Increase corporate charitable donations to NCSSM by $200K annually.

Assigned to: Brock Winslow and Katie Wagstaff
Performance metric: As stated in the result.
Summary of Implementation: Additional effort has been placed on increasing giving and identifying new corporate donors. More emphasis has been given to highlighting and encouraging donors to take advantage of matching gift programs as well as loyalty programs.
Recommended next steps: Continue to work on streamlining the engagement process for corporate/foundation donors. Evaluate the sponsorship model for programmatic activities. Engage leadership team in identifying new corporate donors. Focus efforts on fieldwork within the sector.

During 2014-2015, we received a notable increase in corporate and foundation support, including the establishment of a $1 million endowment gift from the Burroughs Wellcome Fund. Altogether, we received more than $1.5 million from corporate and foundation sources by year's end.
Completed Results

Strategy 1 Result 7: Generate revenue from financially self-supporting outreach programs to support the School’s mission.
Person Responsible: Melissa Thibault

2014 - 2015

We reached our goal of a revenue-positive pilot program with a focus on quality. Meanwhile, we were able to develop a three year strategic plan with the guidance of Lenovo and have referred to those benchmarks along the way as we continue to use it to guide our priorities.

In 2014, 105 students completed 8 Accelerator courses. Seventy-five online students benefited from state-funded awards. Early revenue projections, including the revenue generated by state funds contributed to expanding our opportunities for online students in the summer, were set at $11,016 as noted in the Lenovo supported three year Income and Expenses plan. By cutting costs through sharing supplies and staff, and by expanding our enrollments, we were able to generate $19,844.90 to reinvest in academic programming at our school thereby exceeding expectations of our earlier projections for revenue.

Our monitoring and evaluation mechanisms proved useful with over 77% of students and over 50% of parents providing feedback. 99% of students and 100% of parents said they were satisfied with their experience. 93% students and 100% of parents said it was a good value compared to other programs they have attended.

In 2015, our primary goal is to again offer quality programming that best reflects the values and standards of our school. With guidance from the Lenovo-supported Strategic Plan for the Accelerator program, we are expanding our offerings, developing additional, professional-quality marketing materials, expanding our international reach, and focusing our web presence. We project a revenue-positive program again this year, generating at least $12,853.48, a portion of which will provide for advertising and for need based scholarships for the 2016 summer.

We are also exploring partnerships with two Chinese exchange programs to offer specific courses for a group of Chinese students. We would provide the course, either Music and Math, or an American Humanities course that covers US history, culture, and politics and they would handle recruiting, logistics, and a week of travel after our course.

Assessment of progress: Business plan developed and implemented. Continued identification of partnership opportunities and strong markets (for example, middle-grades) for programming. Status: Complete as of 2015

Strategy 3 Result 6: Consider and support opportunities for social, academic, and service-learning interactions among all NCSSM students, virtual and residential.
Person Responsible: Melissa Thibault

2012-14 recap

Chris Thomas and Ross White worked to coordinate opportunities through collaboration between DEEP staff and the appropriate staff from academic programs and student life divisions.

- Academic: Learning together
Residential and virtual students in common courses: Residential students in online courses (2012-13 51 enrollments, 2013-14 34 enrollments.) Online students in residential evening elective courses: requires additional procedures.

Summer programs: 2013 Engineering, Humanities and Mathematics Research and Mentorship opportunities included NCSSM Online students. Online students participate in Summer Leadership and Research Program and Summer Bridge. Online students were included in the NCSSM Summer Reading program, although discussion groups were not blended between programs. Summer Accelerator program expanded; potential for fee-based participation by residential students. (NCSSM Online Students compete for limited state-supported course enrollment awards.)

Ethics and Leadership conference: online students and alumni participate and assist with sessions.

- Social / Community:

NCSSM Online students attend prom and invited to other all-school social and cultural events, contribute to Blue Mirror literary magazine, and are represented in student government. Students are also included in campus events sponsored by Counseling such as College Eve and the school's annual financial aid presentation.

- Service and Service Learning:

Online, residential, and IVC students included in a leadership cohort dedicated to serving younger students as tutors, mentors, and digital content developers. Online students now serve as Admissions Ambassadors alongside residential students for some events.

2014/2015 Update

Items Continued from Previous Years

<table>
<thead>
<tr>
<th>Item</th>
<th>Notes on Accomplishments or Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Students continue to have the option to enroll in some online courses. Residential students were offered 16 course sections in 2014-15.</td>
<td>Difference in trimester/semester schedule, the school calendar differences, and a partial course overload limit residential student interest in online enrollment.</td>
</tr>
<tr>
<td>Online Student Government. Six representatives were elected for 2014-15</td>
<td>Students did not interact with residential student government in 2013-14 or 2015. In 2014-15 we set up a separate meeting to ensure engagement; we will continue to advocate for one student government.</td>
</tr>
<tr>
<td>Shared Academic Extracurriculars. Online students are offered opportunity to participate in Blue Mirror (literary magazine), Broad Street Scientific, NCSSM TedX conference, option to participate in State Science Fair (if they cannot compete locally),</td>
<td>Local students may participate in some academic sponsored activities, such as FIRST Robotics and National Society of Black Engineers, and music..</td>
</tr>
<tr>
<td>Academic Events. Online students and families are invited to Family Day, College Eve, and NCSSM Ethics and Leadership Conference.</td>
<td>Family Day students participate in separate programming. We have built more opportunities for college planning and sessions building on expertise of faculty and staff into sessions for online students.</td>
</tr>
<tr>
<td><strong>Online Ethics and Leadership students</strong></td>
<td>are housed and provided food in order to participate in the program.</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Summer Reading. Online students read the same book as residential students.</strong></td>
<td>Due to the scheduling of summer reading program components; online students participate in a separate discussion. A small joint group of online and residential students were able to participate in a joint live webconference with the author.</td>
</tr>
<tr>
<td><strong>Student Activities. Prom and Afterprom party.</strong></td>
<td>Due to the online program goal to reach all students in all areas and inability to provide housing, most student activities are not a good fit for inclusiveness. We highlight daytime activities were possible. Support of afterprom permits more student participation.</td>
</tr>
<tr>
<td><strong>Summer Research Internship Program</strong></td>
<td>Online students can only participate in off-campus interdisciplinary research opportunities. Participation rate is based on the number of students the whole program can take each year. Fourteen students participated last year.</td>
</tr>
</tbody>
</table>

**New/Updated Items**

<table>
<thead>
<tr>
<th><strong>Item</strong></th>
<th>Notes on Accomplishments or Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIDE (Student Instructors Developing Enrichments) Leaders.</td>
<td>Online, IVC, and Residential students can jointly participate in this program to provide STEM-enrichment to K-8 students in North Carolina.</td>
</tr>
<tr>
<td>Online Student Ambassadors</td>
<td>Similar to the residential student ambassador program, we developed a selection process for online students to assist in the recruitment of all students for NCSSM. We are working on building and formalizing training, opportunities, and connection with other admissions ambassadors.</td>
</tr>
<tr>
<td>Broadening Research Curriculum</td>
<td>NCSSM received a UNC system fellowship for the Innovative Instructional Incubator. The program allowed us to develop common curriculum for students entering or interested in research opportunities. The curriculum will be taught as a similar course to residential and online students, with components</td>
</tr>
</tbody>
</table>
### Summer Leadership and Research Program

- Reusable for other high school student audiences. Approximately 12 online students will take the course in 2015.
- This was the first year online students participated. 20 online students participated in the program out of 49 students.

### Discontinued Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Notes on Accomplishments or Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared College Visit sessions</td>
<td>Discontinued. Technical barriers to account access and training students assisting in broadcasting, low online student interests, and a very significant workload to set up.</td>
</tr>
<tr>
<td>Shared Club Participation</td>
<td>A few online student clubs have started that cater to online students; without a strong school framework for broader club organization and participation, joint club participation is hindered. Online students indicate a lack of engagement in clubs that don’t have specific outcomes at the onset. We are going to investigate encouraging clubs targeted on academic or service outcomes.</td>
</tr>
</tbody>
</table>

Efforts continue to increase the number and scope of options, as well as to increase the number of students engaged while ensuring the experience is positive for all involved and contributes to the overall goals for engaging students across programs.

**Status: Complete as of 2015**

**Strategy 8 Result 1: Define goals, objectives, intended outcomes for NCSSM outreach activities.**

**Person Responsible: Melissa Thibault**

**Summary of Implementation Efforts 2012-13**

Carole Stern and Ross White led this effort. Referencing the focus groups and research for the strategic plan, participants have focused upon content, skills and habits of mind required for students to be Career and College Ready, as well as the greatest math and science challenges facing NC schools today, including the implementation of new Common Core Math and Next Gen Science standards. Internal constituents and key NC education research
leaders involved in these efforts were consulted to determine focal point for developing content and teacher professional development.

In conversation with groups of internal and external stakeholders, the following themes emerged as goals for NCSSM’s institutional outreach efforts:

- Target under-represented populations in under-resourced areas. NCSSM should recognize that it can have significant impact by developing partnerships with LEAs and schools that have not been the focus of large-scale efforts by other state agencies (including the Department of Public Instruction). NCSSM should evaluate demographic data and align outreach targets to that data.

- Focus engagement on a few partnerships. Recognizing that ongoing individual outreach efforts serve a broad population, stakeholders were emphatic that the school cannot engage deeply with too many LEAs or schools and should focus resources on strategic partnerships.

- Leverage the expertise and excitement of faculty and staff, while giving them a chance to innovate and grow their skillsets. While NCSSM has a been successful in areas including face-to-face professional development, curriculum development, video, and digital asset development, the school should not limit the scope of activities in partnerships to what has been done before. New activities, such as online professional development, MOOCs, and blended learning, should give faculty the opportunities to challenge themselves and enhance their skillsets—a process which will lead back to their classroom teaching.

- Broaden systematic engagement without discouraging individual outreach efforts. Stakeholders applauded the breadth of individual and small-team outreach efforts from NCSSM faculty and staff. With deep connections to professionals in their fields, the ongoing relationships that individual faculty and staff have developed often serve as a lifeline for the populations they affect. As NCSSM clarifies its institutional goals and allocates time and funding accordingly, it must be careful to encourage and celebrate individual accomplishments in outreach, particularly in the areas of scholarship, leadership, and community service.

- Consolidate efforts, particularly in the summer. Various existing outreach efforts are developed by different areas of the school. Currently, each individual effort must coordinate a variety of functions (including marketing and publicity, facilities and inventory management, supervision, and activity programming), often replicating for the short term a service already provided in another area of the school. Efforts will be more efficient and scalable with clear areas of responsibility.

- Organize, collect, and extend the reach of digital assets. The strategic plan goal of reaching a million students in five years requires that NCSSM make digital assets more readily searchable and provide access to those assets in multiple contexts. Engagement efforts should look to leverage and refine existing digital resources, but NCSSM should also look for ways to re-publish and disseminate those materials.

The draft proposal was presented to the Board of Trustees DEEP subcommittee for feedback in May of 2013, and is complete and ready to be presented to the Strategic Planning Committee. [See appendix 1]

**Status:** Complete as of 2014
NCSSM Strategic Plan Implementation

Annual Strategy 1; Result 10 - Person Responsible: Steve Warshaw (Progress in 2013-14 is noted in italics.)

Establish sustainable use of environmental resources as a standing priority in operational and instructional practices. (Partially Complete)

Measure(s):

- Establish a Sustainability Advisory group charged with researching, planning and overseeing NCSSM’s sustainability efforts, such as:
  - Create sustainability leadership positions for students.
  - Review NCSSM’s curriculum and facilitate incorporation of more sustainability-related materials in the curriculum.
  - Develop an energy conservation and sustainability best practices guidebook, based on recognized standards, for NCSSM students and staff. Integrate into employee and student orientation regarding the importance of sustainable practices and what we can do as individuals and collectively to implement those effectively.
  - Develop a plan to reduce paper consumption.
  - Establish effective recycling and composting programs and document responsibilities for each.
  - Purchase and distribute recycling containers and establish daily collection.
  - Replace disposable water bottles and styrofoam dishes with more sustainable alternatives.
  - Monitor the effectiveness of these projects.
- Hire or designate an Energy Manager and establish a timeline for implementation of Energy Manager’s recommendations for cost savings. Measure these and make subsequent changes as needed.
- Communicate NCSSM’s sustainability efforts and achievements via the NCSSM website and other media.
- Form an NCSSM group to develop and maintain a list of cutting-edge opportunities to transform NCSSM into a model of sustainability.

Summary of Implementation Efforts: 2012-2015

The Sustainability Advisory Group was established and held its first meeting October 8, 2012. SAG served mainly as a clearing house for sharing information and coordinating activities of groups on campus, such as the SPLs, AGC, Student Life and Plant Facilities. During 2012-14 the SPLs consisted of 4-5 senior students whose work service was devoted to planning and implementing sustainability-related activities. In 2014-15 the group was increased to eight seniors. They met 1-2 times/week, participated as active members of SAG and conducted activities with other interested students including:
• A Kickoff Event in fall of each year. The events included guest speakers in 2012 and 2013, and the Carolina Ukulele Ensemble in 2014. In 2012 there were sessions on sustainability-related topics, many of which were designed to stimulate students to develop projects. Each student was required to attend the speaker’s presentation and two breakouts, which were conducted by NCSSM and Triangle Community representatives. In 2013 the event again hosted a guest speaker and ice cream social using locally sourced ice cream and serving only in non-disposable containers. In 2014 the locally sourced ice cream was dessert for a picnic dinner that included reusable dishes and lower impact food preparation. In 2013 and 2014 students wrote their intentions to be more sustainable on paper leaves which the SPLs hung on a “Sustainability tree” in Bryan lobby.

• A Green Uninitiative Challenge in 2012-13, in which students who chose to participate designed and implemented their projects. Ten projects were displayed and judged at an Earth Day Sustainability Fair on April 22, 2013.

• A Sustainability Cup competition among halls to encourage turning off lights, recycling properly and having special sustainability-related hall activities. Sixteen halls began the 2012-13 competition, and six completed it. Participation was about the same in 2013-14 and grew in 2014-15. A plaque was hung in Bryan Lobby recognizing the winning hall each year.

• Speakers in the NCSSM Colloquium, films and other travel to off-campus events related to sustainability. These occurred throughout 2012-15 and included 18 speakers, 4 films and 7 off-campus events.

• Distribution of sustainability-themed reusable NCSSM water bottles at a variety of competitions and events.

• A Cooking Challenge for students including an effort to use locally sourced ingredients.

• A Sustainability Scavenger Hunt in spring of 2014.

• Sessions on “How To Start a Sustainability Project at Your School” for students and teachers attending the NCSSM Ethics and Leadership Conference each year in November.

• Development of a sustainability website linked to the school website and designed to keep the campus community informed about sustainability-related events and opportunities.

• A sustainability newsletter that was sent to the campus community several times during 2012-15 to supplement the website in providing information.

• A regular sustainability-related column in The Stentorian.

• Notifications to turn off electrical items and otherwise prepare prior to extended weekends and holidays.

• Purchase of 84 recycling bins with a Student Government grant and Academic Programs funds. These were distributed across the campus with daily pickup by work service students.

• Purchase of 10 compost containers, placed in residence halls and office areas as a pilot project and emptied in a rotating composter by Hall Representatives and work service students.

• Piloted composting of pre-consumer food waste in the PFM kitchen and post consumer food waste in the dining room.

• Purchase of reusable grocery bags for students to borrow and use. 3-4 bags were distributed to each hall in 2014-15.
• Laminated sustainability-related fact sheets placed in hall restrooms.
• Creation of a vegetable garden and installation of gutters and rain barrels on the bike rack roof to provide water for the garden.
• A year-ending sustainability block party that included a more sustainably produced meal, music, scavenger hunt and outside games.
• An “Hour Without Power” on the campus during Sustainability events.

AGC conducted the following:

• A contest to design a second rain garden on campus. After the winning design was selected, AGC obtained funding and in-kind support from Plant Facilities and students to locate and build the rain garden, which is functioning as designed.
• Conduct and analyze the results from a sustainability literacy survey.
• Research optimal locations for recycling bins and trash containers and label these with signs designating what should be placed in each.

Plant Facilities made major progress on projects including:

• Repair of a water leak that had caused the loss of approximately one million gallons of water.
• Repair of steam leaks that wasted an estimated 10-15% of the natural gas energy used to operate our boilers.
• Replacement of the T-12 lamps with the more energy efficient T-8 lamps in Hill, the Library, and Reynolds East, B & C.
• Planning for installation of a 9.3 kW solar panel array on the bike rack roof with data transmitted to a website for educational use.
• Began working with Johnson Controls, Inc. to install more efficient lighting including LEDs.

Faculty did the following:

• Inspired by the students’ Sustainability Cup, organized a month-long Sustainability Challenge in January 2014.
• Created a website for teachers to upload curriculum lessons related to sustainability.
• Chemistry and Humanities each adopted a list of sustainable practices.

In addition, the Academic Programs Office and the Research and Mentorship Coordinator worked with Meredith College to establish summer student research internships. Six NCSSM students conducted field research in environmental science with Meredith College faculty and students during 2013, 6 in 2014 and 8 in 2015.
Strategic Plan Implementation Update

June, 2015

Strategy 2

Results 1-9
<table>
<thead>
<tr>
<th>Strategy and Results</th>
<th>Improving Our IT Systems and Services to Support the Mission of Our Residential and Virtual Community</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluate existing and potential lab spaces, and upgrade lab facilities, equipment and safety practices to effectively accomplish the school's mission.</td>
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<tr>
<td>Increase student satisfaction by restructuring housing assignments and resource replacement cycles to meet the needs of UNC System schools.</td>
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<tr>
<td>Reconfigure and equip identified learning environments to facilitate student-centered, active learning.</td>
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<tr>
<td>Continuously improve manageability, flexibility, and cost efficiency of campus IT systems, staff and operating while maintaining or increasing end-user satisfaction.</td>
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<tr>
<td>Adopt International Standard Organization (ISO) 27002 as the code of practice for information security.</td>
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<tr>
<td>Upgrade IT infrastructure to protect and improve IT services.</td>
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<tr>
<td>Increase energy efficiency by 20% in order to reduce costs for utilities for the physical campus.</td>
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<tr>
<td>Implement best practices to increase efficiency in maintaining the physical plant and facility.</td>
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**Assigned To:**
- Warshaw
- Roberts
- Alston
- Allan

**Status:**
- Complete
- Underway
- Partially Complete
- Not Yet Underway

**Year:**
- 2015-2016
- 2014-2015
NCSSM Strategic Plan Implementation Annual Update
Last Updated: 2 Mar 2015

Strategy 2; Result 1: Person Responsible: Richard Alston
Implement best practices to increase efficiency in maintaining the physical plant and facility.
(ITS: Ongoing, Operations: Unknown)

Strategy 2; Result 4: Person Responsible: Richard Alston
Adopt International Standard Organization (ISO) 27002 as the code of practice for information security. (Partially Complete)

Strategy 2; Result 5: Person Responsible: Richard Alston
Upgrade IT infrastructure to protect and improve IT services. (Ongoing)

Strategy 2; Result 6: Person Responsible: Richard Alston
Continuously improve manageability, flexibility and cost efficiency of IT systems, staff and operations while maintaining or increasing end-user satisfaction. (Ongoing)

Summary of Implementation Efforts - 2014-2015

Strategy 2; Result 1

Cell Tower:
The agreement to install an AT&T cell tower on the NCSSM campus was withdrawn by AT&T in the summer of 2014. They remain interested in the partnership but have placed the project on hold pending other active AT&T initiatives including an AT&T fiber project in Durham. Until this and possible other projects are resolved, the NCSSM/AT&T cell tower is delayed.

Hardware and Software Procurement:
The first cycle of department-driven hardware purchases was implemented in August 2014. Departments assets were inventoried and hardware replacement was executed for individual user's computers. For windows users, 44 Lenovo L440 laptops were purchased and distributed. For macs users, 26 MacBook Air units were leased and distributed according to departmental preferences.

A similar procedure for software procurement and distribution was initiated in early Winter 2015. The Academic Technology Committee began an inventory of all software based on feedback of all staff and faculty. Procedures and best practices for software procurement for follow this comprehensive survey.

Strategy 2; Result 4
Implementation of Result 4 began in the spring of 2012. The Chancellor of NCSSM formally endorsed the 'Intent to Adopt ISO-27002' declaration and it was delivered to the UNC-General
Administration (John Leydon, CIO) and the UNC Technology Security Council. NCSSM IT completed a crosswalk matching policies between the State of NC IT and ISO-27002. Remediation of deficiencies identified by the crosswalk are in progress and it is expected that the alignment, or a plan for future remediation with ISO-27002 will be completed in the Fall of 2015.

Strategy 2; Result 5

Bandwidth:
The rate limiting component in network performance for both staff and students has been our bandwidth limit. Like all of the UNC constituents, NCSSM purchases ISP services from MCNC. Prior to the summer of 2014, our limit was 150 Gb/s. Prior to the start of the 2014-2015 academic year, we increased our bandwidth to 275 Gb/s. Our current bandwidth has been much more effective in meeting our users’ service demands. However, we anticipate another 30% increase will be needed for the next academic year.

Clearpass:
Clearpass is our network policy appliance. Anticipating the increased number of devices on our campus for the 2014-2015 academic year, we implemented a device limit of 3 for all students. Devices include computers, game stations, smartphones, tablets, etc. The device quota of 3 has resulted in a significant improvement of network performance.

Palo Alto Network:
The Palo Alto Network (PAN) firewall was installed in August of 2014. The PAN firewall is a new generation firewall that features many security improvements over first generation firewalls. Specifically,
- the PAN firewall manages web 2.0 content (user-generated content rather than static pages)
- policies are user-based (userIDs) rather than IP addresses allowing us to do much more tailored network traffic
- malicious traffic is intelligently classified and quarantined due to learning algorithms and daily data signature updates
- a greatly improved intrusion detection system
As a consequence of the faster, safer and tailored firewall, we have better performance and fewer false positives (inadvertent traffic blocks).

Incremental Improvements:
Access points have been added to the wireless network in both student halls and classrooms. A total of sixteen access points were deployed which are the limit we can add to our current controller. We need more but this need will be addressed in the GPON initiative discussed below.

We have also implemented better rogue printer control and have distributed USB printer
cables who brought wireless printers to the NCSSM network.

**Strategy 2; Result 6**

Personally Identifiable Information (PII):
Anti-PII software was added to the network in the winter of 2015. This software monitors and quarantines PII data. Quarantined data includes social security numbers, credit card information, bank account numbers, passwords and other like data. All PII data has been removed from network drives - both personal (P) and departmental (W) drives. We have also begun quarantining PII from staff computers beginning with those departments that work with PII data (Business, Human Resources, Registrar, Advancement, Counseling and Institutional Research). We anticipate all PII will be removed from NCSSM assets by the end of the academic year.

Optical Network Upgrade:
NCSSM has completed a comprehensive network master plan to be used for an RFP to upgrade all components of the network. The master plan was completed in February 2015 by NCSSM staff along with MCNC network engineers and shared with network consultant, Phi Emer.

This plan includes:
- campus mapping and trenching for all cable paths
- replacement of core fiber backbone
- horizontal cabling to every hall room, office and classroom
- in-building risers and terminations
- replacement of networks switches as needed to support projected drop needs
- upgrade or new constructions of all Master/Intermediate Distribution Facilities (M/IDFs) compliant with ISO 27002 specifications
- addition of necessary access points to meet steady state demands
- unified communications (VoIP)

The cost for the project is estimated at $2.6M.

**ITS Staffing:**
Effective December 15, 2014, ITS staffing fell by one FTE. NCSSM ITS has been operating at reduced staff since that retirement and over the remainder of the fiscal year, ITS and NCSSM Administration are evaluating the best use of this resource in ITS’ future plans.
Strategy 2; Result 1: Implement best practices to increase efficiency in maintaining the physical plant and facility. (Partially Complete)

Person Responsible: Robert Allen

Summary of Implementation Efforts in 2012-2013

Work began on Strategy 2; Result 1 in November 2012. Criteria was developed for a comprehensive work order and preventive maintenance system for NCSSM’s infrastructure and plant facilities. This criteria was reviewed and revised by a school-wide team in December 2012. A request for proposal (RFP) was developed, issued, and reviewed in February 2013. The recommended and selected system was SchoolDude.

The Plant Facilities staff started inputting NCSSM data into the work order system module in March 2013. The link to the Plant Facilities work order module and the IT Help Desk module in SchoolDude was established on the NCSSM portal in May 2013. The Plant Facilities staff was trained on the system in June 2013.

Summary of Implementation Efforts in 2013-2014

The Plant Facilities staff worked on recording NCSSM infrastructure into the computerized maintenance system. A quote was obtained for the Preventive Maintenance (PM) module of SchoolDude. An annual evaluation of the work order system was completed to identify ways for improvement. Currently 87% of the school’s employees have logged into SchoolDude. Approximately 2000 work orders were processed in 2014.

Continued Implementation Efforts in 2014-2015

The two remaining steps of Strategy 2; Result 1 that we will focus on in fiscal year 2014-15 are:
1. Complete the input of NCSSM infrastructure, plant facilities, and equipment data into the computerized preventive maintenance module of the system.
2. Implement the preventive maintenance system at NCSSM.
NCSSM Strategic Plan Implementation Annual Update

Strategy 2; Result 2a: Increase energy efficiency by 20% in order to reduce costs for utilities for the physical campus. (Partially Complete)

Person Responsible: Robert Allen

Summary of Implementation Efforts in 2012-2013

Work began on Strategy 2; Result 2a in June 2012. NCSSM’s Plant Facilities staff completed the lighting audits and determined the number of lights that needed to be replaced. At the time of completion of the audit, funding was not identified that would allow the replacement of the light fixtures.

NCSSM identified and provided a request for quotation from at least three vendors to provide price quotes for the T-8 light fixtures and room motion detectors. NCSSM is also considering LED lights as an option.

The State of North Carolina, specifically the UNC System has entered into a lighting performance contract with Johnson Controls. Johnson Controls will be conducting a campus lighting survey on all 17 UNC campuses in order to determine the best course of action for the campuses that choose to participate.

The staff at NCSSM is considering how best to utilize the state wide contract. In the interim, the Plant facilities staff has replaced T12 with the more energy efficient T8 lamps in a number of our buildings and will continue to do so as the needs arise until a final determination is made on the Johnson Controls contract.

Summary of Implementation Efforts in 2013-2014

We investigated opportunities for NCSSM with Johnson Controls and are in the process of evaluating the options. The system wide lighting project, through UNC GA has been approved and NCSSM is in line to have the lighting fixtures installed in fiscal year 2015-16.

Continued Implementation Efforts in 2014-2015

The two remaining steps of Strategy 2; Result 2a that we will focus on in fiscal year 2014-15 are:

1. We will evaluate the opportunities for NCSSM with Johnson Controls.

2. Complete an evaluation of energy usage compared to previous periods to identify the improvements gained by installing the energy efficient light fixtures and room motion detectors.

Updated 3/2/15
NCSSM Strategic Plan Implementation Annual Update

Strategy 2; Result 3a: Meet current NC Building Code standards and energy efficiency recommendations by upgrading the infrastructure and facilities.

(Complete)

Person Responsible: Robert Allen

Summary of Implementation Efforts in 2012-2013

Work began on Strategy 2; Result 3a in October 2012. The staff at NCSSM’s physical plant performed an evaluation of the steam leaks to best determine the location of the most costly leaks.

The contract for the steam leak project was awarded to Mid-Atlantic Infrastructure Systems, Inc. in October 2012. To minimize the impact to the campus, work was scheduled over the extended winter, spring and summer breaks. During our spring break camera inspection and exploratory work was performed. In June 2013 the identified steam leaks were repaired which was ahead of the proposed August schedule.

Summary of Implementation Efforts in 2013-2014

The staff monitored the HVAC system in order to address any steam leaks until we can replace/update the entire HVAC system.

Continued Implementation Efforts in 2014-2015

1. Due to the age of our current HVAC systems, there is always the potential for formation of new leaks. The staff will continue to monitor the system to address any such leaks until we can replace/update the entire HVAC system.
Strategy 2: Result 9 - Person Responsible: Steve Warshaw
Evaluate existing and potential lab spaces and upgrade facilities, equipment and safety practices to effectively accomplish the school’s mission. (Partially Complete)

Measure(s):
- Update plan for improvement of lab facilities
- Determine location for Fab Lab
- Improve Engineering and Technology facilities
- Improve Science lab facilities

Summary of Implementation Efforts: 2012-2015

Work on implementation of Strategy 2; Result 9 began with a survey of space around the NCSSM campus by Drs. Sheck and Sims. Following that survey of space, architects from DudaPaine visited NCSSM on multiple occasions to view spaces to be renovated, take pictures, and make measurements. Subsequently plans for each space were developed and reviewed during multiple meetings with the architects. In addition, they were reviewed by the Science and Engineering and Technology departments and feedback was provided to DudaPaine. Preliminary plans were drawn and as of May 2013, a draft project schedule was developed. Planning continued into the summer and fall 2013, including additional input on the Fab Lab equipment list and design from university faculty and Carl Ryden, who raised the Foundation funds for the lab.

We learned in June 2013 that State Repair and Renovation funds would be available to begin this work. A proposed timeline of renovations was developed, as follows:
- July, 29, 2013: Submission of final construction documents (CD)
- August 2013: Issue CD to State Construction office (SCO) for review
- October 2013: Bidding and Approval of CD
- February 2014: Begin renovation of Rex lab (Fab Lab site)
- Summer 2014: Fab Lab Occupancy
- May 2014: Bidding for Ground Reynolds Lab (GRL) and Engineering & Technology Suite (ETS)
- June 2014: Begin renovation of GRL and ETS
- August 2014: ETS/GRL Occupancy
- December 2014-April 2015: CD review and bidding for 4th Floor Physics renovation
- April 2015-May 2015: Abatement of 4th Floor Physics
- June 2015: Begin renovation of 4th Floor Physics
- October 2015: Occupancy of 4th Floor Physics

During construction of the Fab lab and renovation of the Rex lab space, the Science department will need to plan for alternate spaces.

Two existing spaces in the Science department were improved during 2013-14—B447 and the Chemistry Alcove. B447 was made into a multipurpose space so that the physics elective, FTEMO, could be taught there. Lab benches were purchased, some old equipment was sent to State surplus and some useable equipment was moved down to the Chemistry Alcove. The Alcove was renovated so that a donated fume hood could be installed. A fume hood and chemical cabinets were purchased for the REX lab. The whole-floor exhaust system for Chemistry was repaired. Analytical balances were purchased for Chemistry.

Creation of the Peter T. Haughton Fabrication Lab was completed along with upgrades to the REX Lab in the summer and fall of 2014. Updated equipment and furnishings were purchased and installed in both
labs. A Fab Lab Director and a part-time Fab Lab Supervisor were hired, safety protocols were
developed and student lab assistants were designated. The lab became available to students and staff
for use in May 2015.

The REX lab renovation was completed in winter 2014. While the square footage was reduced by half,
the functionality was greatly increased with improved design. The REX lab was in use by Spring 2015.
Strategic Plan Implementation Update

June, 2015

Strategy 3

Results 1-6
### Status Categories

<table>
<thead>
<tr>
<th>Tile</th>
<th>Underway/Partially Complete</th>
<th>Complete</th>
<th>Underway/Pending Beginning Indicated</th>
<th>Not Yet Underway/Year Beginning Indicated</th>
<th>Complete and Support Opportunities for Social, Academic, and Service-Learning through Social Media Among All NCSS Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014-2015 Through 2014-2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Develop a school calendar and daily schedule that will optimize opportunities for collaboration between residential and virtual programs.</td>
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</tbody>
</table>

**Ensure our residential and virtual programs work collaboratively to fulfill our mission.**

### Strategies and Results

**Planning for Our Future - Building on Success**

NCSSM Strategic Plan: 2012 - 2017

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**Note:** The table above reflects the strategies and results in the NCSSM Strategic Plan and their implementation status. You can click on the colored box for further information. Annual progress reports for each result that is complete or underway.
NCSSM Strategic Plan Implementation Annual Update

**Strategy 3; Result 1: Person Responsible:** Todd Roberts
Develop a school calendar and daily schedule that will optimize opportunities for collaboration between residential and virtual program. *(Complete)*

**Summary of Implementation Efforts – 2012-2015**

Work began on **Strategy 3; Result 1** in the spring of 2012 by forming a representative committee to work on developing recommendations regarding the school calendar and daily schedule and by collecting survey data from faculty, staff, current students and recent alumni regarding the school calendar and daily schedule. The survey results were one of many pieces of data used by the Calendar Committee during their work in developing recommendations regarding the calendar and the daily schedule. The calendar committee began work in June, 2012. The committee established the following goals for its work in alignment with the action plan originally developed for this result:

- Improve the structural alignment between the residential program and DEEP
- Optimize coordination between academics and residential life
- Allow for students to have an authentic choice of courses and electives, including protecting time to expand the engineering and technology components of STEM
- Provide opportunity for real-world experiences
- Allow some “common” time with choice activity
- Allow time for well-managed transitions, efficient administrative and faculty workflow, and extended breaks
- Provide flexibility in scheduling academic time, including variation in frequency and duration
- Reduce conflicts among classes, athletics, extracurricular activities, etc.

The committee completed its work in March, 2013 and made a recommendation to modify the daily schedule beginning in fall, 2013. A copy of the new daily schedule is attached. The new daily schedule modifies the rotation of course blocks so that the blocks rotate in either the morning or afternoon, but not both. The committee identified that the current course block rotation where blocks rotate between morning and afternoon is one of the most problematic concerns for teachers who teach in both residential and IVC courses.

The committee also made a recommendation to include an “Innovation” week in the schedule once each trimester (attached). This week allows for unscheduled, flexible time for students and faculty to engage in innovative pursuits. This recommendation helps address **Strategy 7, Result 3**.

Both the new daily schedule and the “Innovation” weeks were approved for implementation in the 2013-2014 academic year.

The committee did a thorough job of analyzing the current trimester calendar and a semester/quarter calendar. A presentation of the analysis is attached. The analysis identifies benefits and drawbacks to both versions of the calendar. The committee was not able to reach consensus regarding a specific recommendation. Based on the information provided by the committee, the Chancellor made the recommendation to maintain the current trimester calendar, but to continue looking for improvements to the academic
calendar and how courses are taught, which could result in modifications to the calendar for some courses, or on a larger scale as innovative ideas are identified.

**Continued Implementation Efforts – 2013-2015**

The new daily schedule and "Innovation" was implemented in the 2013-2014 academic year. The effectiveness of the "Innovation Week" was evaluated at the end of the year to determine the benefits of "Innovation Week" and any necessary modifications to improve "Innovation Week" for the 2014-2015 academic year. Modifications were made to the Innovation Week calendar and schedule for the 2014-2015 academic year. Based on the feedback received at the end of the 2013-2014 school year, Innovation Week was held in the first and third trimesters with changes to the testing calendar surrounding the week. Feedback was gathered at the end of the 2014-2015 school year and modifications are planned for the 2015-2016 school year. Feedback from students and faculty/staff regarding the value of Innovation week has been mixed. The question is regarding the relative value of the time spent during the week versus the loss of class time. Generally students are more favorable than faculty about the merits of Innovation Week.

As we continue to look at opportunities to improve delivery of instruction in future years, proposed changes to the daily schedule or yearly calendar for specific courses, or on a larger scale, will be reviewed and evaluated by departments where changes are proposed and Instructional Council prior to any recommendations for change being made to the Chancellor. Any proposed changes will be evaluated against the intent of **Strategy 3; Result 1** and **Strategy 7; Result 3**. While the work for this result is completed in one sense, in another we will continue to look for ways to allow more flexibility in the schedule, particularly as it allows for more time for collaboration among faculty/staff and students and more time for innovation.
Strategy 3 Result 2: Academic Programs and DEEP will have shared responsibilities for supervision of NCSSM faculty with DEEP responsibilities.

Persons Responsible: Steve Warshaw and Melissa Thibault

2014-15: Efforts to support teaching and learning in both distance and residential programs through shared supervision has begun with modifications to some administrative practices. Engineering, Humanities, Math and DEEP have had inclusive faculty interview committees and department meetings. Leadership from almost all departments and disciplines work together on observations, teaching assignments, cancelling under-enrolled classes, development of improvement plans, and coordination of summer and additional employment. With the exception of Science, all faculty seated in DEEP are included in the departmental activities of the appropriate discipline.

Status: In progress.

Strategy 3 Result 3: Academic Programs will be responsible for the content of all NCSSM courses and will work collaboratively with DEEP to develop curriculum and instructional technology, and to determine the best delivery of the content for both residential and virtual programs.

Persons Responsible: Steve Warshaw and Melissa Thibault

2014-15: As with supervision of faculty, some administrative changes to course content procedures have been formalized. The Curriculum Review Committee now includes faculty experienced in all teaching and learning modalities and this committee reviews all existing courses within the targeted discipline regardless of platform. All proposed courses come to Deans and input from both divisions is considered in the process. Academic programs has begun incorporating NCSSM Online courses in articulation agreements.

While the potential for building capacity, expanding offerings, designing flexible and dynamic programming and better serving all students through a range of instructional technologies has yet to be fully realized, there has been some promising activity in this area. Through intentional collaboration and extensive cooperation, DEEP and Humanities have developed the Global Understanding program, transforming a classroom into a “global classroom” with full IVC and projection capability. Joint submission of the Confucius Classroom grant proposal further stimulates the growth of the Chinese language and culture program. While DEEP continues to support the development of the school’s faculty in the effective use of instructional technology as well as the creation of digital content, full collaboration requires actively engaging individuals across divisions in the planning and implementation of blended programming that not only meets the needs of all students but expands the school’s capabilities to fully engage in innovative and real-world learning regardless of time or location.
Status: Initial planning stage begun.

Strategy 3 Result 4: Unify, or ensure the interoperability, of NCSSM’s Learning Management Systems (LMS) and Student Information Systems (SIS).

Person Responsible: Melissa Thibault

SIS

2012-13: Specifications completed with information gathered from all key constituents. RFP compiled by business office personnel and reviewed by State ITS and legal, posted according to policy, no proposals received. All potential vendors contacted and two chose to present to the convened selection committee who preferred one vendor’s product but product had no proven track record in a brick-and-mortar school setting and the per-class pricing would be prohibitive for our residential program.

2013-14: Committee reconvened to review the features of the new release of Focus SIS. An older, highly customized version of Focus SIS is currently in use for the residential, online and Summer Ventures schools. The committee was pleased with the product and its potential to meet the requirements of our programs. Karl Coleman and Jennifer Betz attended the Focus Usergroup Meeting to gather more information about the product, and in collaboration with NCSSM SIS “power-users,” an implementation plan was developed that includes significant overlap and redundancy to ensure smooth transition.

2014-2015: With support from Chris Lee of ITS, DEEP’s Karl Coleman has worked on the SIS nearly full-time, engaging stakeholders to facilitate the testing and transition to the new system. Focus 6 is performing well and meets the needs for all distance education programs, serving NCSSM Online and IVC class registration, report cards, transcripts and student course requests. Focus 6 is ready to receive residential courses, student enrollment, grading, student course requests and reporting attendance. This program is set up to produce electronic student health records and create electronic reporting for clinic visits as required by the NCSSM clinic staff. APIs have been developed that tie Focus 6 with Canvas (LMS) to automate the student enrollment in Canvas classes.

In addition to standing up the new SIS, Karl Coleman has helped constituent groups to find appropriate solutions for the functions previously grafted on to the SIS that are now being moved to appropriate platforms. The accolades data-gathering and reporting process has been developed in Google forms. Advocate and Care by Simplicity are being considered for student conduct and special needs required for identified students. Student Life is considering the Residence module from Simplicity to automate student room assignments, collect damage and room deposits fees using credit card and room check-in and check-out. This module will connect to the school’s business office to automate the collection and reporting of the fees. Finally, the admissions process, also not a native component of the SIS, requires an alternative solution. While the College Foundation of North Carolina allows for the collection of applicant’s demographic data and transcripts, another product or process is required to manage the teacher and counselor recommendations, communicate application and applicant status and to accommodate the reading, scoring and selection process. The NCSSM Admissions department has added a database programmer to their staff to manage the data and communications for the residential and online programs, but has been unable to support the admissions process for the other NCSSM programs Summer Ventures in Science and Math, Step Up to STEM and Accelerator. A comprehensive solution or product remains outstanding.

Other outstanding issues for the Residential School:

- Unique reports the registrar requires are scheduled to be created in Focus 6.
An outside special student course requests program must be developed as the Focus 6 student course requests module does not function according to the registrar’s preferences.

Special transcript requirements are not useful to any other school so exceed the vendor's willingness to customize the program. Unless these requirements are changed, a special program will need to be created outside of Focus 6 to generate transcripts.

LMS

2013-14: A review of specifications necessary to meet the demonstrated use of a learning management system was conducted. Faculty in both academic programs and distance education have had opportunities to attend informational i-vis sessions, to provide feedback in interest group meetings and to participate in pilot efforts. Field was narrowed to a few promising products and two of those products were piloted by Distance Education faculty in spring semester 2014. Additionally, North Carolina’s Education Cloud Services is issuing an RFP for LMS services in March 2014; advantages, including favorable pricing may result.

2014-2015: Canvas LMS was chosen after extensive research and testing and Rob Caldwell, DEEP’s instructional designer, has led the effort to convert content and train teachers. Two initial training sessions were provided in collaboration with the vendor, Instructure. Five more faculty training iVis sessions have been held since initial launch, with three additional planned for this school year. An online teacher training course was created in Canvas, as well as a student orientation course. Basic Canvas course templates were created with initial NCSSM branding.

Full SIS integration is still in progress. Currently, students enrolled in courses in Focus can be automatically added to courses in Canvas through the Canvas API. We are currently utilizing the API to automatically add IVC student to their courses in Canvas once their facilitators add them to Focus.

Although teachers from both distance education and the residential program are already taking advantage of the new LMS, during the first year the primary focus is on migration of Online and IVC courses as the contract for distance education’s current platform expires in June. Provided distance education courses have been moved by summer 2015, the instructional and design staff in Creative Services will then be available to support the movement of content created by faculty in the residential program from Moodle to Canvas. There are currently 21 IVC courses, 29 Online courses, 45 Residential courses, and 18 Special Courses being taught or developed in Canvas. At this time, 40 courses are actively being taught by 23 teachers, with 718 students enrolled in Canvas.

Progress assessment: Continued migration of Brainhoney courses needed, with added emphasis on Moodle course migration planned. Training will continue. SIS integration has been partially carried out, with more full implementation planned. Status: SIS conversion completed in distance education, slated for completion for residential before 2015-2016 school year. LMS conversion partially completed for distance education and conversion to new LMS for residential will phase in over 2015-2016 school year.

Strategy 3 Result 5: Faculty will create lessons on the web and for use in virtual/residential classes.
Persons Responsible: Steve Warshaw and Melissa Thibault

2013-14 New digital content was developed as a part of the Race to the Top NCDPI subcontract for fully-integrated STEM curriculum in Career and Technical Education clusters. Content was delivered to NCDPI and the NC Community Colleges is adding this content to the NC Learning Object Repository (NCLOR). After investing hundreds of hours of time in planning and training of DEEP and Library staff, older digital content created for online courses in the late 90s and 00s is being moved by Pearson from the self-hosted STEM at NCSSM website to NCLOR. This and any other
content from the public schools and community colleges will be accessible by NCSSM teachers for both residential and distance classes.

2014-2015: Beyond the establishment of a system for the support of content development by Creative Services (a collaborative supported by resources from DEEP, Communications and ITS), there has been no systematic effort to create content or lessons to be shared on the web. As we develop online courses some course content for revised or new distance learning titles is shared by our Creative Services team on YouTube, Flickr or in NCLOR as appropriate. Creative Services and DEEP’s Crystal Woods are also creating new digital enrichment materials for elementary and middle school classrooms. Finally, DEEP’s Rob Caldwell has been publishing NCSSM content in a variety of online platforms (OER Commons, Better Lesson, Gooru) and has been granted a “pilot” access to Canvas Commons, the built-in Learning Object Repository in the Canvas LMS. Individual efforts, such as the redesign of the online AP Calculus AB/BC course, will yield digital assets; however, the type and quantity will vary dramatically without systemic efforts.

Status: Not yet begun. While DEEP continues to work to find ways to curate and disseminate legacy content created as a by-product of distance education work, few resources and no systems have been put in place to support and coordinate faculty development of content or faculty serving as subject matter experts.
Strategy 3; Result 2 – Persons Responsible: Steve Warshaw/Melissa Thibault

Academic Programs and DEEP will have shared responsibilities for supervision of NCSSM faculty with DEEP responsibilities. *(In progress, complete by July 2016 or sooner)*

Summary of Implementation Efforts: 2012-2015

While some work remains to be done to coordinate functions with individual Departments, the following objectives have generally been achieved. The remaining work will be completed by July 2016.

- Both Divisions are represented on all faculty interview committees either as committee members or in an advisory capacity.
- They are fairly integrated on summer and additional employment of shared faculty.
- Although this varies somewhat, faculty with joint appointments in DEEP and Academic Programs regularly attend Academic Programs Department meetings. All but 2 DEEP faculty work in both DEEP and Academic Programs. Connections need to be established for those two.
- DEEP and AP Deans work together on observations, teaching assignments, cancelling under-enrolled classes and improvement plans for “shared” faculty.
- There is input from AP Discipline Coordinators and DEEP content specialists to discipline reports.

Strategy 3; Result 3 – Person Responsible: Steve Warshaw and Melissa Thibault

Academic Programs will be responsible for the content of all NCSSM courses and will work collaboratively with DEEP to develop curriculum and instructional technology, and to determine the best delivery of the content for both residential and virtual programs. *(Completed July 2015.)*

Summary of Implementation Efforts: 2012-2015

- CRC, chaired by the Vice Chancellor for Academic Programs, reviews existing courses. The AP Deans ensure that there is DEEP representation on CRC-related review committees in the summer. CRC review includes NCSSM Online and IVC courses as appropriate.
- All proposed courses come to Deans meeting, also chaired by the Vice Chancellor for Academic Programs. The New Course Proposal Form requires that consideration be given to input from both divisions.
- Numbering of courses is coordinated through the Registrar.
- There will be additional collaboration on curriculum through the adoption of a new learning management system (Canvas).
- DEEP and Humanities have developed the Global Understanding program and are continuing to expand it. Included is cooperation on transforming a classroom into a “global classroom” with full IVC and projection capability. There could be more GU courses.
- DEEP and Humanities were awarded a $30,000 grant and status as a “Confucius Classroom,” to continue growing the Chinese language and culture program.
- DEEP utilizes input from prospective students and parents via Admissions Representatives on possible new courses.
- Open House days are an additional time to get input on possible DEEP courses, and we will put that in place.
• Race to the Top–funded curriculum development for NC STEM schools was coordinated by DEEP and involved substantial collaboration with and participation by Academic Programs faculty and Deans.
• Collaboration on incorporating NCSSM Online courses in articulation agreements.
• Collaboration on developing and presenting curriculum for summer programs and courses.
• Two online Engineering courses will be introduced in 2015-16.
Strategy 3; Result 5 – Person Responsible: Melissa Thibault and Steve Warshaw.

Faculty will create lessons on the web and for use in virtual and residential classes.

Summary of Implementation Efforts: 2014-2015 (Revise re NCLOR)

- We are creating new digital content for flipped residential classrooms. There was originally an intention for it to be incorporated into the NC Learning Object Repository (NCLOR), but that vehicle has not been an effective vehicle for deploying content. YouTube and Flicker have been the most effective.
- There is a digital catalogue of what is presently available.
- Summer curriculum development funding will be provided for our substantial store of digital learning materials to be organized and loaded for access in teaching both residential and distance classes. Subject matter experts on the faculty need to be identified to review the content of already existing content.
Strategic Plan Implementation Update

June, 2015

Strategy 4

Results 1-4
<table>
<thead>
<tr>
<th>Status Categories</th>
<th>Year</th>
<th>Strategy</th>
<th>Results</th>
</tr>
</thead>
</table>
| Complete          | 2014-2015 | Increase the real world opportunities for students and faculty | %
| Partially Complete| 2014-2015 | Build leadership, communication, and organizational skills of students | %
| Underway/Pending   | 2014-2015 | Increase focus on distinctive real world opportunities in our courses, Mini-Term, and work service | %
| Not Yet Underway/Pending | 2014-2015 | Increase the capacity of the Research Program, Mentorship Program, and summer internships and research opportunities | %
| Assigned to        | Status | Increase the capacity within our faculty, the community, our alumni, and professional partnerships to provide their learning | %

**Note:** The views below reflect the strategies and results in the NCSM Strategic Plan and their implementation status. You can click on the colored box for the annual progress report for each result that is complete or underway.
Strategy 4; Result 1 - Person Responsible: Steve Warshaw
Modify and increase the capacity of the Research Program, Mentorship Program and summer internships and research opportunities to better meet student demand. (Complete July 2015)

Measure(s):
- Hire a Research and Mentorship Coordinator
- Define, describe and/or list research projects.
- Compile:
  o number of programs that offer these opportunities.
  o number of students enrolled in these programs.
  o % of students completing a research project while at NCSSM.

Summary of Implementation Efforts: 2012-15
- Work on implementation of Strategy 4; Result 1 began in earnest with the establishment of a new full-time position of Research and Mentorship Coordinator, which was filled in September 2012. In addition to revamping the curriculum of our residential Mentorship courses, she took an additional 10 juniors into the program to prepare for our traditional two trimester, two day per week, off campus Mentorship opportunity--now for a total of 80 seniors--in the fall of 2014-15.
- With the aid of the NCSSM Alumni Board and others, she also developed an innovative plan to expand research opportunities into the summer, to include NCSSM Online, as well as residential students. Approximately half of the 30 students involved in the comprehensive Summer Research Internship program in 2013 were mentored by our highly qualified alums in the Triangle area and across the state. These were in addition to the 46 students who stayed on campus or worked with external mentors as part of their participation in summer research placements coordinated by the Science Department.
- The Summer Research Internship Program further expanded in 2014 with an increase in the multidisciplinary portion of the program from 30 to 56 students.
- Opportunities were expanded further by hiring a second faculty member with part-time responsibilities in Research and Mentorship in 2014-15. The number of students participating in Mentorship increased from 65 in 2012-13 to 80 in 2014-15.
- Expansion of research opportunities included rejuvenating the Research Experience in Science (REX) courses. These courses were made more attractive to students by incorporating them into the respective science or engineering disciplines and assigning discipline-level course numbers. In addition, in Science, the REX courses are now allowed to count towards graduation credits for lab science. In Fall 2014, efforts were made to incorporate features of the 400-level research courses, such as interaction with university-level researchers, public presentations, and participation in science competitions. Course enrollment in 2014-2015 was increased over the previous year.
- The revised 300-level REX Humanities course has attracted 15-20 students per term, and there are indications that this demand will grow. The 400-level Research in the Humanities course will be offered for the first time in fall of 2015. The Humanities Department is working to expand the number of sections of REX Humanities and Research in the Humanities without additional staffing.
- A Research in Engineering course has been created and is being offered.
- Research faculty at NCSSM worked together to improve students’ awareness and access to research by broadening the scope of the Junior Meeting introduction to research, implementing
a Research Fair for students to talk directly with instructors and students in each of our research programs and initiating the development of a NCSSM research web site.

- The pathways to research and mentorship opportunities were revised and described in a graphic, shown below (including the proposal for a new research program called Independent Research Experience which would aim to increase numbers of students via an open-access non-competitive research program):
The following table shows the numbers of students participating in various Research and Mentorship opportunities in 2012-2015. The Meredith College program is funded by a 2-year grant that supports NCSSM students in doing field research with Meredith faculty. The NCSSM Research Internship provides opportunities in the Triangle for students, most of whom are housed on the NCSSM campus. Also included are a number of students (13 in 2014) who worked in their home communities with local Mentors. The school-year Mentorship program places students in Triangle research labs and institutions two afternoons per week. The numbers of participating students are shown below:

<table>
<thead>
<tr>
<th>Date</th>
<th>Summer Programs</th>
<th>School Year Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Meredith College Research</td>
<td>NCSSM Research Internship</td>
</tr>
<tr>
<td>2013</td>
<td>6</td>
<td>83 of 129 applicants</td>
</tr>
<tr>
<td>2014</td>
<td>9</td>
<td>87 of 138 applicants</td>
</tr>
<tr>
<td>2015</td>
<td>8</td>
<td>75 of 133 applicants (the 75 includes 8 students who did not apply for the Mentorship program but were incorporated)</td>
</tr>
</tbody>
</table>
Strategy 4: Result 2 - Person Responsible: Steve Warshaw
Increase focus on authentic, real-world opportunities in our courses, Mini-Term and work service.  
(Complete by July 2016)
Measure(s):
- Define, describe and/or list real-world opportunities.
- % of students completing a real-world opportunity while at NCSSM.

Summary of Implementation Efforts: 2012-2015

Work on implementation of Strategy 4; Results 1 & 2 began in earnest with the establishment of a new full-time position of Research and Mentorship Coordinator, which was filled by the hiring of full-time faculty member in September 2012. In addition to revamping the curriculum of our residential Mentorship courses, she took an additional 10 juniors into the program to prepare for our traditional two trimester, two day per week, off campus Mentorship opportunity--now for a total of 80 seniors--in the fall of 2014-15.

With the aid of the NCSSM Alumni Board and others, the Research and Mentorship Coordinator also developed an innovative plan to expand Mentorship into the summer, to include NCSSM Online as well as residential students. Approximately half of the 30 students involved in the comprehensive Summer Mentorship program in 2013 were mentored by our highly qualified alums in the Triangle area and across the state. These were in addition to the 46 students who stayed on campus as part of their participation in summer research placements coordinated by the Science Department.

Expansion of research opportunities needs include rejuvenating the Research Experience in Science (REX) courses. These need to be more attractive to students. They should include as many as possible of the features that make the RSci courses attractive, such as interaction with university-level researchers, public presentations, and participation in science competitions.

The Academic Deans reached consensus on a series of definitions for Research and related activities--including mentorship, internship, and real world experience--as specified by the required measures for Strategy 4.

Definitions for Research and Related Activities at NCSSM

Mentorship

A three trimester course (for credit) offered to NCSSM students who apply and are accepted into this research program. Students are expected to apply concepts and skills learned in the classroom in order to be an active participant on a portion of an ongoing research project or to develop a research project of their own under the guidance and instruction of the mentor. Acquired skills and knowledge are assessed through written and oral communication (research paper and power point presentation at the Spring Research Symposium).

- Preparatory trimester is required (IE 308-Explorations)
- Students are expected to apply concepts and skills learned in the classroom in order to be an active participant on a portion of an ongoing research project or to develop a
research project of their own under the guidance and instruction of the mentor. Shadowing is excluded
• Role of the mentor includes a developmental component
• Acquired skills and knowledge are assessed through written and oral communication (research paper and power point presentation at the Spring Research Symposium)
• Course credit will be given
• Transportation is provided by NCSSM
• Stipend/pay is not permitted for students
• Students may receive accommodations/subsistence

Internship

A 3-6 week summer opportunity (not for credit) offered to NCSSM students who apply and are accepted by the faculty sponsor and mentor. Students are expected to apply concepts and skills learned in the classroom in order to be an active participant on an independent project or an individual part of a larger project. Acquired skills and knowledge are assessed through written and/or oral communication (e.g., poster, paper, report, PowerPoint, portfolio, business plan, exhibit)

• Preparatory requirement (under development, here are a few ideas: acquiring and completing reading from the mentor to obtain background knowledge for the experience, one day of training prior to traveling to mentor, a special study option for a preparatory seminar)
• Students are expected to apply concepts and skills learned in the classroom in order to be an active participant on an independent project or an individual part of a larger project
• May include shadowing, does not have to include research
• Role of the mentor may be more supervisor than mentor
• Acquired skills and knowledge are assessed through written and/or oral communication (e.g., poster, paper, report, PowerPoint, portfolio, business plan, exhibit)
• Course credit will not be given
• Transportation is not guaranteed
• Students may be paid
• Students may receive accommodations/subsistence

Research

An in-depth project that poses and addresses questions or solves a problem by collecting, analyzing, and synthesizing quantitative and/or qualitative data. The process includes evaluating and interpreting previous research as well the data collected by the researcher. Ultimately the research establishes new knowledge and understanding which can lead to new conclusions, ideas, solutions, or tools in the field of study.
Real World Experience

• **Audience.** The opportunity has an intended audience/impact outside of the classroom and teacher, and an element of accountability (consequences/risks that are not based exclusively on grades).

• **Authentic data and information.** The opportunity uses real data and information to inform decision making and/or problem solving. Examples of real data and information could be: primary source documents; data gathered through direct observation of actual (not simulated) conditions; data sets used by researchers and organizations studying similar problems; or the students' own attitudes, thoughts and feelings.

• **Performance/Application.** Real-world learning is often considered "learning by doing." Students in real-world learning opportunities should not be passive recipients of knowledge but active participants in its construction. Activities might include: creation, direct or remote operation of instrumentation, synthesis of different ideas, innovation through discovery, doing things on their own initiative, collaboration in teams, practice, taking ownership and responsibility for their ideas, testing assumptions, taking chances, responding to new information, or problem-solving.

• **Metacognition.** As students learn by doing, they reflect on the conditions under which they have learned, analyze their performance, and draw conclusions about the causes and effects of their performance.

Based on those definitions, a survey is being developed to eventually generate a comprehensive list of students involved in courses or other activities that qualified as actual research and/or an authentic real world experience. These will include these student activities:

Courses: examples are Research courses. More work is needed to identify more examples.

Mini-Term

Work Service and Service Learning: examples are most or all of the Summer Service Learning placements plus such Work Service roles as Admissions Ambassadors, Development Attache's, Library Liaisons and Sustainability Project Leaders.

Others: Clubs and competitions such as NSBE and Social Entrepreneurship

We will continue to emphasize the important student learning accomplished through opportunities for research and real world activities across our school programs. Additional steps toward this end in 2014-15 included:

• a second section of RChem, opened in Winter 2014

• a pre- and post- survey of students with research projects, including students in year-long research courses, 1 trimester research courses, and discipline course that contained a research project

• the CURE survey, originated from University of Iowa, administered as a survey monkey link

Data on student participation will continue to be collected as a measure of success.

We will encourage faculty and staff--as well as students--to develop creative means (whether in courses, Mini-Term, or community service) through various formats (in person or at a distance) to engage the entire NCSSSM community--and students across North Carolina--in this innovative effort.
NCSSM Strategic Plan Implementation Annual Update

Strategy 4, Result 3: Expand academic and service opportunities (summer and school year to build leadership, planning, communication, and organizational skills of students

Person Responsible: Terry Lynch

Summary of Implementation Efforts in 2014-2015: In-Progress

- Continued expansion of service and leadership opportunities for NCSSM students and staff in the summer and throughout the academic year. Signature academic year events include MLK Jr. Day Volunteer Activities, NCSSM Food Drive, and Red Cross Blood Drives.
- Creating of Service Learning Board consisting of 10-12 NCSSM students who initiate and run projects on campus (ex: Box Top Collection, Education for EK Powe, Save the Children’s Literacy Boost).
- Improved online data collection process to allow for students and supervisors to send, receive and track data more efficiently.

Continued Implementation Efforts in 2015-2016:

- Begin assessment efforts for students participating in service learning opportunities to assess leadership, planning, communication, and skill development of NCSSM students participating in service learning.
Strategy 4; Result 4- Person Responsible: Steve Warshaw (also IA?)

Facilitate interaction between the school and families, alumni, corporations, government, nonprofits and universities to increase the real-world opportunities for students. (In progress, complete by July 2016.)


- We defined real-world opportunities and began surveying the faculty to compile the number, kinds and characteristics of opportunities presently utilized by students.
- We expanded and continue to expand the Mentorship/Research/Internship Program to include more residential students and include online students working in the Triangle or their home communities.
- We have expanded opportunities through the Entrepreneurship courses, Bowman-Brockman awards, UNC Social Entrepreneurship Competition, Global Understanding courses, et al. In particular, we have greatly expanded the number of students receiving Bowman Brockman awards.
- TEDx and Lean In provide students with such activities and opportunities to seek relationships for Mentorships.
- Families and alumni could be targeted to help sponsor competitions. More work needs to be done including more collaboration with Kim Logan in Institutional Advancement.
Strategic Plan Implementation Update

June, 2015

Strategy 5

Results 1-4
<table>
<thead>
<tr>
<th>Status Categories</th>
<th>Status</th>
<th>Assigned to</th>
<th>Strategies and Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete</td>
<td></td>
<td></td>
<td>Standardize NCSM Branding</td>
</tr>
<tr>
<td>Partial Complete</td>
<td></td>
<td></td>
<td>Improve communication with all constituents of the NCSM Community such that pertinent information is available in a timely manner</td>
</tr>
<tr>
<td>Underway</td>
<td></td>
<td></td>
<td>Increase positive awareness of NCSM</td>
</tr>
<tr>
<td>Not Yet Underway/Year Beginning Indicated</td>
<td></td>
<td></td>
<td>Improve the NCSM website to enhance both internal and external communication</td>
</tr>
</tbody>
</table>

Note: The items below reflect the strategies and results in the NCSM Strategic Plan and their implementation status. You can click on the colored box for the annual progress report for each result that is complete or underway.
Strategy #5

Implementation Update
Specific Results 1, 2, 3 and 4

Year 3 Mid-Year
July 1, 2014 - June 30, 2015

July 15, 2015

Strategy #5 Summary

Our strategic work in year three focuses on implementing the new branding and improving our communications and visibility with key external constituencies. Thanks to thorough groundwork internally and with a steering committee representing our key constituencies, we moved forward with confidence that the new language and visual elements of the branding package convey the school’s value proposition and unique strengths.

As part of the branding launch -- which “went live” on April 13 -- we implemented a “facelift,” or refresh, of the ncssm.edu website that incorporating the branding visual elements and language while updating key content. Meanwhile we have hired an information architecture consultant to lead us in a full-scale website redesign, to be launched by the end of 2015.

These efforts help us reach each of the four key communications strategies: improving the website to enhance communications, increasing positive awareness of the school, improving communication with all constituents, and standardizing our branding.
Strategy #5
Specific Results

1. Improve the NCSSM website to enhance both internal and external communication.
2. Increase positive awareness of NCSSM.
3. Improve communication with all constituents of the NCSSM community such that pertinent information is available in a timely manner.

Strategy #5
Specific Results Slated for Year 3

1. Improve the NCSSM website to enhance both internal and external communication.
2. Increase positive awareness of NCSSM.
3. Improve communication with all constituents of the NCSSM community such that pertinent information is available in a timely manner.
Strategy #5
Specific Result #1

Improve the NCSSM website to enhance both internal and external communication.

Assigned to: Brock Winslow, Lisa Watts, Will Mack

Performance metric: As stated in the result.

Status report: Interim refresh launched in April. Will Mack, webmaster, and Jeff Mahoney, multimedia designer, led the development of a website facelift that incorporates key elements of our branding initiative — new logo and visual identity, color palette, and streamlined messaging. The website launched April 13 with new/revised content for a dozen key pages.

In May we began working with consultants on the research phase of a website redesign, scheduled to launch in winter 2015.

Website “refresh”
Strategy #5
Specific Result #2

Increase positive awareness of NCSSM.
Assigned to: Brock Winslow, Lisa Watts

Performance metric: As stated in the result

Status report: With the branding initiative and the website refresh launched, we are focusing on increasing our coordination with other divisions and departments to update and share stories. We are also working to fostering positive engagement internally with increased communications to employees, and with parents and families through a newly launched Family Guidebook.

Summary of Implementation: The branding package and website refresh launched in April. We have doubled the posts of news and feature stories since then and worked to create brochures and other collateral for various departments.

Recommended next steps: With platforms in place, including the fall/winter 2016 website redesign, these efforts are ongoing and continuous.

Strategy #5
Specific Result #3

Improve communication with all NCSSM constituents such that pertinent information is available in timely manner.
Assigned to: Brock Winslow, Lisa Watts

Performance metric: As stated in the result

Status report: We updated the all-constituents e-newsletter, Catalyst, and kept it on a monthly schedule since April 2015. We launched the Daily Unicorn in May 2015 to keep employees better informed and engaged (and reduce the number of daily all-staff emails). We launched a Family Guidebook in July 2015 to create a central resource for parents and guardians. We continue to increase the quantity and quality of news and feature stories posted on our website and shared via social media.

Recommended next steps: The redesigned website should appeal more directly to constituents. On that new platform, we plan to explore special-interest blogs such as teaching innovations and alumni profiles.
Strategy #5
Specific Result #4

Standardize NCSM branding.

Assigned to: Brock Winslow, Lisa Watts

Performance metric: As stated in the result


Recommended next steps: We will continue to work with departments and divisions to ensure consistent, effective use of the branding and messaging. We are creating a series of presentations with interchangeable slides for senior staff and board members to use as needed, and we’ll be offering new collateral (car magnets and stickers, new t-shirts) to continue to increase the visibility of the brand.
Strategic Plan Implementation Update

June, 2015

Strategy 6

Results 1, 2, 3, 4, 5, 8
### Strategies and Results

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase the academic preparation of students admitted to NSCCM and provide sufficient support for their success.</td>
<td>6</td>
</tr>
</tbody>
</table>

### Planning for Our Future - Building on Success

NSCCM Strategic Plan: 2012 - 2017

**Note:** The image below reflects the strategies and results in the NSCCM strategic plan and their implementation status. You can click on the colored box for the detailed process report for each result that is complete or under way.
Strategy 6, Result 1 - Person Responsible: Steve Warshaw

Create an admissions rubric that aligns with the factors correlating with success at NCSSM and that includes qualitative factors such as motivation and interest in science, technology, engineering and math. (Partially Complete)

Measure(s):
- Definition of academic success.
- Correlate score in the revised rubric and academic success for members of classes for which we have the necessary data.

Summary of Implementation Efforts – 2012-2015

The Admissions Rubric Committee (ARC) developed a revised rubric, to achieve the following goals set forth in the strategic plan:

- Placing greater scoring weight behind demonstrated interest in science/math, and
- Increasing alignment with factors that predict academic success, which the ARC defines as junior GPA.

Admissions data from the Class of 2015 applicant pool were utilized to assess how the rubric functioned, including what its impact would have been had it been used to select this class. As a field test, re-scoring of applications from two ARC-approved congressional districts took place in June. Representatives from Institutional Research conducted all calculations in order to approximate how the junior class might change under the new rubric. Changes include rating of GPA by disaggregating applicant GPA’s into STEM and non-STEM categories. Funding was provided to have faculty and staff on the ARC complete their revised rubric review.

In 2013-14 the ARC developed a revised rubric, to achieve the following goals set forth in the strategic plan:

- Placing greater scoring weight behind demonstrated interest in science/math, and
- Correlation of score in the revised rubric and academic success for members of classes for which we have the necessary data.
- Increasing alignment with factors that predict academic success, which the ARC defines in terms of junior GPA.

Other changes in rubric?
Results for Class ’15???

Strategy 6; Result 2 – Person Responsible: Steve Warshaw

Improve the Advising Program by increasing interaction between advisors and advisees, and improving the quality by implementing an Advisor training and evaluation program. (Partially Complete)


- A pilot project was designed during summer 2014 and implemented beginning with Orientation in August. Advisors met monthly for training and designing the agendas for monthly meetings with advisees. They created a set of Goals for the Advising Program and lists of Roles/Responsibilities for advisors and advisees. They also established that
potential new advisors would observe an experienced advisor for one year and then be mentored for their first year as an advisor.

- A range of students including those in groups who are more likely to need additional support to be successful were included in the project.
- The evaluation program has not been defined in detail, but will include attitudinal surveys and data on such items as grades, class attendance, attendance and disciplinary records, et al. Results will be compared to those for students in advisee groups that are not utilizing the new approach.

Also, additional Science Faculty will be available to give advice on science courses during Welcome Day. With some training, they can give advice on the program in general.

Strategy 6; Result 3 – Person Responsible – Melissa Thibault/Steve Warshaw

Train faculty, staff, alumni and students to offer recruitment activities that include academic workshops for potential applicants in their home communities each year.

This Result Statement is being reviewed with the possibility that it will be recommended for deletion from the Strategic Plan.

Strategy 6; Result 4 - Person Responsible: Steve Warshaw

Review registration and scheduling practices to increase students’ chances for academic success. (Partially Complete)


- Advisor Pilot Project changes to the advising program will help here, including earlier meetings with advisors to help new students with scheduling.
- The Deans are reviewing the course registration process and recommending changes for implementation in registration for the 2015-16 school year.
- Additional consideration will be given to features such as increasing the use of placement testing online.
- Use of World Language intake forms is helping.

Strategy 6; Result 8 – Person Responsible: Steve Warshaw

Provide student information to faculty and staff and enhance their ability to meet student needs. (Complete)


- Continue alert sessions to brief faculty and appropriate staff before Trimester 1 and first three days of Trimesters 2 and 3 on individual student learning issues, disabilities, etc.
- Schedule earlier contact with advisees in Advisor Pilot Project including providing class schedules to Advisors earlier.
- Clarify the availability by phone of protected information for classes, Mimi-Term, academic competitions, etc.
Strategic Plan Implementation Update

June, 2015

Strategy 7

Results 1-8
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**Strategies and Results**

- Create an environment that simulates the creativity, innovation, and excellence of our faculty and staff.
- Annual progress report for each priority is complete or underway.
- The status below reflects the strategies and results in the NCCSM Strategic Plan and their implementation status. You can click on the colored box for the

**Planning for Our Future - Building on Success**

NCCSM Strategic Plan: 2012 - 2017
Strategy 7; Result 1 – Person Responsible: Steve Warshaw

NCSSM curriculum standards (suggest changing to “expectations of faculty” or “climate”) will encourage the freedom to incorporate thoughtful innovation, careful risk-taking, reflective practices and the promotion of original ideas.  (Complete)

Summary of Implementation Efforts: 2012-2015

- All expectations of NCSSM curriculum development support accomplishment of the learning outcomes in the Student Profile and departmental goals and learning outcomes. Curriculum standards are reflected in the NCSSM Student Profile learning outcomes, with which departmental and course goals and learning outcomes are articulated.
- The process for approving new courses includes consideration of how the course goals align with the components of the Student Profile and departmental goal and learning outcomes. The CRC review of existing curriculum does this as well through actions by both the designated faculty and the CRC.
- Mini-Term, Special Study Options, I-Viz, I-Week, Departmental Professional development and summer programs provide opportunities for innovative curriculum ideas and development.
- We are gathering valuable information about how faculty perceive these opportunities through the Real World Opportunities Survey in spring 2014 and the Faculty Satisfaction Survey in spring 15.

Strategy 7; Result 8 – Person Responsible: Steve Warshaw

NCSSM will have a professional development program that accounts for individual faculty and staff needs including internal and external communication. (Partially complete with completion pending implementation of recommendations from 2014-15 review of faculty evaluation and professional development procedures)


- I-Viz has enhanced the opportunities for faculty to receive professional development and provide it to their colleagues. It has served to provide time for innovative thinking by faculty. We need to ensure that non-teaching staff know they are welcome and clear their attendance with their supervisor.
- Flex-time provides time for faculty to learn about and develop innovative curriculum ideas. Some new faculty haven’t known how this works, so we need to be sure they are well-oriented.
- I-Week was implemented in 2013-14 to provide additional time for innovative activities and for developing innovative ideas. After the survey results for 2013-14 the I-Week Committee implemented changes to the I-Week schedule in 2014-15, reducing the number of I-Weeks from three to two and excluding due dates for major assignments and tests. 2014-15 surveys will be similarly administered and reviewed.
- Mini-Term, Special Study Options and summer programs, which were already integral parts of the school’s research and internship program, also provide opportunities to offer innovative learning opportunities for students and refine curriculum ideas.
- A working group is studying the Faculty Evaluation Procedure. Consideration is being given to incorporating an individualized professional development plan rather just job targets in the annual faculty performance appraisal process and other changes to focus more on professional development.
- We will continue measures such as incidentally forwarding professional development opportunities to, and writing recommendations for, each other.
NCSSM Strategic Plan Implementation Annual Update

Strategy 7; Result 2: Person Responsible: Todd Roberts
Innovation and creativity will be factors considered in hiring and evaluation practices.

Summary of Implementation Efforts – 2014-2015
As we revise the faculty evaluation process we are incorporating ways to better account for faculty participation in innovative and creative activities outside of the classroom. We are also placing emphasis in the hiring process on hiring candidates who have demonstrated innovation teaching practices and strategies.

Continued Implementation Efforts - 2015-2016
We have a need for better and more consistent training of hiring managers and committees for a variety of reasons, one of which is so that they are better prepared to recruit potential faculty and staff members who are talented and can bring innovative ideas to the school.

Strategy 7; Result 3: Person Responsible: Todd Roberts
Our school calendar and/or daily/weekly schedule will allocate specific times for creative and innovative pursuits (See Strategy 3; Result 1 report)

Strategy 7; Result 4: Person Responsible: Todd Roberts
The work environment at NCSSM will include collegiality, collaboration, recognition of employees' contributions, and support for balanced lives of employees.

Summary of Implementation Efforts – 2014-2015
Over the past three years there has been a concerted effort to allow for more flexibility in the schedules of faculty and staff to improve work-life balance, as well as to allow more opportunity for faculty and staff to engage in activities outside of the traditional workday. There is now more flexibility in the hours people work to recognize the time people spend working with students outside the normal workday. Faculty and staff also now have flexibility to work over breaks such as winter and spring break, so that they can take vacation that better aligns with their personal needs.

In order to promote more collegiality among employees we have planned multiple all staff social events each of the past three years. These events that are held periodically throughout the year allow faculty and staff to spend time together away from work in a relaxed and fun atmosphere. The goal is to have faculty and staff get to know each other better so that they are more comfortable collaborating at work.

This year we began having meetings each trimester between the leadership of the faculty, staff, administration, and students. The goal of these meetings was to create greater collaboration between the various groups on campus. The meetings allowed everyone to recognize common opportunities to work together, as well as how different members of our community may perceive certain issues on campus. These meetings led to all groups signing a shared governance agreement. Also, we pursued and were granted new legislative language that allows us to add representatives from the Student Government, Faculty Senate, and Staff Council to serve as ex officio members of our Board of Trustees.
Continued Implementation Efforts - 2015-2016
One of the continued efforts for this result in 2015-2016 will be to try and find more tangible ways of recognizing employee contributions for outstanding work and for going above and beyond what is expected of them. There have been preliminary talks with both faculty and staff leaders about possible ways to do this. Most likely at least some of these ways will have an impact on our budget so we will need to factor this in as we plan our budget.

Strategy 7; Result 5: Person Responsible: Todd Roberts
Administration will clearly communicate expectations and protocols, value and honor innovation and creativity, be transparent in decision-making, and be responsive to faculty and staff. (Partially Complete)

Summary of Implementation Efforts – 2012-2013
Work on Strategy 7; Result 5 has included efforts to provide increased and more frequent communication to faculty and staff through a monthly enewsletter, Chancellor’s Update, about things happening on campus and those things happening off campus that impact the school. The monthly update began in the spring, 2013 and includes information from each department. The update is in the form of a blog so that the information posted in the update remains so that people can reference previous information easily. The goal of the newsletter was to keep people informed on important information to provide greater transparency as well as to make sure people are aware of important information they may need.

During the 2014-2015 school year, under the leadership of Communications Director Lisa Watts, we began a daily employee focused communication, The Daily Unicorn that provides a range of information that employees need in a fun daily digest.

Another area that we have been working on is improving the budget process to ensure that each department head has an accurate budget that they can more actively manage. We began the process of developing more, user-friendly, department budgets in the spring, 2013. This process is ongoing, but for the 2014-2015 school year we had a much more user-friendly budget for department heads. As we move into the 2015-2016 school year we will have a very clear budget that allows department heads to more effectively manage their budgets. There has also been a significant effort among the staff of the business office, the Foundation, and SCSSI to work collaboratively on budget planning. This has allowed us to streamline the budget process and make it less complicated to manage for people in each of these offices, as well as faculty and staff.

In an effort to be responsive to faculty and staff we implemented guidelines to allow for flexible scheduling for faculty. These guidelines allow for greater recognition of diverse faculty schedules and also allow for consideration of the many activities that faculty are involved in with students outside of the normal academic day. We have also allowed for greater flexibility for faculty and staff work during time when students are on vacation. This allows for faculty and staff to hopefully better balance their work and life outside of school.

Also, in order to try and address inequities in SPA salaries and job classifications we undertook a job study for all SPA positions. During this job study each supervisor worked
with SPA employees in his/her department to review the job classifications and then to submit new classification requests for positions if warranted. The job study began in fall, 2012 and concluded in May, 2013. 61 positions were submitted to the Office of State Personnel for reclassification and 46 were approved. In addition, 24 SPA positions received salary increases based on inequities.

Finally, we have incorporated flexible time each trimester into the daily schedule during what we have called “Innovation Week”. This is time that allows for faculty and students to work on special projects, attend special events, or to collaborate with others. We implemented Innovation Week in 2013 and we continue to modify how we implement it to try and maximize the time for innovation.

In 2013-14 we began a process to review and revise the faculty evaluation process. One of the goals of the revision is to have a process that better account for the work faculty does outside of the classroom. Another goal is for the evaluation process to place more emphasis on professional development for faculty based on both institutional and individual needs. The revision process should be concluded during the 2015-2016 year.

**Continued Implementation Efforts - 2015-2016**

A goal for the coming year is to develop a user-friendly and transparent guide to NCSSM’s budget, which includes where our revenues and resources come from and they are then allocated and spent. Staff in the business office and in the Foundation and SCSSI will work collaboratively to create this guide.

We will conclude the revision of the faculty evaluation process.
Strategy 7; Result 6: NCSSM financial procedures for faculty and staff projects will be streamlined, flexible, clear, and responsive to instructional needs. (Partially Complete)

Person Responsible: Robert Allen

Summary of Implementation Efforts in 2012-2013

Work began on Strategy 7; Result 6 in February 2012. The business office made the appropriate contacts at the state level in order to get the process started. One of the first steps in the process was to request an audit from the Division of Purchase and Contract of the State of North Carolina. Also included in this process was an on-site compliance review from the Department of Administration (DOA) which started in June 2012. In August 2012 we received our letter of approval for our P-Card program from the DOA.

The Business Office staff took a number of preliminary steps in preparing for the implementation of the P-Card program. The first step was training the staff members that would implement and monitor the P-Card program. These steps included attending conferences, attending state P-Card training, as well as site visits to other agencies in the state that currently had P-Card programs.

The next step included submitting our application to Bank of America (BOA) which was the financial institution selected as the vendor for our program. The staff worked with BOA from October 2012 through February 2013 to set up the program.

The next step was developing procedures and preparing a user manual for the end users. After developing our initial draft of the procedures, we compared it with other agencies P-Card procedures both in-state and out-of-state, taking advantage of the current best practices.

The final step was training staff members that were approved for P-Cards. A number of training sessions were scheduled from May 2013 to July 2013. The final phase of the program goes live the week of July 22, 2013.

Summary of Implementation Efforts in 2013-2014

A taskforce was formed to evaluate the flexibility, clarity and transparency of policies and procedures for collection and disbursement of funds for students and instructional activities. The task force was made up of administrators and employees processing information for NCSSM State, NCSSM Foundation, and NCSSM Student and Constituent Support Services (SCSSI). They reviewed forms being processed to identify opportunities to consolidate multiple forms into one form in order to improve the request and expenditure process. The first forms reviewed were the Travel Approval and Travel Request forms. These forms were approved by the Chancellor and Direct Reports in July 2014 and were provided to staff and faculty. The revised forms are updated as appropriate to reflect changes in guidelines, reimbursement rates, etc. Additional policies, procedures and forms are in the process of being review, updates and made availability to staff and faculty.

Updated 3/2/15
The goal of the taskforce is to implement or modify procedures for flexible, clear and transparent collection and disbursement of funds for student and instructional activities. This will be an on-going process.

**Continued Implementation Efforts in 2014-2015**

The final remaining step of **Strategy 7; Result 6** will be focused on in Fiscal Year 2014-15.

1. Create a designated fund to support large-scale innovative and creative instructional and academic projects (curriculum development, authorship, research, etc.)
Strategy 7; Result 7: Person Responsible: Todd Roberts
Individual faculty and staff work schedules will be negotiable to allow tie for innovation.

Summary of Implementation Efforts – 2015-2016
As was mentioned for Strategy 7; Result 5, in 2013 we began allowing for greater flexibility for faculty and staff in their work schedules. Primarily this has allowed for a better work-life balance, but it has also encouraged some faculty to pursue more innovative activities. We have also begun trying to provide compensation for faculty and staff when they are pursuing activities that support the mission of the school, but may be outside their “normal” job.

What we have not yet been able to do is to create time within our schedule and calendar for faculty and staff to effectively collaborate on innovative ideas. “Innovation Week” has been an attempt to do this, but it is limited in its scope and ability to support sustained collaboration.

Continued Implementation Efforts – 2015-2016
To continue looking for ways to build in time to the calendar and schedule that both encourages and supports faculty and staff to collaborate on innovative ideas.
Strategic Plan Implementation Update

June, 2015

Strategy 8

Results 1-7
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<th>Status Categories</th>
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<tr>
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<td></td>
<td>Develop and disseminate relevant, innovative, and student-centered teaching and learning methods and materials.</td>
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<tr>
<td></td>
<td></td>
<td>Provide academic enrichment and support for K-12 students in North Carolina, particularly addressing the needs of under-prepared students and academically gifted students.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Develop, organize, and share digital resources for teaching and learning.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Prioritize and support research activities with equitable internal human, technical, and financial resources.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Establish administrative processes for coordinating and documenting outreach activities as defined by the goals.</td>
</tr>
<tr>
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<td></td>
<td>Develop and implement an NCSSM Partnership Model in order to expand our outreach activities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Define the goals, objectives, and intended outcomes for NCSSM outreach activities.</td>
</tr>
</tbody>
</table>

Note: The items below reflect the strategies and results in the NCSSM Strategic Plan and their implementation status. You can click on the colored box for the annual progress report for each result that is incomplete or under-way.
Completed Results: Year 1

**Strategy 8 Result 1: Define goals, objectives, intended outcomes for NCSSM outreach activities.**

Person Responsible: Melissa Thibault

**Summary of Implementation Efforts 2012-13**

Carole Stern and Ross White led this effort. Referencing the focus groups and research for the strategic plan, participants have focused upon content, skills and habits of mind required for students to be Career and College Ready, as well as the greatest math and science challenges facing NC schools today, including the implementation of new Common Core Math and Next Gen Science standards. Internal constituents and key NC education research leaders involved in these efforts were consulted to determine focal point for developing content and teacher professional development.

In conversation with groups of internal and external stakeholders, the following themes emerged as goals for NCSSM’s institutional outreach efforts:

- **Target under-represented populations in under-resourced areas.** NCSSM should recognize that it can have significant impact by developing partnerships with LEAs and schools that have not been the focus of large-scale efforts by other state agencies (including the Department of Public Instruction). NCSSM should evaluate demographic data and align outreach targets to that data.

- **Focus engagement on a few partnerships.** Recognizing that ongoing individual outreach efforts serve a broad population, stakeholders were emphatic that the school cannot engage deeply with too many LEAs or schools and should focus resources on strategic partnerships.

- **Leverage the expertise and excitement of faculty and staff, while giving them a chance to innovate and grow their skillsets.** While NCSSM has a been successful in areas including face-to-face professional development, curriculum development, video, and digital asset development, the school should not limit the scope of activities in partnerships to what has been done before. New activities, such as online professional development, MOOCs, and blended learning, should give faculty the opportunities to challenge themselves and enhance their skillsets—a process which will lead back to their classroom teaching.

- **Broaden systematic engagement without discouraging individual outreach efforts.** Stakeholders applauded the breadth of individual and small-team outreach efforts from NCSSM faculty and staff. With deep connections to professionals in their fields, the ongoing relationships that individual faculty and staff have developed often serve as a lifeline for the populations they affect. As NCSSM clarifies its institutional goals and allocates time and funding accordingly, it must be careful to encourage and celebrate individual accomplishments in outreach, particularly in the areas of scholarship, leadership, and community service.

- **Consolidate efforts, particularly in the summer.** Various existing outreach efforts are developed by different areas of the school. Currently, each individual effort must coordinate a variety of functions (including marketing and publicity, facilities and inventory management, supervision, and activity programming), often replicating for the short term a service already provided in another area of the school. Efforts will be more efficient and scalable with clear areas of responsibility.

- **Organize, collect, and extend the reach of digital assets.** The strategic plan goal of reaching a million students in five years requires that NCSSM make digital assets more readily searchable and provide access to those assets in multiple contexts. Engagement efforts should look to leverage and refine existing digital resources, but NCSSM should also look for ways to re-publish and disseminate those materials.

The draft proposal was presented to the Board of Trustees DEEP subcommittee for feedback in May of 2013, and is complete and ready to be presented to the Strategic Planning Committee. [See appendix 1]

**Status: Completed.**
Strategy 8 Result 2: Develop and implement an NCSSM Partnership Model in order to expand our outreach activities.

Person Responsible: Melissa Thibault

2012-2014: Melissa Thibault and Geoff Coltrane initialized this work, Ross White, Karl Coleman, and Melissa Thibault implementing. Staff and Board of Trustees subcommittee members worked to identify criteria by which to select potential partner LEAs, and Dr. Charles Coble and Dr. Tom Williams met with staff to develop a draft model. Piloting this model in a few systems is recommended for 2013-14, with an assessment of the model’s efficacy in facilitating scalable growth ongoing.

Criteria for Targeted Districts
Five key attributes identified:

1. Presence of advocate/champion
2. Rural location/limited curriculum offering
3. % of underrepresented minorities
4. Resources/staff & focus to implement
5. Broadband penetration in district homes

LEAs identified included Asheboro City, Beaufort, Burke, Chatham, Cherokee, Greene, Lenoir, Mt. Airy, Onslow, Orange, Stanley and Washington.

DRAFT Engagement Model and Process for LEA and School Partnerships

Phase I: Exploratory Phase – provides NCSSM and a prospective partner(s), the opportunity to explore each organization’s mission, vision, data and strategic needs to assess the potential value of creating a partnership to yield mutually beneficial outcomes by engaging in partnership activities. In this phase, partners would assess what they see as potential advantages to their organization by considering a potential partnership. This phase should include engagement by the key decision makers within each organization as part of assessing initial buy-in and needed support for potential collaboration.

Phase II: Possibilities Phase – based on the successful completion of Phase I and a commitment to reconvene, Phase II would be designed to engage the potential partners in identifying specific ideas of potential partnership results and strategies that would add value to both organizations in meeting particular needs of each organization. This session would help discover existing strengths and resources each partner would bring to the partnership. Key decision makers within each organization should be briefed on the potential benefits and broad goals of the partnership and anticipated resources needed to develop the initial intent of the partnership and action plan.

Phase III: Development Phase – based on the successful completion of Phase II, Phase III would build on the ideas generated in Phase II and the identification and development of a specific action plan to implement the partnership. This should follow an agreed upon process for action planning beginning with a clear statement of the purpose of the partnership and expected outcomes. The action planning process should include the appropriate people from each partner who will be involved in the partnership as it develops. The action plan should involve developing the draft goals of the partnership, key strategies, key milestones/outcome measures of success, anticipated completion dates, lead person responsible for the goal/strategies, and anticipated needed resources. The Development Phase should culminate with a joint presentation to the senior leaders (decision makers) of each organization to solicit feedback and secure sponsorship of the partnership.

Phase IV: Implementation Phase - based on the successful completion of Phase III, a communication plan should be developed to kick off the partnership and begin engaging the appropriate people from each partner in the implementation of the partnership’s action plan. This phase needs to attend to ongoing communications, periodic
milestone reviews, and problem solving on the logistics of the partnership. A program evaluation component should be developed early in this phase to assess the fidelity of the implementation of the action plan, documented adjustments, and impact/results. Formal reviews and updates should be embedded in this phase with the senior leaders from the partnering organizations. New ideas for improving, expanding, or enhancing the partnership should be captured and considered in an ongoing review of the partnership.

**Phase V: Celebration/Evaluation/Renewal Phase** – this phase completes the partnership model while also serving as the renewal phase of the partnership. Periodic celebrations should occur during Phase IV and into Phase V to help nurture organizational awareness of the partnership results and milestones achieved. Based on the program evaluation designed in Phase IV, based on the action plan developed n Phase III, a formal partnership evaluation should be completed in a timely fashion on an annual basis (at a minimum). The evaluation should be presented to the senior leaders of the partner organizations and then to the larger stakeholders of the partnership entities. Based on the performance of the partnership, and senior leaders should recommend: 1) a continuation and renewal of the partnership based on the action plan goals, 2) a revamping of the partnership goals and action plan prior to renewal, or 3) declaring that the partnership will not be renewed at this time. An annual report of the partnership should be disseminated to key stakeholders.

**Examples:**

**Burke:** Following joint participation in the many conversations among community leaders, members of the business community and state-level leadership in the legislature and Department of Public Instruction about the form and feasibility of a western campus, NCSSM and Burke County entered into a Memorandum of Understanding [MOU] in June of 2013 to articulate the agreed-upon contributions of both parties to the founding of the Burke STEAM Academy. In addition to providing direct services, NCSSM has worked with Burke County to write grants and to present at Scaling STEM. NCSSM is currently in Phase IV of the Partnership Model with Burke County Schools.

**Mt. Airy:** Following discussions with the superintendent and high school principal and site visits by Karl Coleman, Ross White and Melissa Thibault, Mt. Airy schools committed significant resources to the establishment and staffing of a two-classroom distance education suite with videoconferencing capabilities. Through our open enrollment program, the students in Mt. Airy High School were offered 9 additional honors STEM courses they would not otherwise have had available in the course catalog. NCSSM is currently in Phase III of the Partnership Model with Mt. Airy Schools.

**2014-15 Update:** Distance Education staff and faculty are maintaining contacts and engagement activities with LEAs in a shared spreadsheet for coordination, tracking and reporting purposes. DEEP has taken the partnership message to the field through presentations to curriculum and instruction leads at 5 of the 8 Regional Education Service Areas (RESAs) so far, with plans to reach all before December 2015. Letters articulating each LEAs level of engagement will be sent to superintendents in the spring of 2015 with an invitation to formalize the current level of partnership through Memorandum of Understanding. In the process of securing the LEA commitment to partnership, the value of the programs and services will be articulated.

**Status:** Partially completed.
Strategy 8 Result 3: Establish administrative processes for coordinating and documenting outreach activities as defined by the goals, objectives, and intended outcomes.

Person Responsible: Melissa Thibault

Following the NCSSM Strategic Planning Team Fall 2013 approval of the Outreach Definition and Goals [see Strategy 8 Result 1 and Appendix 1] the processes for coordinating and documenting these efforts have begun.

Outreach Documentation: The initial data source for documenting efforts is the survey implemented by Geoff Coltrane for the annual NCSSM Board of Trustees Outreach Report which includes information about how our faculty are reaching students and teachers through their work beyond their established teaching. While this is of use as we work to document our partnerships with the majority of school systems and our reach to include 1,000,000 students and 100,000 teachers, not everything is captured. Not all faculty complete this survey and for those who do, more training and support are necessary to effectively document the work. For example, faculty need to think broadly about their impact. If they are teaching teachers in AP institutes or working with a group at the national level to develop assessments or refine standards, they are engaged in work that has a substantial reach yet their reporting may be limited to those individuals with whom they had face-to-face interactions. NCSSM must work toward improved response protocol that captures the full scope and reach of activities. Additionally, an effort must be made to include the work of those individuals in the NCSSM community who are not classified as faculty. Geoff Coltrane is working to improve this report and expand it to capture efforts by UNC General Administration to define and document community engagement. He is also working to develop the metrics for the NCSSM Strategic Plan Goals, which will require additional documentation of both community engagement at the school system level and documentation of students and teachers reached.

Outreach Coordination: If the goals of the strategic plan are to be met it will be necessary to look beyond simple documentation of voluntary faculty efforts. Current outreach efforts are more opportunistic than strategic; these individual and departmental efforts are focused in areas of interest to the faculty involved, and there are no mechanisms in place to direct or even encourage these efforts to align with the Strategic Plan’s Outreach Goals and Definition or to meet expressed needs of North Carolina’s students and teachers. In order for NCSSM to meet its mandate to “improve math and science education statewide” we will need to communicate the importance and support the outreach and engagement efforts of members of the community.

Ideas for aligning and coordinating outreach:

- Systemic inclusion of measures of outreach and engagement efforts in faculty evaluation and development plans (and staff plans where appropriate)
- Systemic inclusion of measures of support for outreach and engagement in the evaluation of leadership (SAAO)
- Strategic use of of resources, both budgetary and release time, to focus exclusively on aligned initiatives

Assessment: Documentation improvements underway. Coordination planning in earliest stages.

Status: No additional progress in 2014.
Strategy 8 Result 5: Develop, organize, and share digital resources for teaching and learning.
Person Responsible: Melissa Thibault

2012-13: NCSSM web development is a function of communications. Capacity to effectively publish and promote content is limited; no additional web development is planned until the communications strategies (Strategy 5) are implemented. Issues with the current platform include usability, searchability, structural limitations to browsing, compliance with current platforms (mobile) and standards (HTML5). Creative Services planned and implemented: individuals from ITS, Distance Education and Communications to leverage skills and capacity across divisions.

Development of significant amounts of digital content funded through RTTT.

2013-14: No further progress in web development. Creative Services has made significant progress in the documentation, refinement and implementation of processes for content development. Staff are using project management software and a web-based request system to field requests for all instructional and promotional development. Platforms for dissemination of instructional content, including YouTube, Pinterest, Better Lesson and Flickr, are being utilized by the staff to determine their suitability for our content. These efforts to identify external opportunities to publish NCSSM content include continued conversations with the state leadership developing the NC Education Cloud which includes SchoolNet, Homebase, and a learning object repository, NCLOR. Challenges in digital content and online course development include ADA compliance, copy editing, and the copyright clearance processes. Staff from Creative Services and the Library are working to address these challenges. Greater issues around content and contextualization of this content are standards alignment and metadata development; staff are limited in their ability to effectively address content issues by the lack of access to subject matter experts.

Status: Partially completed. Little additional progress in 2014. Effort underway to find additional ways to disseminate content pending the development of an appropriate NCSSM web presence or identification of another solution.

Strategy 8 Result 6: Provide academic enrichment and support for K-12 students in North Carolina, particularly addressing the needs of under-represented students and academically gifted
Persons Responsible: Steve Warshaw and Melissa Thibault

2013-14: DPI/RttT funded development of STEM curriculum for NC secondary students provided the capacity to support the development of enrichment materials. Step Up to STEM and Summer Accelerator extend NCSSM curriculum resources to more students including, in the case of Step Up, students from under-represented populations. (While Summer Leadership specifically address preparation and enrichment for under-represented students, this program serves our enrolled students and is not an enrichment program for K-12.)

2014-15: Academic enrichment for elementary, middle school and/or high school students from across NC continues to be provided through the NC Student Academy of Science, Ethics and Leadership Conference, ScienceDays, DEEP staff and student-led enrichments, Eastern Regional Orchestra, TEDx and various tutoring programs.

Status: No additional progress.
Strategy 8: Result 6 – Person Responsible: Steve Warshaw/Melissa Thibault

Provide academic enrichment and support for K-12 students in North Carolina, particularly addressing the needs of under-represented students and academically gifted students. (Partially Complete)

Summary of Implementation Efforts: 2012-2015

- Curriculum development opportunities such as DPI/RtT funded development of STEM curriculum for NC secondary students.
- Summer Leadership, Summer Bridge, Step Up to STEM and Summer Accelerator allow NCSSM curriculum resources to be shared. Summer Leadership, Summer Bridge and Step Up to STEM specifically address preparation and enrichment for under-represented students. Summer Bridge added an introductory science research lesson in summer of 2014.
- Other programs that provide academic enrichment for elementary, middle school and/or high school students from across NC include the NC Student Academy of Science, Ethics and Leadership Conference, the growing collaboration with the NC Museum of Natural Sciences, ScienceDays, DEEP student-led video enrichments, Eastern Regional Orchestra, TEDx and various tutoring programs such as Emily K.
- We are reviewing the University of Maryland Baltimore County program to identify features applicable to NCSSM.
<table>
<thead>
<tr>
<th>Item</th>
<th>Function</th>
<th>Potential Uses</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shopbot - Model PRSAlpha 96-48 preferred</td>
<td>CNC machine for cutting sheet material such as wood and sheet aluminum.</td>
<td>Prototyping and building robots. Prototypes of wood, final bots of aluminum stock. Also for producing storage and event-day pit equipment.</td>
<td>$12,000 (Models from $8000 to $2500 for computer $3000 for vacuuum</td>
</tr>
<tr>
<td>Welder:</td>
<td>For welding Aluminum and Steel</td>
<td>Used for welding steel and aluminum components together</td>
<td>$1,600 (up to $3,100)</td>
</tr>
<tr>
<td>Hobart 500536 Ironman 250 AMP MIG Welder</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spot welder</td>
<td>Simple sheet metal spot welds</td>
<td>Simple metal assemblies, making bent metal structural members like closed beams (bent on box and pan brake).</td>
<td>$300</td>
</tr>
<tr>
<td>Lathe</td>
<td>Bench Top Lathe for turning round materials.</td>
<td>Typically used for making slots in shafts, threading, and precise holes in cylinders</td>
<td>$1500 (up to $500) add CNC. $1000 tooling.</td>
</tr>
<tr>
<td>CNC Mill</td>
<td>Benchtop CNC Mill. Used for doing small plastic and metal machining</td>
<td>Used for making custom parts for mounting components and prototype designs.</td>
<td>$2000 (up to $500) $1000 tooling an computer</td>
</tr>
<tr>
<td>3D Printer</td>
<td>Used for making 3D printed parts for prototyping.</td>
<td>Used for making prototypes, mounting hardware, custom enclosures and potentially to make moulds for casting components.</td>
<td>$4000+</td>
</tr>
<tr>
<td>Laser Cutter</td>
<td>Imagine a printer that cuts and engraves into plastic/glass/wood instead of putting ink onto paper.</td>
<td>Prototyping, engraving, and making custom enclosures and components. Typically ¼” or less thickness.</td>
<td>$5000 up to $150</td>
</tr>
<tr>
<td>Plasma cutter, such as PlasmaCAM</td>
<td>Cutting sheet metal</td>
<td>Metal signs, parts, artwork</td>
<td>$14,000 for mill + $3,140 plasma cu</td>
</tr>
<tr>
<td>Item</td>
<td>Purpose</td>
<td>Features</td>
<td>Price</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Box and Pan Brake, such as Grizzly G0557 Box and Pan Brake, 24-Inch</td>
<td>Bending sheet metal</td>
<td>Making boxes, c-channels, and other complex linear shapes from sheet metal.</td>
<td>$400</td>
</tr>
<tr>
<td>Hand Tools</td>
<td>Complete set of hand tools for use in the lab</td>
<td>Hand tools, wrenches, screwdrivers, taps &amp; dies, pliers, cutting, punching, ...</td>
<td>$4,000</td>
</tr>
<tr>
<td>Hand tool storage, such as HOMAK BK04011410 41-Inch SE Series 11-Drawer Roller Cabinet - Black and HOMAK BK02008410 41-Inch SE Series 8-Drawer Top Chest, Black</td>
<td>Store and organize hand tools</td>
<td></td>
<td>$1,200</td>
</tr>
<tr>
<td>Power Hand Tools</td>
<td>Drilling holes, driving fasteners, carving</td>
<td>Battery powered drills, jigsaw, circular saw, dremel</td>
<td>$1,500</td>
</tr>
<tr>
<td>Drill Press, Delta 18-900L 18-Inch Laser Drill Press</td>
<td>Drilling precise holes to a given depth</td>
<td>Holes for assembly</td>
<td>$1,200</td>
</tr>
<tr>
<td>Chop Saw, wood, such as DEWALT DW716 15 Amp 12-Inch Double-Bevel Compound Miter Saw</td>
<td>Cutting wood with compound angles.</td>
<td>Mitering for corners, straight cuts.</td>
<td>$400</td>
</tr>
<tr>
<td>Chop Saw, metal, such as DEWALT DW715 15-Amp 12-Inch Compound Miter saw</td>
<td>Cutting metal stock</td>
<td>Cutting metal parts to length</td>
<td>$300</td>
</tr>
<tr>
<td>2 roller stands, such as Trojan RS-12 Adjustable 24-Inch to 40-Inch Multi-Directional Pedestal Roller Stand with 12-Inch Roller</td>
<td>Holding metal and wood</td>
<td>Helpful when cutting long pieces</td>
<td>$200</td>
</tr>
<tr>
<td>Bench Grinder, such as Delta 23-199 8-Inch</td>
<td>Grinding and finishing metal</td>
<td>Deburring cuts, fine tuning</td>
<td>$300</td>
</tr>
<tr>
<td>Equipment Description</td>
<td>Description</td>
<td>Notes</td>
<td>Cost</td>
</tr>
<tr>
<td>-----------------------</td>
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<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>Variable Speed Grinder with Toolless Quick Change</td>
<td>Cutting straight and mild bends in wood and soft metal at right angle to surface</td>
<td>Some duplication with chop saw, but generally preferable when cut is either longer than chop saw can accommodate or some curvature is present.</td>
<td>$1,000</td>
</tr>
<tr>
<td>Band Saw, such as JET JWBS-14DXPR 14-Inch Deluxe Pro Band Saw Kit</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Belt and disc sander, such as JET J-4002 1-Inch by 42-Inch Bench Belt and Disc Sander</td>
<td>Finishing cuts, deburring, shaping wood and metal</td>
<td>Fine tuning cuts to improve assembly and final finish</td>
<td>$600</td>
</tr>
<tr>
<td>Drill bit register, such as Chicago Latrobe 150 Series High-Speed Steel Jobber Length Drill Bit Set</td>
<td>Drill bits</td>
<td>A complete selection for finding just the right hole</td>
<td>$500</td>
</tr>
<tr>
<td>Hand milling machine</td>
<td>Cutting slots, and paths</td>
<td></td>
<td>$1,000</td>
</tr>
<tr>
<td>CNC Milling Machine, such as Talon CNC 1240 Bed Mill</td>
<td>Numerically controlled milling of plastic and metals.</td>
<td>Allow milling of larger parts than bench unit.</td>
<td>$20,000</td>
</tr>
<tr>
<td>Fastener organization drawer system</td>
<td>We need a better system for organizing our fasteners (nuts and bolts).</td>
<td>Used for keeping fasteners organized.</td>
<td>$500-$1000</td>
</tr>
<tr>
<td>Safety Equipment</td>
<td>Safety glasses, eye wash station, face shields, gloves, etc...</td>
<td>Used for keeping everyone safe</td>
<td>$1,500+</td>
</tr>
<tr>
<td>Fire Cabinet</td>
<td>Cabinet for storing oils and other hazardous materials</td>
<td>Used to keep our collection of lubricants and oils safe.</td>
<td>$500</td>
</tr>
<tr>
<td>Shop lighting</td>
<td>Better lighting in the lab is needed for proper equipment usage</td>
<td>Providing light.</td>
<td>?</td>
</tr>
<tr>
<td>Item</td>
<td>Use</td>
<td>Planned Use</td>
<td>Cost</td>
</tr>
<tr>
<td>------</td>
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<td>-------------</td>
<td>------</td>
</tr>
<tr>
<td>Arbor press</td>
<td>Pressing in bearings</td>
<td>Robotics team, mechanical engineering</td>
<td>0</td>
</tr>
<tr>
<td>Soldering and electrical tools</td>
<td>Building circuits</td>
<td></td>
<td>$3,000</td>
</tr>
<tr>
<td>Vacuum system</td>
<td>Removal of sawdust</td>
<td></td>
<td>$5,000</td>
</tr>
<tr>
<td>Ventilation System</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compressed air system</td>
<td>Allow use of pneumatic tools</td>
<td></td>
<td>$5,000</td>
</tr>
<tr>
<td>Table saw, such as Grizzly G0715P Polar Bear Series Hybrid Table Saw with Riving Knife, 10-Inch</td>
<td>Ripping and cross cutting large pieces of wood, such as plywood.</td>
<td>Rough cuts prior to other machine processes, scenery, shelving/storage construction</td>
<td>$1,000</td>
</tr>
<tr>
<td>Planer (DEWALT DW734 15 Amp 12-1/2-Inch Benchtop Planer + DEWALT DW7350 Planer Stand with Integrated Mobile Base)</td>
<td>Smoothing wood surfaces</td>
<td></td>
<td>$500</td>
</tr>
<tr>
<td>Jig Saw</td>
<td>Cutting complex shapes in wood by hand</td>
<td></td>
<td>$200</td>
</tr>
<tr>
<td>Circular Saw</td>
<td></td>
<td></td>
<td>$200</td>
</tr>
<tr>
<td>Router table + bits</td>
<td></td>
<td></td>
<td>$1,000</td>
</tr>
<tr>
<td>Clamps, clamps, clamps</td>
<td>Holding pieces while working or glueing</td>
<td>Wherever wood is cut and joined</td>
<td>$1,000</td>
</tr>
<tr>
<td>Work benches</td>
<td></td>
<td></td>
<td>$3,000</td>
</tr>
<tr>
<td>General Shelving, storage,</td>
<td></td>
<td></td>
<td>$20,000</td>
</tr>
<tr>
<td>Equipment</td>
<td>Use Case</td>
<td>Department</td>
<td>Cost</td>
</tr>
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<td>---------------------------------</td>
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<td>Ripping and cross cutting large pieces of wood, such as plywood.</td>
<td>Rough cuts prior to other machine processes, scenery, shelving/storage construction</td>
<td>$1,000</td>
</tr>
<tr>
<td>Planer (DEWALT DW734 15 Amp 12-1/2-Inch Benchtop Planer + DEWALT DW7350 Planer Stand with Integrated Mobile Base)</td>
<td>Smoothing wood surfaces</td>
<td>Smoothing rough wood surfaces, also making larger pieces that have been glued to be more uniform (e.g. butcher block)</td>
<td>$500</td>
</tr>
<tr>
<td>Jig Saw</td>
<td>Cutting complex shapes in wood by hand</td>
<td></td>
<td>$200</td>
</tr>
<tr>
<td>Circular Saw</td>
<td></td>
<td></td>
<td>$200</td>
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<tr>
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<td>Wherever wood is cut and joined</td>
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<tr>
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<td></td>
<td></td>
<td>$3,000</td>
</tr>
<tr>
<td>General Shelving, storage,</td>
<td></td>
<td></td>
<td>$20,000</td>
</tr>
<tr>
<td>cabinets</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
OUTREACH: DEFINITIONS AND GOALS

STATEMENT OF NEED
The needs of the North Carolina education community are as diverse as the 115 school districts in our state. In discussions with state and local K-12 educators, institutions of higher education, and the business community, NCSSM encountered a multitude of individual needs, with several persistent themes emerging relative to how those communities see NCSSM in the context of the state’s educational makeup:

- Help with new standards. LEAs are struggling to implement Common Core and North Carolina’s Essential Standards, and are beginning to look at emerging standards such as Next Generation Science Standards. LEAs have asked for sustained efforts to transform classroom practices to adopt these standards and develop teachers’ and students’ ability to do the complex kinds of thinking they require.

- Differentiated instruction for gifted students. The education community recognizes NCSSM’s expertise in serving children ready for advanced academic challenges, specifically at the high school level. As schools are faced with additional decisions about resources and increased accountability, they have had to reduce the services available to their most advanced learners. Schools look to NCSSM to provide solutions that allow them to engage these learners in their communities.

- Integration of problem solving and critical thinking into all areas of the curriculum. While many schools identified the integration of engineering into math and science curriculum as a local goal, most acknowledged that they had a greater need for students to understand how to apply skills learned in the classroom in other contexts. Integrating engineering represents one path to this goal, and could serve as a pillar of a larger effort to develop problem solving and critical thinking skills in every classroom.

A DEFINITION OF OUTREACH
Outreach takes many forms at NCSSM, from scholarship-driven activities within an intellectual community by individual faculty and staff, to service to the community and state, to team efforts to improve K-12 teaching and learning at a local, state, and national level. NCSSM recognizes each as important, and provides faculty and staff with opportunities for these outreach efforts to be considered in evaluations of performance.

While NCSSM should never discourage individual outreach activities, the institutional focus for outreach (and corresponding allocation of resources) should center around three core activities: engagement, direct service to students and legacy products.

K-12 outreach and professional development has, in the past, been characterized by short bursts of activity around specific reforms. Consequently, statewide efforts have seemed fragmented or incomplete, and in certain areas of the state, educators suffer from reform fatigue—having been inundated with new reforms before previous efforts have had the chance to take root, and with little or no continued support for each successive reform, educators quickly become overwhelmed with the new practices and resort to the same behaviors they engaged in before the professional development.
Engagement requires a true partnership between teachers, schools, LEAs, and/or other organizations in the K-12 education community. In an engagement model of outreach, partners create and sustain a relationship that is mutually beneficial for the organizations, ideally increasing capacity on both sides to achieve organizational goals. As NCSSM shifts to an engagement model, it should fund and support with staff time outreach efforts that:

- Articulate a clear scope and measurable goals for the project at the outset.
- Identify partner schools and LEAs where the conditions exist for sustained partnership, such as support from leadership, a “boots-on-the-ground” champion for the effort who will be proactive in implementation, and data to support their need and readiness.
- Propose budgetary and structural changes at both NCSSM and the local site which will ensure that the efforts are sustainable over time, persisting even if the “boots-on-the-ground” champion or an individual expert becomes unavailable.
- Provide opportunities for formative assessment and adjustment of strategies, within the scope of the partnership, as necessary.
- Adopt the NCSSM Outreach Model and Process for LEA and School Partnerships.
- Suggest next-step possibilities once the identified goals have been met.

Engagement, by nature, is tailored to the needs of both institutions, and may not be immediately scalable. As such, both NCSSM and the partner must be deeply committed to showing the change that takes place through formative and summative evaluation, collaborative publicity and advocacy, and internal messaging with faculty and staff in both organizations. Professional development sessions, materials, courses and curriculum development, mentorship and coaching models developed for use in an engaged partnership may be tweaked, extended, or redeveloped as digital assets for wider dissemination as a part of other efforts or at a later date.

An outreach strategy that provides direct service to students extends the reach of what NCSSM faculty and staff do on a daily basis in the residential and virtual programs. Providing opportunities to experience direct contact with NCSSM faculty and staff will extend the awareness of NCSSM and the goodwill in local schools and communities. Just as sustained professional development proves more beneficial to teachers than one-shot professional development, sustained contact with faculty proves more beneficial to gifted adolescents. NCSSM should look to focus funding and staff time on efforts that provide opportunities for students to prepare, participate in, and reflect on experiences with the guidance of NCSSM faculty and staff; reflection activities and other products should form the basis of the evaluative measures used to determine the success of the outreach. Examples include summer programs, student conferences, and collaborations with public school classrooms. These outreach efforts should also look to involve NCSSM residential, virtual, and IVC students in the direct service to students as peer participants or as student coaches, teachers, and leaders.

A third type of outreach, the development of legacy products, provides NCSSM with a means for reaching a large audience of teachers or students. Legacy products may result from engagement efforts or direct services to students, or may be the focus of development time and dollars. The vast majority of NCSSM’s legacy products used for outreach are digital assets available through the STEM@NCSSM site, the NCSSM YouTube channel, and the NCSSM Livestream channel. Additional legacy products include curriculum packaged for local use and an online professional development course. The utility of legacy products depends on their relevance to current efforts at the local, state, and national levels, and their availability in multiple contexts. To fully utilize the collection of digital assets, NCSSM must invest in providing a suitable interface for searching the collection, including a metadata schema, and in continued curation of the collection. Curation will allow NCSSM to discard materials that have lost their relevance or no longer accurately reflect current research, identify materials which are most in need of updating or enhancement.
based on usage trends, and strategically identify content gaps that could be filled through targeted asset development.

**Outreach Goals**

In conversation with groups of internal and external stakeholders, the following themes emerged as goals for NCSSM’s institutional outreach efforts:

- **Target under-represented populations in under-resourced areas.** NCSSM should recognize that it can have significant impact by developing partnerships with LEAs and schools that have not been the focus of large-scale efforts by other state agencies (including the Department of Public Instruction). NCSSM should evaluate demographic data and align outreach targets to that data.

- **Focus engagement on a few partnerships.** Recognizing that ongoing individual outreach efforts serve a broad population, stakeholders were emphatic that the school cannot engage deeply with too many LEAs or schools and should focus resources on strategic partnerships.

- **Leverage the expertise and excitement of faculty and staff, while giving them a chance to innovate and grow their skillsets.** While NCSSM has been successful in areas including face-to-face professional development, curriculum development, video, and digital asset development, the school should not limit the scope of activities in partnerships to what has been done before. New activities, such as online professional development, MOOCs, and blended learning, should give faculty the opportunities to challenge themselves and enhance their skillsets—a process which will lead back to their classroom teaching.

- **Broaden systematic engagement without discouraging individual outreach efforts.** Stakeholders applauded the breadth of individual and small-team outreach efforts from NCSSM faculty and staff. With deep connections to professionals in their fields, the ongoing relationships that individual faculty and staff have developed often serve as a lifeline for the populations they affect. As NCSSM clarifies its institutional goals and allocates time and funding accordingly, it must be careful to encourage and celebrate individual accomplishments in outreach, particularly in the areas of scholarship, leadership, and community service.

- **Consolidate efforts, particularly in the summer.** Various existing outreach efforts are developed by different areas of the school. Currently, each individual effort must coordinate a variety of functions (including marketing and publicity, facilities and inventory management, supervision, and activity programming), often replicating for the short term a service already provided in another area of the school. Efforts will be more efficient and scalable with clear areas of responsibility.

- **Organize, collect, and extend the reach of digital assets.** The strategic plan goal of reaching a million students in five years requires that NCSSM make digital assets more readily searchable and provide access to those assets in multiple contexts. Engagement efforts should look to leverage and refine existing digital resources, but NCSSM should also look for ways to re-publish and disseminate those materials.

**NCSSM’s Core Competencies**

In addition to providing a residential academic experience for 680 students a year, NCSSM also provides advanced academic opportunities for middle and high school students, including distance education courses for credit, school year academic enrichment sessions, summer academic experiences, student conferences, math and science
competitions, and fine arts events. During the 2011-12 school year, more than 3,900 students participated in one or more of these activities.

Underpinning the faculty expertise in these areas is an infrastructure which supports the school’s outreach mission. Staffing NCSSM’s four interactive video conference studios are four digital media specialists and an IVC technical manager, each of whom contribute throughout the year to outreach. NCSSM also has a newly-established creative suite, which combines web developers, animators, a photographer, a videographer, an instructional designer, and a communications expert to help faculty, staff, and administration craft a message, find the right delivery method, and develop materials for print or digital use. And the school’s Student Life Instructors regularly contribute to programming with activities designed to teach students wellness, personal responsibility, and career skills.

Many faculty members contribute to the improvement of teaching and learning across the state, nation, and world through providing teacher professional development and presenting at state and national conferences. NCSSM faculty reached more than 2,800 teachers through professional development or presentations at conferences in 2011-12.

Service is an important aspect of the NCSSM experience and students engage in many community service activities during their time at the school. The Class of 2012 provided at least 21,000 hours of community service.

NCSSM faculty play pivotal roles in their fields of expertise through leadership in their professional associations and through contributing scholarly work. During the 2011-12 school year, 13 faculty members served as an officer or committee members in a professional organization or association, and five faculty members authored or co-authored a book, book chapter, textbook article, or refereed journal article.

Process for Stakeholder Feedback
NCSSM solicited feedback on the purpose of outreach, NCSSM’s core competencies, and the core needs throughout the state through surveys and conversation with a variety of partners. All faculty contribute to a yearly survey of their outreach activities, compiled by the NCSSM Office of Institutional Research, which led to an inventory of activities included in the development of NCSSM’s core competencies. A voluntary group of faculty, staff, and administration met three times in spring 2013, discussing the outreach definition and goals, and serving as a liaison between the voluntary group and the academic departments. The Board of Trustees subcommittee on distance learning and extended programs offered feedback on outreach goals and the NCSSM partnership model in December, 2012. Additionally, NCSSM faculty and administration had extensive conversations regarding outreach activities and directions with personnel in the field, including higher education faculty and past faculty, past officers of national professional organizations, K-12 superintendents and school administrators, the North Carolina Business Committee for Education, and the North Carolina Department of Public Instruction.
DIGITAL ASSETS SCORECARD SUMMARY June 2015

COMBINED TOTALS

Total views:
3,879,825 (+549,349 since last BOT meeting)

Flickr
1,012,381 views
2,500 views per day average

YouTube
2,728,219 views
3,600 views per day average
785 videos (+110 since last BOT meeting)
Engagement: 6,505 likes, 1,480 comments, 5,646 subscribers, 1,102 shares, 3,673 favorited

IVC Video Collection
We host more than 1,500 videos of IVC class sessions each year.
Approximately 6,500 videos viewed each year.

STEM@NCSSM
24,322 total views
Content has also been added to NCLOR

NCSSM.EDU/LEARN
41,404 total views

CANVAS LMS
37 Online Courses have been migrated from BrainHoney
205 Courses in Canvas
74 Active Courses Currently Being Taught
32 Active Teachers
807 Active Students Enrolled
Discussion Topics Created: 1,115
Assignments Created: 3,247
Files Uploaded: 15,347

1 Analytical data was gathered May 14, 2015