Open Pathway Quality Initiative Proposal

Institutional Template

The enclosed Quality Initiative proposal represents the work that the institution will undertake to fulfill the Improvement Process of the Open Pathway.

Signature of Institution's President or Chancellor   *Date*

Ann Weaver Hart, President

Printed/Typed Name and Title

University of Arizona

Name of Institution

Tucson, AZ

City and State

The institution completes the Quality Initiative proposal by responding to the questions in each category of the template. The institution may choose to submit a brief implementation plan or supplemental charts or graphs as appendices to the template. Proposals should be no more than 4,500 words. The Quality Initiative Proposal is due no later than August 31 of Year 7 (and will be accepted beginning September 1 of Year 5). Submit the proposal as a PDF file to pathways@hlcommission.org with a file name that follows this format: QI Report No Name University MN. The file name must include the institution's name (or an identifiable portion thereof) and state.

Overview of the Quality Initiative

1. *Provide a title and brief description of the Quality Initiative. Explain whether the initiative will begin and be completed during the Quality Initiative period or if it is part of work already in progress or will achieve a key milestone in the work of a longer initiative.*

The UA Learning Initiative

The University of Arizona (UA) regularly engages in initiatives to improve student retention and graduation rates, to improve undergraduate advising, and to advance institutional assessment of programs. With regard to undergraduate education, we, like many others, have recently focused on improving the quality of teaching by introducing many evidence-based practices that improve student learning. These practices have included student-centered, active learning teaching approaches, developing collaborative learning spaces for teaching, and using adaptive learning software products. For faculty, we offer workshops and faculty learning communities focused on best teaching practices, peer review for formative and summative assessment of teaching, and one-

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on-one assistance for improved teaching. For students, we provide tutoring through the Think Tank, success courses for students on probation, and intrusive advising for freshmen and students in academic jeopardy. We are also developing analytic tools to help us identify students who might be at risk academically. It is becoming clear, however, that our focus needs to be expanded to include the quality of student learning. Improvements to teaching without attention to student learning are misdirected.

As a participant institution in the Association of American Universities (AAU) Undergraduate STEM Education Initiative, many of our STEM faculty members have improved teaching by using evidence-based instructional practices that are active and student-centered. A few faculty teaching these courses have demonstrated significant learning gains (Introductory Physics, General Chemistry, and Immunology). In addition, we have developed collaborative learning classrooms and identified teaching approaches that are most effective in these spaces. Teaching in these collaborative learning spaces has made a significant impact on changing the culture around teaching and student learning. Numerous surveys from classes taught in these spaces indicate that the students and the faculty value the learning experience and prefer learning in these spaces to that of a lecture hall. At our weekly AAU STEM meetings, the leadership team has deep and detailed conversations about how to improve teaching to enhance student learning. Last year, we discovered the book "Make it Stick: The Science of Successful Learning" by Brown, Roediger, and Mc Daniel (2014). Reading this book helped us to identify a missing link in our approach: the need to help students become better learners.
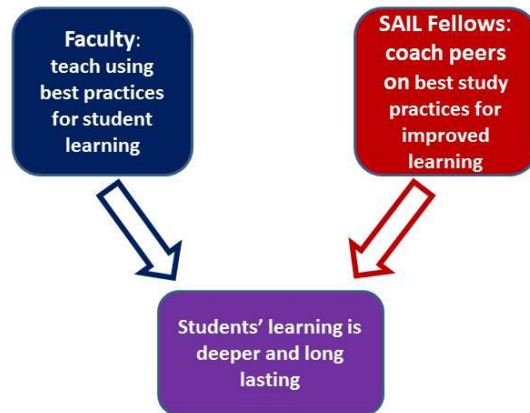
Our Quality Initiative for 2016-2019 is focused on helping faculty and students understand and use effective strategies that improve student learning and enhance retention of learned content and concepts. This year, we developed the proposal and obtained approval from several university committees. This fall we will implement the project broadly across campus and embed the project into the regular activities of the university. We will use the principles outlined in the book "Make it Stick," and referenced elsewhere. Namely:
- " Learning - acquiring knowledge and skills and having them readily available from memory so you can make sense of future problems and opportunities;
- Learning is deeper and more durable when it's effortful;
- Rereading text and massed practices of a skill or new knowledge are among the least productive study strategies;
- Retrieval practice - recalling facts or concepts or events from memory - is a more effective learning strategy than review by rereading;
- Trying to solve a problem before being taught the solution leads to better learning;
- All new learning requires a foundation of prior knowledge;
- Putting new knowledge into a larger context helps learning;
- People who learn to extract the key ideas from new material and organize them into a mental model and connect the model to prior knowledge show an advantage in learning complex mastery; and
- Learning is stronger when it matters, when the abstract is made concrete and personal."(Brown, et al., 2014).

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Proposed plan for the Quality Initiative on Learning:
Our initiative will include interventions to attend to the principles outlined above from *Make it Stick* (Brown et al., 2014) and other publications (Lang, 2016, Dunlosky et al., 2013 (1) and (2), and Ambrose et al., 2010).

Learning is a partnership between faculty and students, and both must participate fully if learning is to occur.

Faculty: teach using best practices for student learning

SAIL Fellows: coach peers on best study practices for improved learning

Students' learning is deeper and long lasting

Faculty Initiative:
For the last three years, small groups of faculty (80 in total) have met as Faculty Learning Communities (FLCs) to reform teaching practices in undergraduate courses that evidence has shown to improve student learning. We will organize a series of FLCs to discuss, practice, and assess our teaching practices that improve learning. Specifically, using results from research findings reported by others (for example, Lang, 2016; Dunlosky et.al., 2013 (1); Brown et.al., 2014; and Ambrose et.al., 2010), we will encourage faculty to offer numerous low-stakes assessments (quizzes, multiple homework assignments, etc.) that encourage students to practice retrieval; to grade the assessments right away; and to give assessments on the same concepts at later dates (spaced practice and retrieval). We will encourage the use of online tools and adaptive courseware that could improve preparation for class, facilitate the assessments and grading, and improve student learning. An Associate Professor of Practice (Dr. John Pollard) who has several years of experience working in and leading FLCs will oversee this aspect of the initiative. He is a Faculty Fellow (faculty selected to work with groups of students in clubs, residence halls, etc.) and will work with other Faculty Fellows and interested faculty. Dr. Pollard will also develop and run a communication campaign for faculty to inform them of teaching practices that make use of the best practices in teaching and learning (see above from "Make it Stick"). Faculty will be invited to participate through institutional listservs (Office of Instruction and Assessment, All-Faculty, etc.) and during new faculty orientations in the fall.
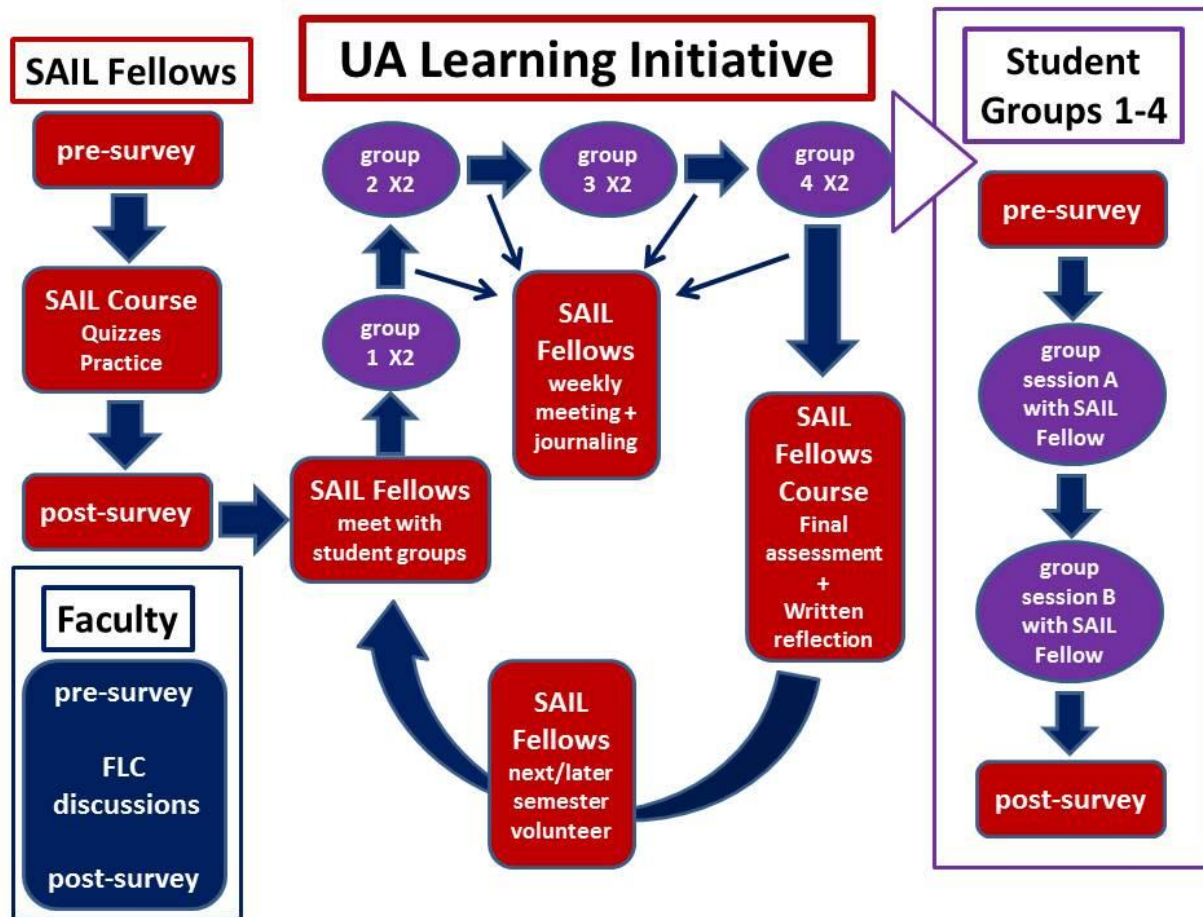
Learning Communities:
Interested participants will come together for discussions about how learning can be improved in courses taught by faculty and in success courses taught by advisors. The learning communities will include faculty, advisors, learning specialists, graduate students and undergraduates who want to

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discuss best practices for improved learning and want to put these ideas to use in the classroom. It will be very important to invite advisors, orientation personnel, residence-hall leaders, undergraduate learning specialists and tutors, and representatives of the multicultural centers to these learning communities. The Graduate College listserv will be used to invite TAs to participate.

Student Initiative:

This Quality Initiative will include a 100% Engagement Activity for undergraduates who will act as peer educators called "Student Advocates for Improved Learning" (SAIL) Fellows. The UA 100% Engagement Activities are courses, internships, or volunteer experiences that are approved by a faculty committee to be worthy of notation on the students' transcripts and must equal at least 45 hours of work. The SAIL Fellows will participate in sessions with faculty and other academic professionals to learn about best practices for learning and retaining knowledge and for conceptual understanding. The participation will mostly occur through a one-credit course (IA 497a "SAIL: Student Advocates for Improved Learning"), but students may participate through the parallel volunteer program (see diagram below that illustrates the project). The initial four weeks of the SAIL course will include readings from "Make it Stick" and from articles in the learning sciences and a series of short quizzes to help consolidate the Fellows' understanding. SAIL Fellows will be surveyed before the course and after the four-week training session on best practices for improved learning. Following the four weeks of discussion on the learning sciences, the SAIL Fellows will connect with groups of undergraduates across campus for discussions about learning. The student groups may be from the residence halls, a club, a class, one of the multicultural centers, or one of the special campus programs such as orientation. During an initial meeting with a group of students, the Fellows will administer a survey and then convey information about the most effective strategies for learning. The Fellow will encourage their peers to use these strategies in their courses. In follow-up sessions, the Fellows will ask students to reflect on the effectiveness of the strategies and will suggest ways to improve. At the end of the semester, the SAIL Fellows and the groups of students who were mentored will receive a follow-up survey to see whether the intervention made a difference in leadership and professionalism (Fellows) and in the study practices and performance in their classes (Fellows and student peers).

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Consistent with the goals of 100% Engagement Activities for Leadership, this opportunity will enable the SAIL Fellows to utilize various styles of leadership for the different groups of undergraduates that they will lead. Through practice, they will create collaborative relationships and networks with their peers as well as the faculty members and academic professionals who oversee the program. The Fellows will reflect on each of the mentoring sessions through journal writing and thus develop better self-understanding and social intelligence. Fellows will learn to communicate in an articulate and positive manner and act with integrity while they establish themselves as important student leaders on the UA campus. All of these skills should lead to enhanced professionalism. At the end of the semester, SAIL Fellows will write a two-page reflection of their own development and their ideas about the successes and challenges within the SAIL program.

Communication Materials:
 We will produce printed and web-based materials to inform the campus community about the learning initiative. Professionals in the Office of Instruction and Assessment (OIA), advisors, SAIL Fellows, interested faculty and Associate Deans, and Associated Students of the University of Arizona (ASUA) will participate in development of appropriate materials. Materials will include a website, a Facebook page, printed brochures and bookmarks, information on message boards, articles in the *Daily Wildcat*, and leaflets distributed in the student union, in residence halls, the recreation center, and at other locations. We have already produced a short video that will be used

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for the student initiative of the project (see:
http://streaming.oia.arizona.edu/clientFlashABR/play.php?clipname=/perm/take_charge_learning
/web.smil&autoplay=off&help=on&aspect=wide)

Sufficiency of the Initiative's Scope and Significance

   2. *Explain why the proposed initiative is relevant and significant for the institution.*

Potential for Significant Impact on the Institution and its Academic Quality
The University of Arizona has a high number of freshmen who are first generation (30%), rural, and Pell-eligible (29%) students and students from underrepresented groups (40%) that have not had superior education in high school. These students may not know the best ways to study to learn the concepts needed to be successful in college. Even well-prepared students may have coasted in high school and managed to get by. If our quality initiative is successful and students make use of improved approaches for learning in the early and foundation classes of college, all students will be in a better position to advance to graduation in the major of their choice.

Alignment with the University of Arizona Mission, Vision, and Strategic Plan
As a Land Grant and Space Grant Institution with two medical schools, a member of the Association of American Universities, and a broad spectrum of colleges with professional accreditation and other colleges directed toward a liberal arts education, the UA Mission encompasses a large scope of responsibilities. Thus the UA Mission is: *To improve the prospects and enrich the lives of the people of Arizona and the world through education, research, creative expression, and community and business partnerships.* We meet our mission through the following vision: *Through cross-cutting innovations distinctive to the University of Arizona, we will expand the student experience through engagement, advance knowledge through innovations in creative inquiry and collaboration, and forge novel partnerships to positively impact our community.* Following a process that engaged all of the campus and by using shared governance, the mission and vision were given more specific focus within the 2013-2018 Never Settle Strategic Plan. For example, one of the four major goals of the strategic plan is "*UA graduates leaders who increasingly represent the population of our state, nation, and global landscape and who, through a tailored learning experience, have the skills to apply their knowledge to the challenges of society and the world*." To reach this goal we will:
   - "Integrate effective and steadfast support for our diverse student body with new modes of thinking, teaching, and learning,
   - Design an accessible and extraordinary learning experience, tailored to each student, and
   - Provide each student unprecedented opportunities to apply knowledge through real-world experiences."

   3. *Explain the intended impact of the initiative on the institution and its academic quality.*

Impact of the UA Learning Initiative
Our UA Quality Initiative will enhance and support student learning through the integrated initiatives for faculty and students in this program. We will work with first generation and low income students through the Arizona Assurance Program, underrepresented groups through the multicultural centers, and students who need extra support through our tutoring center. The SAIL course and volunteer activity for the SAIL Fellows are designed to earn these students a UA certification on their transcripts of 100% Engagement in leadership with learning outcomes

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in professionalism. This leadership experience will enable the SAIL Fellows to experience professionalism involved in organizing events, making presentations/leading activities, following up with each group of students for a subsequent session, and reflecting on the sessions and the program through journal writing and a final reflective paper.

Clarity of the Initiative's Purpose

> 4. *Describe the purposes and goals for the initiative.*

Purposes and Goals
Our goals are to improve teaching practices and to develop beneficial study behaviors in undergraduates that lead to learning that is deep and long-lasting. An additional goal is to enhance the learning skills and to develop leadership skills and professionalism among the SAIL Fellows. By improving student learning, we also hope to increase undergraduate persistence and graduation.

> 5. *Describe how the institution will evaluate progress, make adjustments, and determine what has been accomplished.*

Evaluation of the UA Learning Initiative
Because of the broad-based approach of our Quality Initiative, most of the evaluation will include qualitative analyses. We expect that over the three years of this project that there may be a few controlled studies of individual courses where the faculty member has introduced teaching approaches that are known to improve student learning and the students have received mentoring from a SAIL Fellow on the best study practices for improved learning. However, the main focus of the initiative will be a broad-based approach designed to reach most faculty and students. For this reason, the focus of our evaluation will include pre- and post-surveys of faculty, SAIL Fellows, and students mentored by SAIL Fellows.

Progress toward the Student Initiative include assessment of student learning outcomes of the SAIL Fellows and of the students mentored by the SAIL Fellows.
- SAIL Fellows will be assessed for their learning outcomes from the class sessions on learning strategies. The evaluation will include pre- and post-intervention surveys of learning strategy use.   SAIL Fellows will keep a journal of their mentoring sessions with students and write a final assignment to reflect on the program, their own learning, and their development of leadership skills and professionalism. Based on what we have observed with the development of undergraduate learning assistants, we expect that the Fellows will report improved confidence and will be better communicators after the experience with this initiative. A rubric will be developed for use in program evaluation based these written reflections. All the surveys and rubrics are currently under development.
- Undergraduates mentored by SAIL Fellows will receive a pre-survey before the learning initiative intervention and a post-survey to see if the learning strategies used by the students are more in-sync with the evidence-based practices for improved learning. Based on our work with the ASEMS students on learning concepts, we feel confident that many students will appreciate and begin to use study strategies that improve learning.

Progress toward the Faculty Initiative will make use of part of the Teaching Practices Inventory used by Wieman and Gilbert (2014) to measure culture change in teaching practices among groups of faculty over time. This survey provides a quantitative measure of teaching practices that can be reviewed over time to assess improvements toward the use of evidence-based teaching practices. Some of the questions in the published survey will be modified for use in our QI project.

We plan to continue the QI and embed it into our regular activities on campus, but we will evaluate and write a final report at the end of the three year initiative that will be submitted to the HLC. All survey data will be collected and compiled each semester to measure progress toward the goals of the Quality Initiative. Jane Hunter, Director of Academic Resources and Special Projects, will provide analysis of the survey outcomes.

Evidence of Commitment to and Capacity for Accomplishing the Initiative

6. *Describe the level of support for the initiative by internal or external stakeholders.*

Commitment of Senior Leadership
- The Senior Vice President and Provost (Dr. Andrew Comrie) provided resources to fund the Director of Academic Resources and Special Projects, in part, to oversee initiatives such as this HLC Quality Initiative. Her other responsibilities include oversight of the Collaborative Learning Spaces and assisting faculty to be successful in using evidence-based teaching practices in these collaborative classrooms.
- The Senior Vice Provost for Academic Affairs (Dr. Gail Burd) will have direct oversight of this Quality Initiative and will work with faculty, students, advisors, learning specialists, and administrators to make sure the project proceeds as planned. She is the PI of the successful UA AAU Undergraduate STEM Education Project that has begun to observe a change in culture toward active teaching pedagogies as a result of our efforts.
- Associate Vice Provost for Instruction and Assessment (Dr. Debra Tomanek) will teach the course for the SAIL Fellows and is also a Co-PI on the UA AAU Undergraduate STEM Education Project. Resources and personnel from the Office of Instruction and Assessment will be available to support the QI.

Commitment and Involvement of Key Individuals and Groups
The idea for the UA Learning Initiative came out of Faculty Learning Communities (FLCs) in the UA AAU Undergraduate STEM Education Project, a project that includes members of the Executive Committee listed above, additional professionals from the Office of Instruction and Assessment, and other STEM faculty. Over eighty faculty have participated in the FLCs as part of the AAU STEM Project and these faculty are expected to be interested in discussions of how to improve their teaching using strategies that improve student learning, especially those highlighted in "Make it Stick". For example, giving students more quizzes, quizzing on concepts taught earlier in the semester, and making sure students are prepared for class by giving low stakes quizzes online before class or short quizzes at the start of class. In addition, Dr. Pollard presented the quality initiative to the Faculty Fellows at a recent meeting, and they expressed strong interest in participating in the initiative.

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The UA Learning Initiative program has been presented to several campus shared governance groups and committees including Undergraduate Council, Deans Council, Provost Council, University Academic Advisors Council, Associated Students of the University of Arizona, Faculty Fellows, and Council of Academic Associate Deans. The initiative has been very well received by all groups. The Advisory Committee will include representatives from each of these groups and personnel from several different colleges.

7. *Identify the groups and individuals that will lead or be directly involved in implementing the initiative.*

Executive Committee

This committee will include Dr. Jane Hunter, Director of Academic Resources and Special Projects who will manage the day-to-day aspects of the initiative, teach in the SAIL course, and oversee the volunteer program. Dr. Debra Tomanek, Associate Vice Provost for Instruction and Assessment, Director of the Science Teacher Preparation Program, and Professor in Molecular and Cellular Biology developed a curriculum for and will teach students in the SAIL course and volunteer program. This curriculum is currently in use for a cohort of STEM first-generation and Pell-eligible Arizona freshmen and transfer students (Arizona Science, Engineering, and Mathematics Scholars). Dr. John Pollard, Associate Professor of Practice, has agreed to serve as the lead for faculty professional development on teaching practices that improve student learning. Ms. Alison Comrie, junior in Neuroscience and Cognitive Science, has agreed to serve as the Peer Director of the SAIL Fellows. Dr. Gail Burd, Senior Vice Provost for Academic Affairs and Distinguished Professor in Molecular and Cellular Biology, will oversee the project, will be responsible for reports to the Higher Learning Commission, and will chair the Advisory Committee. Except for Ms. Comrie, the other participants of the Executive Committee have been part of the leadership team of the UA AAU Undergraduate STEM Education Project that served as the main stimulus for the proposed HLC Quality Initiative on learning. However, the *HLC QI is* not designed for STEM students or faculty; it is *a campus-wide initiative that is designed for faculty, students, staff, and administrators from all disciplines at UA*.

Advisory Committee

The UA Learning Initiative Advisory Committee will be formed by personnel in disciplines from across campus that work with undergraduate students. This will include faculty, appointed personnel, staff, students, and administrators from various campus committees and a few individuals appointed by the Provost. Membership on the Advisory Committee is just beginning to be established.

8. *List the human, financial, technological and other resources that the institution has committed to this initiative.*

Support for the Initiative in Human, Financial, Technological, and other Resources
Oversight and support for the project will come from the Executive Committee and the Advisory Committee outlined above. Funding from the Office for Student Engagement has been requested to support the course for SAIL Fellows primarily to cover the cost of copies of "Make it Stick" for the Fellows. Funds are available from the Senior Vice Provost to cover printing and photocopy costs, refreshments for some events, and personnel to schedule meetings. If the workload becomes too much for the Director of Academic Resources and Special Projects to handle on top of other responsibilities, a graduate research assistant will be hired for the project with resources from the Senior Vice Provost.

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Appropriateness of the Timeline for the Initiative

(The institution may include a brief implementation or action plan.)

> 9. *Describe the primary activities of the initiative and timeline for implementing them.*

Appropriate Time for the UA Learning Initiative

Over the last three years, the University of Arizona has made a major effort to improve the teaching quality. The projects in this area have included the UA AAU Undergraduate STEM Education Project, development of and support for teaching in Collaborative Learning Spaces, the Task Force on Teaching Quality, the work by a Faculty Senate committee to develop definitions of quality teaching, development of a Peer Observation of Teaching Protocol for formative and summative assessments of teaching, requirement for peer observation of teaching and a teaching portfolio for promotion and tenure, a new Teaching and Course Evaluation program for students to evaluate faculty teaching and courses, a schedule to review all general education courses, and an initiative by the Arizona Board of Regents to define Quality in all aspects of our mission. Furthermore, over the last six years, UA has worked hard on assessment of student learning outcomes in academic programs.

The UA Learning Initiative is timely and appropriate because it focuses on the missing link between teaching and assessment of student learning outcomes. Learning is a partnership between the faculty member teaching a course and the students taking the course. Both members of this partnership need to participate fully for learning to occur. Thus, our Quality Initiative focused on improving student learning from the student side of the partnership fills the void between improved teaching and quality assessment of student learning.

Implementation Timeline

<u>2015-2016</u>
*   Developed plan for the HLC Quality Initiative
*   Presented drafts of the plan for the HLC Quality Initiative to key campus stakeholders (see above Commitment and Involvement of Key Individuals)
*   Developed SAIL course and volunteer program
*   Piloted course content with the Arizona Science, Engineering, and Mathematics Scholars
*   Recruited first class of SAIL Fellows for Fall 2016
*   Produced a video for use by SAIL Fellows and for presentation during New Start Orientation

<u>2016-2017; 2017-2018; 2018-2019</u>
*   Summer 2016 - develop pre- and post-surveys for faculty, SAIL Fellows course, and undergraduates; design and print book markers and flyers to inform the campus about the QI.
*   Administer surveys each semester to SAIL Fellows and student groups, once a year to faculty
*   Each spring/summer review surveys and evaluate the program outcomes

SAIL Fellows:
*   Early Fall - Identify student groups to be mentored by SAIL Fellows
*   Fall and Spring - teach SAIL course

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- Fall - develop rubrics for assessment of written assignments from the SAIL course learning outcomes
- Assess learning outcomes of SAIL Fellows from fall semester
- Recruit SAIL Fellows for next semester and next academic year
- Spring 2017 – develop messaging for Freshmen and Transfer Orientations

Undergraduates:
- Recruit Student Groups to be mentored by SAIL Fellows
- Two presentations by SAIL Fellows to four student groups during semester; collect pre- and post-survey data

Faculty:
- Recruit faculty interested in FLC on teaching practices for improved student learning
- Administer pre- (fall) and post- (spring) Teaching Practices Inventories (surveys)

Spring 2019
- Final evaluation of program outcomes and SAIL Fellow learning outcomes
- Submission of final report to HLC

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Institutional Contact for Quality Initiative Proposal

Include the name(s) of the primary contact(s) for the Quality Initiative.

Name and Title: **Gail D. Burd, Senior Vice Provost for Academic Affairs**

Phone: **520-626-4099**   *Email:* **gburd@email.arizona.edu**

Institution: **University of Arizona**

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