3.B - The institution demonstrates that the exercise of intellectual inquiry and the acquisition, application, and integration of broad learning and skills are integral to its educational programs.

Assurance Evidence
Faculty participated in an extensive, multi-year review of the undergraduate general education curriculum to develop CSU’s All-University Core Curriculum (AUCC). Emphasis was placed on an outcomes-based approach with the identification of four components: (1) First Year Seminars, (2) Core Competencies, (3) Foundations and Perspectives, and (4) Depth and Integration. When adopted by the Faculty Council in December 1998, the AUCC was designed to permit students to choose courses to fulfill requirements with greater focus, a deeper commitment to core competencies, and more specific intellectual categories than the former University Studies Program.

The 38-credit AUCC was implemented in Fall 2000. The AUCC: (1) provided a focus on learner outcomes in addition to course content; (2) emphasized lifelong learning to supplement knowledge in a discipline; and (3) integrated core themes throughout a student’s entire program of undergraduate study. Therefore, all CSU undergraduate students share a learning experience in common, and the faculty from across the University contributes to that experience. Each baccalaureate program of study must incorporate each of the categories of the AUCC as described in detail in the General Catalog.

In Fall 2004, First Year Seminars were eliminated from the AUCC as a result of college and department assessments of their value in relation to the amount of resources required to offer them. This change uncoupled orientation and academic seminars. More emphasis is now placed on orientation (multiple days) before classes start in the fall (see advising in Component 3.D.3).

The AUCC was further modified in February 2006 to comply with the Colorado Department of Higher Education (CDHE) gPathways Curriculum as required by CSU’s performance contract. The gPathways is a set of general education courses that the state guarantees to transfer through statewide transfer articulation agreements and fulfill the general education requirements of other state institutions of higher education. gPathways applies to all Colorado public institutions of higher education, and there are more than 500 lower-level general education courses in 20 subject areas approved for guaranteed transfer. The curriculum consists of 31 credit hours of courses across six content areas. Approved courses in gPathways are not based on course equivalencies but meet content and competency criteria. The most significant change in the AUCC was adoption of two writing courses as the minimum communications skills component in place of one writing and one oral communication course. Programs may still require an oral communication course but it does not qualify for transfer within gPathways. At that time, several other adjustments were made, largely to keep from expanding the total credit requirements of the AUCC due to the adjustments to comply with gPathways. For example, the requirements for a “Health and Wellness” course and a “U.S. Public Values and Institutions” course were removed.

The faculty has established two policies to emphasize the overall importance of the AUCC as an integrated component of students’ learning rather than an add-on. An overall GPA requirement of 2.0 or greater for all courses taken to complete the AUCC requirements is intended to encourage students to think of the AUCC as an important part of the undergraduate experience, integral to being a successful student, and a graduation requirement of the major. A 60-credit ceiling was established, requiring undergraduate students to complete AUCC core competencies in composition and mathematics before proceeding further with advanced coursework. This enforcement demonstrates the faculty’s commitment, whereby students are expected to develop core competencies and skills before enrolling in courses that assume command and integration of these skills.

1. The general education program is appropriate to the mission, educational offerings, and degree levels of the institution.

CSU’s general education program (AUCC) has been developed and refined by the faculty to be appropriate to its mission and educational programs, and to comply with CDHE requirements.
The addition of the “Depth and Integration” requirement to the basic 31-credit requirement of the statewide *gtPathways* differentiates the general education component of CSU’s baccalaureate degree programs from associate degree programs at other Colorado institutions. The upper level requirement for an advanced writing course allows for applied courses to be developed within disciplines rather than being taught only by professionals in the discipline of composition. These courses are expected to enhance written communication competency within all programs.

2. The institution articulates the purposes, content, and intended learning outcomes of its undergraduate general education requirements. The program of general education is grounded in a philosophy or framework developed by the institution or adopted from an established framework. It imparts broad knowledge and intellectual concepts to students and develops skills and attitudes that the institution believes every college-educated person should possess.

The AUCC was originally developed by the faculty of CSU to assure that students developed the competencies and skills essential for applying their increasing knowledge to an enhanced quality of life and the public good, as described in the AUCC Objectives. Pursuant to CRS Section 23-1-108.5, the CDHE convened the General Education Council to recommend statewide coursework and articulation agreements to standardize general education in Colorado public institutions of higher education.

3. Every degree program offered by the institution engages students in collecting, analyzing, and communicating information; in mastering modes of inquiry or creative work; and in developing skills adaptable to changing environments.

Every baccalaureate degree program offered by CSU is designed to engage students in the acquisition of broad-integrative knowledge and intellectual skills, usually termed a general education, as described above in the AUCC requirements. In addition, undergraduate programs require specialized, applied learning within a discipline as defined by majors, minors, and concentrations. CSU has been recognized as one of the top 20 universities that makes writing a priority as a critical element of student success, according to the 2012 *U.S. News and World Report* “America's Best Colleges” edition. *U.S. News and World Report* also highlighted CSU as an outstanding example of institutions that encourage “Writing in the Disciplines” – a distinction that helps drive student success, according to the magazine. Also listed among the 17 schools in the category were Brown University, Carleton College, Cornell University, Duke University, Harvard University and Princeton University. The 2012 NSSE results provide evidence that students find the curricula to be challenging and aiding them in developing desirable skills and competencies.

Each graduate degree involves mastery of important subject matter. Depending on the discipline, career objectives, and particular curricular needs, unique study plans may be arranged for students on an individual basis. The study plan may require the possession of knowledge in addition to that acquired through course work and also the ability to creatively synthesize and interpret that knowledge. Further, research or artistic projects are often an integral part of graduate study as well as field responsibilities or service obligations. Since graduate work thus extends beyond completion of course work in several ways, students must not only demonstrate the ability to earn satisfactory grades in their courses, but must also show that they possess those more elaborate abilities and skills essential to the various academic and professional fields. It is often the case that some form of culminating event, be it comprehensive examination, thesis, or other performance, is part of the degree program.

4. The education offered by the institution recognizes the human and cultural diversity of the world in which students live and work.

Many faculty members play central roles in enhancing the global and cultural awareness emphasis in the curriculum in fulfillment of the AUCC Global and Cultural Awareness requirement. These efforts also respond to the University’s internationalism values and the faculty’s own analysis that students were not adequately knowledgeable about or prepared for careers and life in an increasingly global marketplace and world community. Courses have been developed with international perspectives, and colleges have hired a number of faculty members with international backgrounds and specializations.

In Spring 2012, the BA degree in International Studies was added as a new undergraduate program at Colorado State University.
major with four concentrations: Asian Studies, European Studies, Middle East/North Africa Studies, and Latin American Studies. This program focuses on the diverse civilizations of cultural areas outside North America, including both disciplinary and multidisciplinary perspectives, thus giving students powerful tools for understanding the world. Many faculty members, often working with the Office of International Programs and others, provide on-campus programs to increase international understanding. Some notable accomplishments include:

- Nearly 1,400 international students and scholars from more than 85 countries are engaged in academic work and research at CSU;
- Over 980 CSU students per year participate in educational programs and international field experiences in over 70 countries; and
- Consistently, CSU is one of the top-ranking universities in the nation for the recruitment of Peace Corps volunteers.

![History of Education Abroad Programs](image)

*Source: Fact Book 2012-13, p. 110*

Efforts to provide ethnic studies programs have grown from small interdisciplinary studies programs started in the 1970’s to the establishment of the Department of Ethnic Studies in 2008. The Women’s Studies Program, formerly housed in a center, joined the department in Fall 2011. The department now offers the BA and MA degrees in ethnic studies, and at the undergraduate level, also offers a minor in ethnic studies, and a concentration in women’s studies. Since Fall 2008, student FTE in the Ethnic Studies department has increased by 80% from 60 to 108 in Fall 2012. In Fall 2012, 916 undergraduates were enrolled in courses through the Department of Ethnic Studies. The department also houses the very active Center for Women's Studies and Gender Research that further expands the learning opportunities available to students.

Through the strategic planning process, a number of goals have been identified to facilitate becoming a model institution for a diverse campus culture that supports sustainability, energy, and the environment. Other contributions to human and cultural diversity within the educational experience of CSU students are discussed in Component 1.C (diversity) and Component 3.E (enriched educational environment).

5. The faculty and students contribute to scholarship, creative work, and the discovery of knowledge to the extent appropriate to their programs and the institution’s mission.

CSU provides an academic environment that encourages and promotes research excellence, innovation, and faculty achievement in research, scholarship and creative artistry that benefits society, advances our world, and expands the body of human knowledge. Strategic Planning Area 2 focuses on initiatives to advance research, scholarship, and creative artistry commensurate with or above our current peer institutions; expand external funding; and enhance quality of life and economic development for our public constituents.
In FY12, CSU’s research expenditures totaled $375.9 million. Based on a limited data release for the FY11 Higher Education R&D Survey by NSF:

- CSU ranks 67th (out of 912 universities) in total R&D expenditures, in the top 7% of all institutions, up from 70th.
- CSU ranks 56th (out of 896) in federally funded expenditures, in the top 6% of all institutions, up from 58th.
- CSU ranks 6th in federally funded expenditures among public institutions without a medical school.
- CSU ranks 2nd among the Board peer institutions without a medical school for federally funded expenditures.
- CSU ranks 3rd in federally funded expenditures on a per faculty headcount basis among the Board peer institutions. Of the two peer institutions ranking ahead of CSU, one has a medical school.

The Research and Discovery SPARC analysis of progress toward fulfillment of the Strategic Plan goals is available in the attached report.

CSU Ventures has been established to actively support and promote the transfer of CSU research and innovation into the marketplace for the benefit of society. The impact and success of these efforts are illustrated in the table:

<table>
<thead>
<tr>
<th>FY08</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
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<tr>
<td>Inventions Disclosed</td>
<td>91</td>
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<td>Patent Applications Filed</td>
<td>89</td>
<td>171</td>
<td>151</td>
<td>142</td>
</tr>
<tr>
<td>Patents Issued</td>
<td>8</td>
<td>6</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>License Agreements Executed</td>
<td>39</td>
<td>25</td>
<td>41</td>
<td>39</td>
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<tr>
<td>New Startup Companies</td>
<td>3</td>
<td>1</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Inventions Licensed to Colorado Companies</td>
<td>38</td>
<td>34</td>
<td>32</td>
<td>22</td>
</tr>
<tr>
<td>Inventions Licensed to Out of State Companies</td>
<td>11</td>
<td>9</td>
<td>16</td>
<td>15</td>
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<tr>
<td>Licensing Income</td>
<td>$0.81M</td>
<td>$2.79M</td>
<td>$1.13M</td>
<td>$1.33M</td>
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</table>

Ultimately, research is fueling innovation in important and diverse sectors, including agriculture, engineering, biophysics, veterinary medicine, chemistry, atmospheric sciences, and business. CSU is working to make certain that the discoveries and inventions that are coming out of on-campus laboratories move into the private sector faster than ever. In the past five years, CSU has licensed 157 technologies to companies in Colorado (224 technologies in total).

The University has organized its financial, physical and human resources to create the infrastructure necessary to promote cutting-edge research, identify emerging opportunities, and attract external funding. The designation of Programs of Research and Scholarly Excellence has served the University well by identifying model programs and priority areas of research for focused support. Recognition of University Distinguished Professors has also reinforced the importance of CSU’s pursuit of excellence in accomplishing its research and scholarship purposes. Superclusters have been designated to facilitate an alliance among experts in research, engineering, business, and economics that aims to expedite the commercialization of innovative research outcomes and intellectual property for global society’s benefit. The academic Superclusters aggregate a critical mass of academic research talent. This serves as a magnet for scholars in other disciplines and additional organizations or industries that benefit from that academic research or connection.

As an indication of the overall importance of research in CSU’s mission, research expenditures are currently equal to approximately 35% of the total University budget. Research activity develops problem-solving technologies and new knowledge to serve society. On campus, research creates a strong environment to attract and retain the top candidates for faculty, graduate student, and postdoctoral positions. These researchers are also strong teachers, providing current knowledge and experiences to their students. Many undergraduates have an opportunity to learn the scientific method, understand the principles of responsible conduct of research, and gets hands-on practical experience through research as described in more detail below.

The Center for Measuring University Performance has documented the continuous improvement of CSU’s ranking among the *Top American Research Universities* from #56 in 1990 to #45 in 2009.

**Colorado State University**
CSU ranks among the top 15 of all land-grant universities in the Faculty Scholarly Productivity Index (FSPI) which is calculated as a subset of the Academic Analytics Scholarly Productivity database. Data are collected in five areas of research activity: book publications, journal article publications, journal article citations, federal grants, and professional honors and awards. The FSPI was developed to facilitate broader comparisons of scholarly performance across disciplines within a university and comparison of the overall performance of universities. The index uses metrics that are independent of discipline values and of the portfolio of disciplines at universities to rank entire universities. The following chart shows CSU’s ranking among Board approved peers.

![Faculty Scholarly Productive Index (FSPI) June 2012](chart)

Source: Academic Analytics

Several programs and most academic departments assist undergraduate students with the development of effective skills for use of research and information resources, such as in communications courses and integration within disciplines. The Office for Undergraduate Research and Artistry (OURA), housed within The Institute for Learning and Teaching (TILT), offers support for mentored inquiry outside of courses. Since it was established in 2009, participation in mentored inquiry—typically in the form of work in laboratories, internships, and other academic and artistic partnerships with faculty members—has grown to more than 4,250 students (see table below). Key initiatives offered through OURA include:

- The Research and Artistry Opportunities Database, which helps students identify opportunities to participate in research and artistry at and beyond the University.
- Celebrate Undergraduate Research and Creativity (CURC) is an annual celebration of student research, inquiry, and artistry. Since CURC became associated with OURA in 2010, the number of students participating in CURC Poster Sessions has grown from 200 to more than 600 and a range of additional programs, including music recitals and readings of poetry and prose, have been added to the program.
- Honors Undergraduate Research Scholars (HURS) is administered through OURA. Its purpose is to foster and support high-performing undergraduate students involved in independent research. Each year, roughly 200 entering students are accepted into the program. In collaboration with a faculty mentor, they engage in research activities, demonstrate an aptitude for research, and expand their core knowledge in a manner designed to advance their current academic careers as well as enhance their prospective career opportunities.
- The Mentored Inquiry Program, which is currently being developed as an upper-division program at CSU.

Colorado State University
learning community, provides opportunities for students to deepen their engagement in undergraduate research or artistry. The program requires students to take courses and workshops focused on scholarly inquiry or artistic expression, work on a substantial project for at least two semesters with a faculty or industry mentor, publish or present the project, and complete a portfolio that presents their reflections on the experience.

- The Nationally Competitive Scholarship Program, housed within OURA, offers assistance to students who wish to apply for prestigious scholarships and fellowships, such as the Goldwater, Truman, Udall, and Fulbright, among many others.
- OURA Academies provide opportunities for faculty-led groups of students to investigate areas of scholarly and artistic inquiry that are not typically addressed in classes. These academies, ranging in size from five to as many as 25 students, allow students to work closely with faculty members without the pressure of grades or other expectations. Typically, academies result in the development of resources, often shared through the Web, that are of interest to other scholars working in the area.
- The *Journal for Undergraduate Research and Scholarly Excellence* is a unique creation that provides opportunity for undergraduate students attending any accredited institution of higher education to publish undergraduate research results. It is a student-led project that helps students deepen their engagement in research and artistry. Published twice each year, the journal is available in print and on the Web. Plans are being developed to expand the journal to a set of journals focused on particular academic disciplines. To support the journal and related efforts, OURA currently offers two courses in journal editing (an introductory and advanced course). The journal staff includes undergraduates representing all eight colleges (and, to date, three other institutions).
- To date, OURA has brought in more than $3 million in external grant funding to support undergraduate research across campus. These funds include support for summer research exchanges with six other universities including UT Austin, Wisconsin, Boston College, Georgetown University, UNC, and Autonomous University of the Yucatan.

<table>
<thead>
<tr>
<th>Undergraduate Research Participation</th>
<th>FY09</th>
<th>FY10</th>
<th>FY11</th>
<th>FY12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students involved in mentored research and scholarship</td>
<td>&lt;100</td>
<td>2361</td>
<td>3199</td>
<td>&gt;4250</td>
</tr>
<tr>
<td>Participation in CURC</td>
<td>98</td>
<td>~230</td>
<td>380</td>
<td>466</td>
</tr>
<tr>
<td>Participation in HURs</td>
<td>7</td>
<td>~300</td>
<td>~330</td>
<td>381</td>
</tr>
<tr>
<td>Participation in Academies, JUR, and other OURA programs</td>
<td>0</td>
<td>4521</td>
<td>801</td>
<td>1521</td>
</tr>
<tr>
<td>Research placements through OURA</td>
<td>&lt;100</td>
<td>269</td>
<td>378</td>
<td>467</td>
</tr>
<tr>
<td>Applications through nationally competitive scholarships program</td>
<td>26</td>
<td>29</td>
<td>17</td>
<td>32</td>
</tr>
</tbody>
</table>

Sources

- 2.3 - All University Core Curriculum
- All University Core Curriculum Objectives
- Annual Research Report FY 2102
- CO DHE GE Council
- CSU Ventures brochure 2012
- Fact Book 2012-13 (Page 110)
- NSSE Student Experience In Brief, CSU 2012
- Office for Undergraduate Research and Artistry
- Programs of Research and Scholarly Excellence
- Research and Discovery SPARC 2012
- Strategic Plan 2012 (Page 17)
- Superclusters
- The Journal of Undergraduate Research and Scholarly Excellence
- Top American Research Universities 2011 (Page 13)
- University Distinguished Professors, May 2012