The following review highlights significant accomplishments by the College of Science over the past few years. Very few of these accomplishments would be possible were it not for the dedication and efforts of the associate dean, department chairs, program directors, faculty, staff, and students, as well as many friends and supporters from outside the COS. Collectively, all have been instrumental in positioning the College of Science for the future.

**Faculty/staff recruitment and professional development:**
Since 2011, the COS has been able to hire 13 tenure-track faculty and two staff members to head up Developmental Mathematics and the Center for Science and Mathematics Education (CSME). Of the fifteen outstanding new hires, 12 are women who also have helped to expand diversity within the COS. Providing reduced first-year teaching loads, substantial startup support, and incentives that help our new colleagues get a “jump start” on courses and research by facilitating their move to Ogden in mid-summer has allowed us to continue to attract high-quality colleagues to WSU, even in competitive markets. Multiple lines of evidence suggest that barriers between disciplines can be broken down and and interdisciplinary faculty can often best address scientific challenges. As such, hiring new faculty who can contribute to existing or developing new interdisciplinary teaching and research areas has been a priority of the COS in recent years. This focus, coupled with a desire to engage faculty whose expertise can contribute to both short- and long-term needs of the community and regional industries, has the potential to help the COS position itself more firmly for the future. Improving the pathways for students to enter STEM fields also has been important to the long term success of the COS, and in 2015, the COS received funding from the Provost for two "new" STEM Education faculty that culminated in successful searches. Our new colleagues are now working directly with local districts and teachers to improve the preparation of future STEM students. Currently, two additional searches are underway: one in Microbiology for a microbial systems expert and another in Mathematics for a math educator. Other pending requests for additional COS faculty have been submitted to the Provost and, with her support, to the Legislature for consideration.

The COS continues to provide encouragement and support for faculty to attend local, regional, and national conferences that focus on STEM education as well as conferences that showcase disciplinary-based educational research. The college has also engaged speakers to visit WSU and share strategies to help our students. These experiences have provided faculty with opportunities to discover, adopt, and adapt best practices previously refined by others. Likewise, promising ideas generated within the COS have been supported via release time for individual faculty. Collectively, these investments appear to be helping individuals and departments improve student learning and success.

**Facility Improvement**
One of the greatest investments of time for everyone in the COS over the past 3.5 years has involved programming, design, and construction of the new Tracy Hall Science Center. Moving during the summer of 2016 was carried out with relatively few hiccups, and the list of “punch list” and other repair items continues to shrink, albeit sometimes slowly. It appears that the majority of faculty, staff, and students appreciate and even enjoy the new facilities.

Purchase of approximately $2.5M in new equipment and instrumentation was authorized and, to date, most has been delivered and installed. This level of funding includes investments that, for
example, will support interdisciplinary studies in materials science, and in drug metabolism, environmental studies, and biochemical analysis. Also, a substantial investment was made to provide new classroom and research microscopes for a number of departments throughout the college. Investments in equipment and instrumentation have the potential to improve faculty and student research opportunities and improve WSU's reputation among our peers. A modern infrastructure also has great potential to attract students and to enhance their potential success.

The success of the Tracy Hall project represents an enormous team effort by the entire COS. As we move into the future, it’s also notable that promising discussions with FM concerning the need to substantially renovate/remodel Lind Lecture have taken place, and that the COS will begin working on this project in the near future.

Development
The COS raised $11.5M in donations related to the Dream 125 Capital Campaign. This amount fell short of the $20M aspirational goal that the COS set early on in the Campaign. A significant portion of the total was a $5M naming gift from the Hall family. Nonetheless, the COS did raise an additional $6.5M, including several substantial legacy gift pledges for scholarships and individual programs. Fundraising for traditional science and mathematics has proven difficult in our area, and two COS development officers have left WSU within the past few years. However, with the support of University Advancement, the COS recently hired a Senior Development Officer with substantial knowledge of our area who will pick up fundraising efforts in early November 2016.

Programmatic/curricular improvements
Following the last program review cycle, departments were asked to assemble advisory boards who could provide information to departments about how they might best position themselves and their students for future success. Following the lead of Geosciences, most departments in the COS have assembled and met with an advisory board and some, like Microbiology, have already developed well-conceived strategic plans to help guide their programs forward. Strategic planning for departments and programs is also being used to foster discussions about courses and curricula, especially within the context of student success and regional workforce needs. To this end, Chemistry has developed a new Biochemistry program; Mathematics has developed an Associates’ Degree program for Applied Math; and several other departments, like Zoology, are reexamining their programs and curricula. Many faculty are involved in current discussions of how to best improve General Education, and a number of COS faculty have developed or are in the process of developing new interdisciplinary General Education courses. Representatives from the three life sciences departments recently attended an NSF-sponsored PULSE workshop, and last spring, a group of COS faculty attended an NSF WIDER-Persist workshop. Collectively, these are significant efforts that not only have the potential to attract students to the COS but also to improve student success.

Center for Science and Math Education
In keeping with the hiring advertisement, CSME Director Dr. Jennifer Claesgens was charged with developing collaborations with local K-12 districts, working with local in-service teachers, providing instruction in STEM education to WSU’s pre-service teachers, and actively pursuing scholarship and grant funding related to STEM education. In the two years since she joined the COS, Dr. Claesgens has exceeded expectations in all areas. She continues to develop collaborations and build partnerships with administrators and faculty in local districts; she works with other STEM educators in the COS and at WSU to provide professional development opportunities for local in-service teachers; she teaches several STEM-ed courses each academic year to our WSU pre-service teacher students; she’s developed several summer programs for local K-12 students and
teachers, and she’s collaborated with COS Chemistry faculty as well as with STEM educators throughout the nation to maintain her scholarship. In the past two years, Dr. Clasgens and other CSME-affiliated COS faculty have received approximately $1M in grant funding or contracts to help improve K-12 STEM Education in our area. The CSME continues to develop a strong and positive presence in our region and is an increasingly valued asset to the COS.

**Developmental Mathematics, QL, and Concurrent Enrollment**

In many ways, one of the most significant impediments to student success at WSU is the ability of our students to successfully complete their QL requirements. Each year, roughly 75 percent of incoming students require some level of Developmental Math prior to enrolling in a required QL course.

In 2012, when Dr. Kathy VanWagoner was hired as Director of Developmental Math, she found that the TERM (Technology Enhanced Remedial Math) model we had implemented earlier actually impeded student success. In the interim, Dr. VanWagoner began to provide professional development opportunities for her faculty, and also facilitated development and testing of new pedagogies capable of improving student mastery of developmental math. The result has been to reimagine the Developmental Math program at WSU. The TERM program has largely been discontinued, with technology being used only for problems and assessment. Flipped classes, and the introduction of other new student-centered pedagogical approaches (e.g. Pathways, R.E.A.L.) along with attention to addressing affective domain challenges among our students have improved success rates dramatically in the past few years. MATH 970, a new class designed to prepare MATH 950 students for QL MATH 1030 has been very successful. Average success rates for students who completed Dev Math classes with a C or better have hovered around 80% in the past year – well above the 45-55% associated with TERM.

Within the Math Department, a number of innovative pedagogical changes also are being implemented and assessed by faculty in several QL courses. The Honors “Math Dance” course developed by CAH Professor Erik Stern and COS’ Dr. Julian Chan is a great example of this. Their approach has proven to be very successful and this course will be rolled out as a “WSU” interdisciplinary GenEd course next semester. Another group of mathematics faculty have been redesigning the MATH 1030 course to take advantage of the skills and knowledge base built by the prerequisite MATH 970 course.

In the past few years, concurrent enrollment courses have become attractive to our Legislature because they can speed up the time to graduation of college bound high school students. Recently, to help improve concurrent enrollment QL opportunities for local K-12 students, mathematics faculty began working with regional K-12 math teachers. Last year, WSU received a ~$500K, three-year USHE grant to increase the number of concurrent enrollment QL courses within our service area and also provide professional development and quality control for K-12 math “adjuncts” who teach these courses. Our model seeks to help local in-service teachers improve their teaching effectiveness and then to also serve as role models and mentors for other math teachers at their schools. The WSU team (a partnership of Mathematics, Developmental Mathematics, and CSME), is partnering with local districts and their teachers to improve student success in concurrent enrollment QL courses.

Efforts to improve student success in Developmental Math and QL courses continue along a variety of fronts, and the potential for increased student success in the future appears to be within reach.
Scholarship and external grant activities.
The majority of COS faculty remain active in scholarship. Evidence for this statement arises from the high percentage of successful tenure, promotion, and performance compensation applications submitted by the COS. To support their scholarship, or to help their departments be more successful, COS faculty appear to be increasingly active in writing and submitting proposals for external funding, including the recent submission of one of WSU’s first interdisciplinary proposals to the National Institute of Health (NIH). Interdisciplinary teams have also submitted proposals to the Howard Hughes Medical Institute (HHMI) and to the U.S. Department of Education seeking funding to improve recruitment and retention of underrepresented students who wish to pursue STEM degrees. These efforts to broaden the base of external support within the COS are laudable and speak well of the efforts faculty and staff have expended to obtain external funding for the COS.

Community Outreach
Physics continues to lead the COS’ efforts in outreach to the community via their annual Open House, Planetarium shows, open observatory nights, Science Saturdays, and Science and Art in the Parks events. Faculty and students from across the COS continue to visit local K-12 institutions to showcase aspects of their disciplines. The CSME is becoming more engaged in supporting such efforts. Botany continues to maintain a presence in local community gardens and has partnered with the Nutrition program to construct a greenhouse at the Davis Campus. An interpretive trail was recently opened east of the Ogden Campus and was made possible by the efforts of faculty from across the COS, alumni, and local citizen groups as well as Ogden City. COS faculty and staff remain active in Science Olympiad and especially in the Ritchey Science and Engineering Fair. The Ritchey and Richards lectures continue to bring outstanding speakers to campus for presentations geared towards the general public. Finally, many faculty and staff from across the COS have been involved in providing summer camp opportunities for local K-12 students. In summary, all of these efforts demonstrate a commitment to our community by the COS.

Summary
The preceding highlights only some of the accomplishments made by the COS in recent years. Changes are happening, and the COS is moving ahead. The move into the new Tracy Hall Science Center, filled with modern equipment and instrumentation, along with the presence of a number of new faculty seems to have generated a more positive outlook and increased the energy within the College of Science. There are many challenges that remain to be addressed, but the COS appears to be charting a stronger path into the future. As such, thanks to all faculty, staff, and students for your ongoing efforts to be the best you can be.