Suzanne & Richard Pieper Family Foundation
Endowed Chair for Servant Leadership

College of Engineering

UNIVERSITY OF WISCONSIN–MADISON

Annual Report
January 2014

CONTENTS

Servant Leader Chair for the UW-Madison College of Engineering

The Suzanne and Richard Pieper Family Foundation endowed a servant leader chair position at the UW-Madison College of Engineering in the fall of 2008. The mission of the chair is to "help prepare future leaders in their chosen fields to live lives of service to others by teaching and exemplifying character and moral values. Their examples and actions will lift up society, enrich organizations and communities, and have a positive effect on the least privileged."

The original chair at UW-Madison was Jeffrey Russell, former department chair for the Department of Civil and Environmental Engineering and current Vice Provost for Lifelong Learning, who held the position from Fall 2008 until July 2012. The current chair is Greg Harrington, who also serves as associate department chair for the Department of Civil and Environmental Engineering and is responsible for oversight of the department's undergraduate program. Greg also teaches and conducts research in the area of drinking water engineering, which has given him opportunities to serve local communities with their drinking water needs and to help students perform drinking water development projects in developing countries.

Greg works closely with Chris Carlson-Dakes and Alicia Hazen in implementation of programs funded by the servant leader chair. Chris is a faculty associate at UW-Madison and is responsible for engineering leadership programs and courses for the College of Engineering and other campus units. He has taken a significant role in the creation of a coordinated, campus-wide leadership initiative to give a more unified approach to leadership education across campus. Alicia is the director of the Student Leadership Center for the College of Engineering. The Student Leadership Center administers the annual Innovation Days Competition, assists with the College of Engineering's Dean's Leadership Course, and advises the 55+ registered engineering student organizations. With respect to student organizations, the Student Leadership Center strives to provide student leaders with the support and resources necessary to implement quality programs and events, by assisting with special event planning, budgeting and financial oversight, organizational development and more.

We are pleased to provide the Pieper Family Foundation with this annual report summarizing our activities in 2013 and our goals for 2014. The report is organized in accordance with the criteria set by the foundation to conduct its annual evaluation:

- Criterion 1 – Outcomes Baseline Data
- Criterion 2 – Baseline Acceptance of Servant Leadership
- Criterion 3 – Outcomes Measures Above Demographic Norms
- Criterion 4 – Outcomes Measures Phenomenally Above Demographic Norms
- Criterion 5 – Breakthrough Venture Promising New Beginnings in Acts of Goodness
- Criterion 6 – Carrying Out Mission of the Chair
- Criterion 7 – Servant Leader that Leads at an Element or Segment of our World

We look forward to receiving feedback from the foundation on our activities and to continuing our work into the coming year.

Criterion 1 – Outcomes Baseline Data

Typical Thinking that Goes into Evaluating the Criterion

"The servant leader chairs, with the exception of one, established this criteria before the chair was awarded, expressed in the form of a graph. In all cases this has been done through standard student surveys that the school was already conducting. From those surveys, questions were selected that represent the values, characteristics, actions, and involvement of someone representative of a servant leader. Institutions were asked to plot this going back five or six years as a baseline. The document established the database that will then be used in the future. The alumni portion of this is more elusive and each school has its own unique process. Whatever the benchmark that is established for the school, it's compared historically going back as many years as possible both for the school and their peers in other schools, which is then continued each year in the future. This is a one-time award."

Year 2013 Progress

As noted in previous reports, we continue to track data in the senior exit survey that is administered by Educational Benchmarking Inc (EBI). Our baseline data is from the 2007-08 academic year, the year prior to the one in which the college received the Pieper Family Foundation award. Our analysis of data since the baseline year is presented in our section on Criterion 3.

We acknowledge that the EBI survey measures important traits of leaders but does not directly address the attributes used to describe servant leaders. Thus, we worked with the University of Wisconsin Survey Center during 2013 to propose a new assessment survey that does this. This new survey is described in more detail in our section on Criterion 3.

Year 2014 Goals

Working with the input of the foundation, we hope to implement our new survey in the coming year. Please see more in our discussion of Criteria 3 and 4.

Criterion 2 – Baseline Acceptance of Servant Leadership

Typical Thinking that Goes into Evaluating the Criterion

"Clear indication that the school is functioning with the qualities of a servant leader; building community, listening, awareness, stewardship, conceptualization and foresight, commitment to the growth of people and empathy. Displayed in multiple examples of what the school is actually doing will validate this area. It is not unusual that the institutions that receive the Chair already

have these types of programs underway. If they are of substantive magnitude, both locally, community, nationally, and internationally, one could expect to receive this one-time award."

Year 2013 Progress

Since our initial report for Year 2008, we have continued to refine our approach, increase our participation, and expand our involvement across campus in servant-leadership activities. Most notably, we have advanced from learning about servant-leadership toward a deeper adoption and commitment to the servant-leader model by aligning it with the broader college and campus commitments to the Social Change Model of leadership development. This is evident in our integration of servant-leadership into offerings that were already present in 2008, by creating new curriculum and courses over the last four years, and by expanding our involvement at a campus level in the last two years. Specific examples will be further presented in our section on Criterion 6.

Year 2014 Goals

Please see our discussion of Criterion 6.

Criterion 3 – Outcomes Measures Above Demographic Norms

Typical Thinking that Goes into Evaluating the Criterion

Measuring each year what was established in Criterion 1. The baseline data graphs represented in Criterion 1 are updated, both the peer group and the school. If this is considered qualitative data in the minds of the foundation, they will receive an award. If the alumni data is missing, the award will not be made at maximum. If the norms in the institution are reasonably above average, one can expect a higher level award. If there are things missing, one can expect a lower level.

Year 2013 Progress

Senior Exit Survey

When receiving the Servant Leader Chair Endowment back in 2008-09, we used results from our senior exit survey to establish baseline performance for Criterion 1. In all of our annual reports since that time, we have continued to use results from that survey to provide longitudinal analysis for Criteria 3 and 4. Rather than provide all of the data from that survey for this report, we summarize and discuss the results of those questions that have relevance to leadership education. We also provide a comparison of our student perceptions with the perceptions of students at peer universities.

The senior exit survey is administered by Educational Benchmarking Inc (EBI) and is taken by seniors at numerous engineering programs across the nation. This allows us to compare the perceptions of our students with the perceptions of students at other engineering programs. For each academic year, we receive the mean response for engineering students from UW-Madison, for engineering students within participating Carnegie peer group programs (research intensive universities), and for engineering students from all programs that participate in the exit survey.

We use statistical analysis to determine:

- whether our students' perceptions are significantly better or worse than perceptions of students at our peer programs, and
- if our students' perceptions are improving or declining with time.

Because a change in educational practice will generally take four to six years to be observed in a senior exit survey, we evaluate the above items over four to six year time intervals.

We selected the following nine questions to analyze for this report:

1. Satisfaction with value derived from team experiences.
2. Satisfaction with value of engineering program student organization activities.
3. Satisfaction with leadership opportunities in engineering program extracurricular activities.
4. Satisfaction with your fellow students' ability to work in teams.
5. Satisfaction with your fellow students' level of camaraderie.
6. Degree that engineering education enhanced ability to function on multidisciplinary teams.
7. Degree that engineering education enhanced ability to understand ethical responsibilities.
8. Degree that engineering education enhanced ability to understand professional responsibilities.
9. Degree that engineering education enhanced ability to recognize need to engage in lifelong learning.

An example of the data is provided in Figure 1 for the third question in the above list: "satisfaction with leadership opportunities in engineering program extracurricular activities." This figure shows our students' satisfaction with leadership opportunities and compares their mean satisfaction level with the mean satisfaction level of students at other engineering institutions. The scale on the y-axis has a minimum value of 1 (very dissatisfied) and a maximum value of 7 (very satisfied). The remaining data are provided in Appendix A.

For the time period from 2006-07 through 2012-13, there was no statistically significant improvement or decline in UW-Madison student perceptions of leadership opportunities. However, for the same time period, statistical analysis showed that UW-Madison students had a significantly better perception of leadership opportunities at UW-Madison than did peer students of their own institutions.

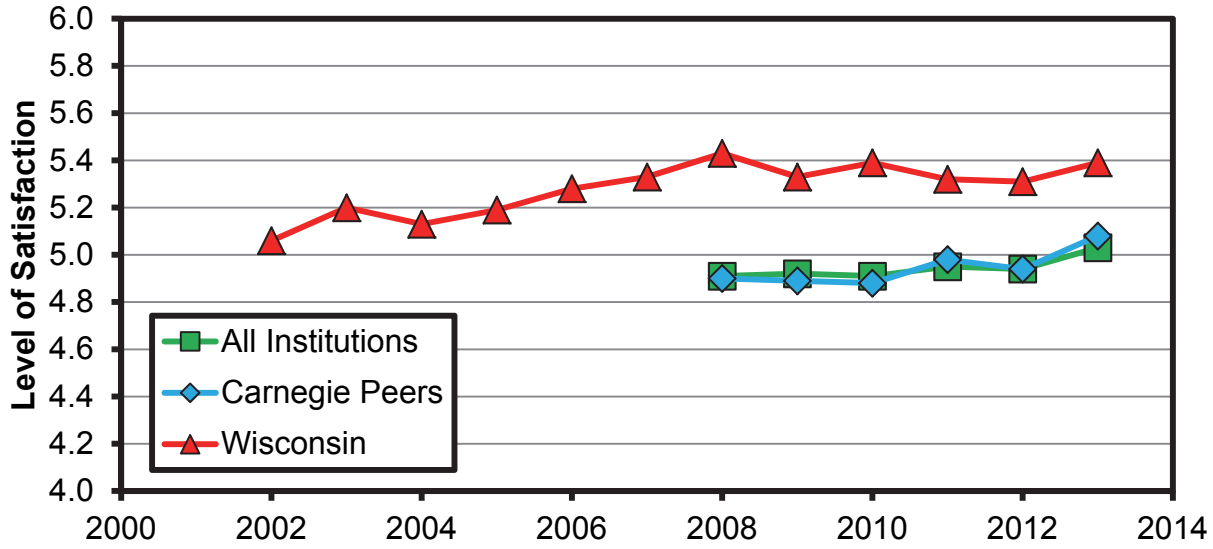

Figure 1. Mean level of satisfaction with leadership opportunities in engineering program extracurricular activities. The x-axis is organized on an academic year basis, so that 2012 refers to the 2011-12 academic year. The Pieper Servant-Leader Chair at the UW-Madison College of Engineering began in the 2008-09 academic year.

When considering the other questions in the same manner, we reached the following conclusions from the EBI survey:

- Our students had significantly better perceptions of the following items than students at EBI-participating Carnegie peer institutions and at all EBI-participating institutions:
  - Satisfaction with value derived from team experiences.
  - Satisfaction with value of engineering program student organization activities.
  - Satisfaction with leadership opportunities in engineering program extracurricular activities.
  - Degree that engineering education enhanced ability to recognize need to engage in lifelong learning.
- Student perceptions significantly improved for the following items:
  - Satisfaction with fellow students' ability to work in teams.
  - Satisfaction with fellow students' level of camaraderie.
  - Degree that engineering education enhanced ability to understand ethical responsibilities
  - Degree that engineering education enhanced ability to understand professional responsibilities
  - Degree that engineering education enhanced ability to recognize need to engage in lifelong learning.

National Survey of Student Engagement (NSSE)

As noted in our goals from last year's report, the EBI senior-exit survey is primarily oriented to measuring educational outcomes and does not ask other pertinent questions such as whether a student participated in service-oriented activities. The university periodically participates in the National Survey of Student Engagement (http://apir.wisc.edu/students-surveys.htm), which asks freshmen and seniors to answer questions that have been studied by our servant-leader peers at the Milwaukee School of Engineering and Lawrence College in their annual reports. Examples include whether students have participated or plan to participate in community service or volunteer work, and whether UW-Madison has contributed to students' ability to contribute to their community. UW-Madison last participated in this survey in 2011 and the Office of Academic Planning and Analysis helped us evaluate the data specifically for engineering students.

In evaluating the results from the 2011 survey, we learned the following about UW-Madison ***seniors***:

- 59% of engineering students and 68% of the general student body said that they "tried to better understand someone else's views by imagining how an issue looks to them." These were improvements over the scores of 53% and 62%, respectively, in 2008.
- 10% of engineering students and 14% of the general student body said that they "participated in a community-based project as part of a regular course." These numbers were not significantly different from those reported in 2008.
- 78% of engineering students and 83% of the general student body said that they had done or planned to do "community service or volunteer work." These numbers were not significantly different from those reported in 2008.
- 87% of engineering students and 78% of the general student body said that the university experience contributed "quite a bit or very much towards working effectively with others." These numbers were not significantly different from those reported in 2008.
- 64% of engineering students and 62% of the general student body said that the university experience contributed "quite a bit or very much towards developing a personal code of values and ethics." There was no significant change from 2008 for the engineering students, but the general student body did report a significant improvement from 56% in 2008.
- 51% of engineering students and 56% of the general student body said that the university experience contributed "quite a bit or very much towards contributing towards the welfare of your community." There was no significant change from 2008 for the engineering students, but the general student body did report a significant improvement from 48% in 2008.

We plan to continue reporting progress on the above items as the university participates in this survey.

Work with University of Wisconsin Survey Center

Verbal feedback received from the foundation after last year's report suggested that the above surveys were not actually measuring the attributes of servant leadership. In response to this, we worked with the University of Wisconsin Survey Center (UWSC) to create a survey that directly addressed these attributes. To develop the survey, we looked at a variety of publications on these attributes and settled on one published by the University of Nebraska as the one which best contributed towards crafting survey questions. This publication is included in the report as Appendix B. The current draft of questions we created with the help of the UWSC is shown in Appendix C. This draft was completed in December 2013 and we are seeking input from the foundation as noted in our Year 2014 goals.

Year 2014 Goals

We are keenly interested in collecting assessment data that goes beyond the data collected from the EBI and NSSE surveys, and we wish to begin collecting this data in Year 2014. As noted in the previous section, we have drafted a survey which more specifically addresses the attributes of servant leadership and have presented this in Appendix C. We wish to receive feedback from the foundation board on our proposed survey – we are open to suggestions on how we have phrased the questions and whether this survey meets the concerns expressed by the foundation a year ago. Once we have finalized the survey based on feedback from the foundation, we plan to pilot test the survey with students who have taken our freshman leadership course. We plan to use what we learn from the pilot test to make modifications for implementation to all students in the College of Engineering. If the foundation sees value in surveying alumni at response rates on the order of 10%, we may also ask our alumni to complete the survey. Please note that our accreditation agency – ABET – is no longer expecting engineering programs to survey alumni because the data are not considered representative of the entire alumni base and the data is generally considered to be of limited value. Finally, if the survey looks successful, we will be happy to share it with our partners in servant leadership at Lawrence, MSOE, and Ripon.

Criterion 4 – Outcomes Measures Phenomenally Above Demographic Norms

Typical Thinking that Goes into Evaluating the Criterion

If Criterion 3 is profoundly above the norms and a result of the program indicates that they are continuing to track in that way, you can expect awards at this level. For example, on a scale of 1-10, a typical peer institution might be a 4 or 5. A typical institution that would have been considered for a chair might be a 6. Phenomenal performance might be an 8 or a 9. We would expect eventually most of the institutions will be tracking at a 9, which would tend to maximize this award.

Year 2013 Progress

The primary distinction between Criteria 3 and 4 is whether outcomes measures are above demographic norms or phenomenally above demographic norms. In our section on Criterion 3, we described how our students perceive our college relative to how other students perceive their colleges. While we have shown that our students perceive items such as leadership opportunities to be above demographic norms (Criterion 3), we defer to the foundation's judgment on whether these perceptions are phenomenally above demographic norms (Criterion 4). As an example, the database used for Criterion 3 is based on a scale of 1 to 7. Converting this to a scale of 1 to 10, our Year 2012-13 scores were in the range of 7.4 to 8.2, an improvement above our Year 2007-08 scores of 7.1 to 8.0. For comparison, our peer institutions' students had perceptions ranging from 6.8 to 8.1 in the baseline year and from 6.9 to 8.0 in Year 2012-13. As noted in our section on Criterion 3, we had a statistically significant improvement in scores for ethical and professional responsibility from the baseline year to the Year 2012-13. On the 1 to 10 scale, these scores improved from 7.1 to 7.4 and from 7.5 to 7.7, respectively. While our scores are certainly at or near the level of 8 noted by the foundation for Criterion 4, the peer institution averages of 6.9 to 8.0 are significantly higher than the 4 to 5 range noted for Criterion 4.

Year 2014 Goals

As noted above, the primary distinction between Criteria 3 and 4 is whether outcomes measures are above demographic norms or phenomenally above demographic norms. Thus, our goals for Criterion 4 are similar to those already stated for Criterion 3. As noted in Criterion 3, we look forward to the Foundation's thoughts on the use of additional metrics for these two criteria.

Criterion 5 – Breakthrough Venture Promising New Beginnings in Acts of Goodness

Typical Thinking that Goes into Evaluating the Criterion

We are attempting to encourage the institution, its faculty and student body to think beyond their envelope, searching for new ways of networking and collaboration, whole new approaches to enrichment and effectiveness. This is not about ideas, it is about validated actions. If those actions include the institution, the community it lives in, the world it lives in nationally and internationally, and they are phenomenally above it or have exhibited a breakthrough and others are following, this would be a max award. If they have something that is really promising and covers all those areas, it might be on the lower end of the scale. An activity that has some promise will likely receive a rating of "1" while an activity that is transformational or systemic will likely receive a rating of "3." An activity that is both transformational and systemic – the ideal synergistic nurturing – may receive a rating of "5."

Year 2013 Progress

In 2013, we continued to advance our work beyond networking, discussions and models toward validated actions by individuals, the institution and the broader community. The two primary accomplishments we report below are: 1) our Engineering Leadership Course expanded partnerships with sustainability and environmental stewardship projects, and 2) early implementation of the Campus-Wide Coordinated Leadership Initiative framework. We also report on our initiative to send students to the National Center for Student Leadership Conference and on our creation of an annual student award for servant leadership.

Engineering Leadership Course

One of the primary accomplishments reported in last year's report was the Engineering Leadership course. The course was offered both semesters to reach a total of 70 incoming first year students engaged in a community service project focused on sustainability initiatives. We established partnerships with WE Badger Volunteers, a campus program designed to engage students in leadership of service projects related to sustainability and environmental stewardship (http://www.morgridge.wisc.edu/programs/WEBV/WEBadgerVolunteer.html). Projects included installation of solar powered lights in a dark portion of a campus garden, refurbishing used bikes for low income children, and a feasibility study for a green roof for a local elementary school.

A few representative examples of the impact the course had on students are listed below. These are excerpts from student final reports that reflect on a particularly memorable learning event for them.

> *The Intro to Engineering course taught me many valuable lessons and applications that I can apply to my career in the future… Of all the leadership models that we discussed in class, the servant-leadership model resonates with me. I'm a very caring person and this model exemplifies how I want to give back to my community with my chemical engineering degree.*
>
> *(First year student, final course reflection)*

> *With the knowledge I gained from this video, some of which honestly flew right over my head, I have become more motivated than ever to make a change in the world and to embrace the new technologies that are currently being developed… Overall, this documentary really opened my eyes to the modern day advancements in technology and how one person can innovate and change the course of humanity for the future.*
>
> *(First year student reflecting on the documentary, "Transcendent Man")*

> *The main thing I learned from my participation is that it is possible for a group of people to change the world. After seeing how our effort and experience came to life through these*

kids, I feel like I can change the world. I will use what I learned from RYLA to continue to show people their own gifts and not be afraid to try and change the world.

(First year student reflecting on his out of class assignment at a Rotary Club event)

This course helped me to realize that it is the duty of engineers to create a better world. I believe that I can help create that world through the discipline of nuclear engineering. I hope to use my leadership abilities learned in this course and bring them to the society of nuclear engineering… I think that this course helped me more than any of the other classes I am currently taking because it applied what I am studying to the real world and gave me a glimpse into the future of the world and of my own life.

(First year student, final course reflection)

Further information about the course is included in the following appendices:

- Appendix D – Course syllabus
- Appendix E – Paper published in the conference proceedings for the American Society of Engineering (ASEE) in June

Coordinated Leadership Initiative

On a broader scale, we have expanded and deepened our role with the campus-wide Coordinated Leadership Initiative (CLI). The CLI is a cross-campus effort sponsored by the Provost and Dean of Students to align and connect existing campus leadership development opportunities, shape and inform the development of new opportunities, and allow for a more formal and intentional analysis of campus needs to highlight gaps and unnecessary redundancies.

In 2012, we were focused on developing a Leadership Framework that was inclusive of the broad concepts of leadership across campus and grounded in the concept of social change and service. We worked with hundreds of faculty, staff, and students individually, in small groups, and in large group settings to solicit input and feedback on the framework. A draft of the framework was realeased in July 2013 (Appendix F)

In 2013, we moved from ideas and discussions to actions and implementation in many units across campus. We established a core planning group that consists of 9 members, each with a functional role (see list below).

- Department/unit champions* (coordinates and communicates with campus leadership)
- Early adopter coordinator* (coordinates with early adopters and supports implementation)
- Campus engagement (coordinates campus activities, workshops, outreach)
- Program assessment (leads assessment efforts of overall program)
- Resource management* (solicits and coordinates mounting resources)
- Framework revisions (incorporates revisions and edits to framework for future versions)
- Website designer* (designs and maintains website – under construction)

- At-large member (2)* (contributes and supports work as needed)

As noted by (*) above, five of these core planning members are also part of the Servant-Leadership monthly discussion group. The central role these individuals have played in the CLI has helped to solidify the principles of Servant-Leadership into the campus-wide initiative.

A few representative examples of the Early Adopters are summarized below. These are but a few of the growing number of curricular and extra-curricular actions taking place across campus that will have a broad and deep institutional impact over time.

Badger Step Up Program. This program is housed in the Center for Leadership and Involvement and is designed to train students to "step up" when/if they see someone in danger (academic, physical, or otherwise). They have taken the competencies of the CLI framework and reworked their training materials for their training sessions this spring that will include approximately 450 students across campus.

LGBT Resource Center. The director of Queer Emerging Leaders Program (QELP), a program designed to train student peer leaders, has taken the CLI framework as a basis for the redesign of their training curriculum. They will pilot the modifications this spring with their new cohort of student leaders. These peer leaders have connections with dozens of other students across campus.

Engineering Leadership Course. The course described above will be retooled during the spring to more explicitly include the CLI framework and Servant-Leadership principles in future offerings starting in fall 2014. The course enrolled 70 students this year with their projects having a potential impact for hundreds of university and community members.

Departmental Curriculum Committees. CLI staff have been invited to present at two department meetings as they consider how to integrate leadership development more explicitly into their core curriculum. The discussions have included creating new courses, integrating a leadership development module into capstone courses, alignment with internship opportunities, and better overall integration of leadership into their entire curriculum. As these plans evolve and become embedded in departmental curriculum, we will begin to see institutional impacts beyond isolated individual courses.

Finally, the CLI has been invited to present at multiple meetings and conferences on campus. To date, we have had formal presentations with a total audience of approximately 250 people from a wide spectrum across campus. In 2014, we are already slated for a number of other presentations and have proposals being reviewed for three additional conferences.

National Center for Student Leadership Conference

We have a tradition of sending several of our student leaders to a national level student leadership conference on an annual basis. This year, we helped fund the attendance of four

College of Engineering students at the National Center for Student Leadership Fall Conference in New Orleans. Each student was asked to write a reflection on their trip and these reflections are provided in Appendix G.

Student Award for Servant Leadership

In the fall semester, we developed an award to encourage students "to engage in service-learning or community outreach projects aligned with The Pieper Family Foundation belief that human goodness is not simply innate; it requires action and service to others; and that character is inspired and facilitated in cultures, organizations, and families by and through the example of enlightened leadership." The award was advertised to students near the end of the fall semester (see Appendix H) and student proposals are due on January 24. We look forward to reporting on the funded projects in our next annual report.

Year 2014 Goals

For 2014, we will continue the two efforts listed above to further advance and institutionalize the work done to date. We will have a CLI website go live early in 2014 and will have early assessment data to report next year on the impact of the CLI across campus. We will also advance discussion with the Engineering Deans who have expressed interest in having a more comprehensive approach to leadership development in the college. It remains to be seen where these conversations will lead, but our university has recently undergone many leadership changes at all levels and we are well poised to build on past successes to advance our work. Chris Carlson-Dakes and Greg Harrington expect to pilot-test a leadership module to be incorporated into the civil engineering capstone design course in the spring semester. If successful, we will advertise it to other departments in an attempt to broaden our reach to all students in the College of Engineering.

Criterion 6 – Carrying Out Mission of the Chair

Typical Thinking that Goes into Evaluating the Criterion

This is a follow-up of Criterion 2 and is an annual consideration. Is there a broad range of deliverable areas with some reasonable quantity of people involved carrying out the mission of the chair as agreed to and accepted by the institution?

Year 2013 Progress

This year, we solidified our work within the College of Engineering and deepened our networks of partners across campus. The major points of involvement include:

1. **Campus Coordinated Leadership Initiative.** Dr. Carlson-Dakes has stepped up his role as a co-leader of the campus-wide Coordinated Leadership Initiative (CLI). His specific role is to coordinate the Early Adopters who are taking the CLI and finding new and creative ways to move from idea to action. See Criteria #5 above for further details.

2. **Campus Servant-Leadership Working Group.** Drs. Harrington and Carlson-Dakes are members of this group that meet monthly to read articles, discuss relevant topics, and host/sponsor campus-wide activities related to Servant-Leadership.

3. **Chancellor's Scholars Program.** Drs. Harrington and Carlson-Dakes continue to serve as Chancellor's Scholar mentors designed to increase educational opportunities for academically talented underrepresented minority students. More information on this program may be found at http://www.provost.wisc.edu/csp.htm.

4. **Campus Leadership Certificate Reviewer.** Dr. Carlson-Dakes is a reviewer and mentor for the student portfolios submitted as part of the campus Leadership Certificate (http://cfli.wisc.edu/leadership_certificate.htm). The Leadership Certificate is undergoing significant restructuring to reflect the work done by the CLI leadership framework.

5. **College of Engineering Student Leadership Center.** We continue to work with Alicia Hazen, Director of the Engineering Student Leadership Center (http://slc.engr.wisc.edu/) to align our efforts across campus. This includes co-sponsorship of workshops and activities, and close partnerships with SLC activities and the Engineering Leadership course. A full listing of the SLC activities and participation levels is provided in Appendix I.

Year 2014 Goals

We have had significant turnover at top leadership positions across campus, and leadership development is a high priority for many of the new leaders. Our involvement in the monthly Servant-Leadership group and CLI has given us a seat at the table for campus-wide efforts that can facilitate deeper integration into the College of Engineering work. In addition to the continuation of all work listed above, in 2014, we plan to:

1. Support the implementation of approximately ten "Early Adopter" CLI framework projects and gather preliminary data on local and institutional impact.
2. Conduct a survey of all engineering students to get baseline data on their understandings and ability to implement Servant-Leadership principles.
3. Develop a leadership development course module and pilot it in the Civil Engineering capstone course. This will serve as a pilot for broader use in other departments.

Criterion 7 – Servant Leader that Leads at an Element or Segment of our World

Typical Thinking that Goes into Evaluating the Criterion

Is there evidence that a professor in their nurturing locally, community, nation and world is consistently contributing or leading service model versus the power model? Are there multiple students participating in that level? Such a critical mass would be considered promising and obviously if such a leader or professor nurtures someone else who moves into that level, you could expect the maximum award. Examples are Nelson Mandela, Mother Teresa, and Mahatma Gandhi.

Year 2013 Progress

As noted in our Year 2011 report, we cannot point to an individual leader who is the caliber of Gandhi, Mandela, or Mother Teresa. However, we do note that there is a pervasive desire among our student body to serve the world in positive ways that follow the vision set forth by such leaders. As an example, our university "consistently places on the Peace Corps' annual list of schools that produce the most alumni volunteers" (http://peacecorps.wisc.edu/). Since the creation of the Peace Corps in 1961, 3000 UW-Madison alumni have served in the Peace Corps and this is second only to the University of California – Berkeley. In some ways, this desire for positive community service is ensured by UW-Madison's holistic admissions process, in which admissions counselors look for "sustained involvement in activities in or out of school, leadership, community involvements" and other items in addition to standardized test scores and high school grade-point averages (http://www.admissions.wisc.edu/appTipSheet.php). For this year's incoming freshman class, 58 percent were involved in school or community service during high school (http://www.news.wisc.edu/22186). In the 2010-11 academic year, 73 percent of UW-Madison seniors reported participating in community service or volunteer work while attending UW-Madison (http://apir.wisc.edu/studentsurveys/NSSE_2011_Final_report.pdf).

Within the UW-Madison College of Engineering, active service-oriented student organizations include Engineers Without Borders (http://ewbuw.org/) and Engineering World Health (http://ewh.slc.engr.wisc.edu/index.html). Even the more traditional discipline-related organizations and honor societies are involved in community-level service activities (http://slc.engr.wisc.edu/organizations.html). Examples of service projects may be found by clicking on the links of some student organizations.

An example engineering student who works with such organizations is Drew Birrenkott, a biomedical engineering student who was the recipient of a Rhodes Scholarship in Fall 2013. He hopes to pursue a career in global health and international development after his Rhodes Scholar work in Oxford is complete. As a member of Engineers Without Borders, he has participated in service projects in Kenya and is leading a service project in Tanzania. For more on Drew, please click on:

http://www.news.wisc.edu/22340

and on

http://host.madison.com/daily-cardinal/uw-madison-senior-drew-birrenkott-elated-to-win-rhodes-scholarship/article_650e8368-559d-11e3-a730-001a4bcf887a.html.

Year 2014 Goals

We hope to use the Servant Leader Chair endowment to continue encouraging engineering students to participate in activities that serve underprivileged communities both locally and in developing countries. We believe our award for leadership of community-oriented service projects will help provide this encouragement in the coming year.

Appendix A – Senior Exit Survey Data for Questions Relevant to Leadership Education

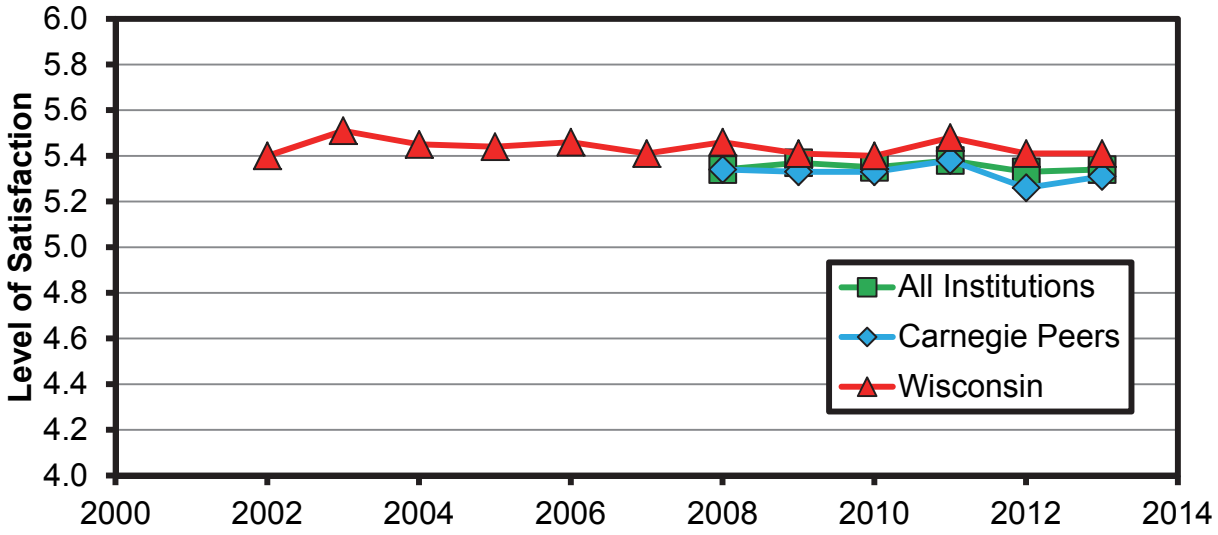

Figure A1. Mean level of satisfaction with value derived from team experiences. The x-axis is organized on an academic year basis, so that 2012 refers to the 2011-12 academic year. The Pieper Servant-Leader Chair at the UW-Madison College of Engineering began in the 2008-09 academic year. The scale on the y-axis has a minimum value of 1 (very dissatisfied) and a maximum value of 7 (very satisfied). For the most recent six years, the difference between Wisconsin and peer engineering institutions is statistically significant at a 95% confidence level. For the same period, there was no significant improvement or decline in student perception at Wisconsin.

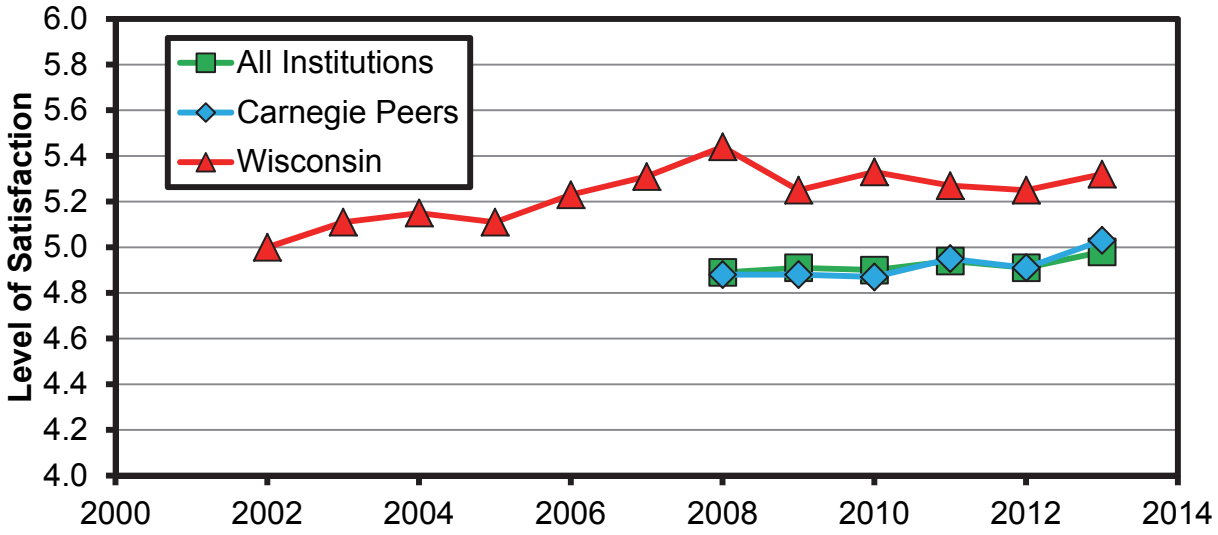

Figure A2. Mean level of satisfaction with value of engineering student organization activities. The x-axis is organized on an academic year basis, so that 2012 refers to the 2011-12 academic year. The Pieper Servant-Leader Chair at the UW-Madison College of Engineering began in the 2008-09 academic year. The scale on the y-axis has a minimum value of 1 (very dissatisfied) and a maximum value of 7 (very satisfied). For the most recent six years, the difference between Wisconsin and peer engineering institutions is statistically significant at a 95% confidence level. For the same period, there was no significant improvement or decline in student perception at Wisconsin.

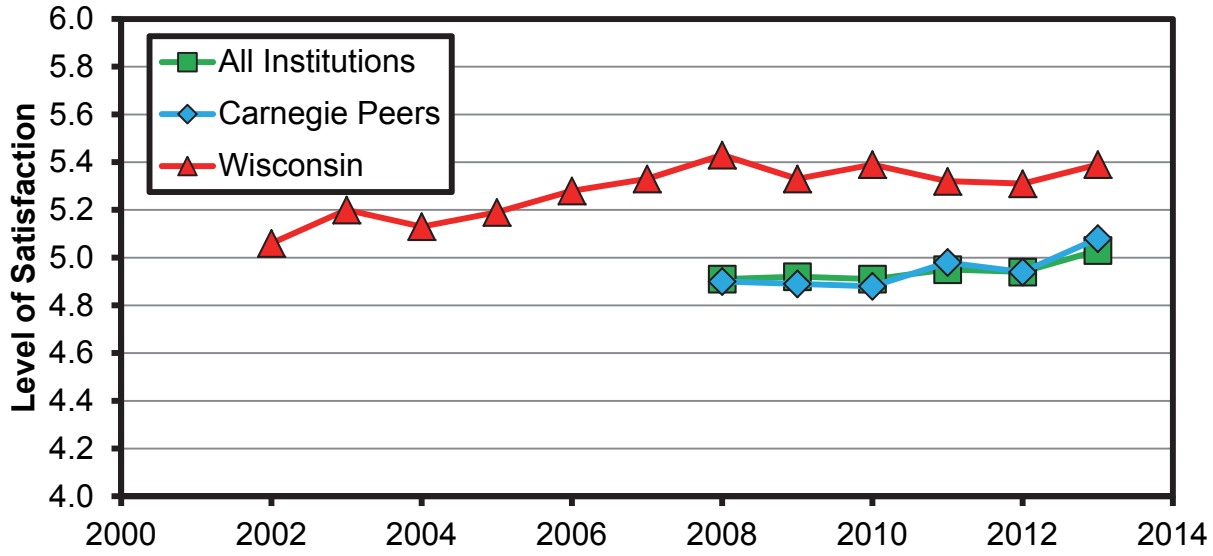

Figure A3. Mean level of satisfaction with leadership opportunities in engineering student organization activities. The x-axis is organized on an academic year basis, so that 2012 refers to the 2011-12 academic year. The Pieper Servant-Leader Chair at the UW-Madison College of Engineering began in the 2008-09 academic year. The scale on the y-axis has a minimum value of 1 (very dissatisfied) and a maximum value of 7 (very satisfied). For the most recent six years, the difference between Wisconsin and peer engineering institutions is statistically significant at a 95% confidence level. For the same period, there was no significant improvement or decline in student perception at Wisconsin.

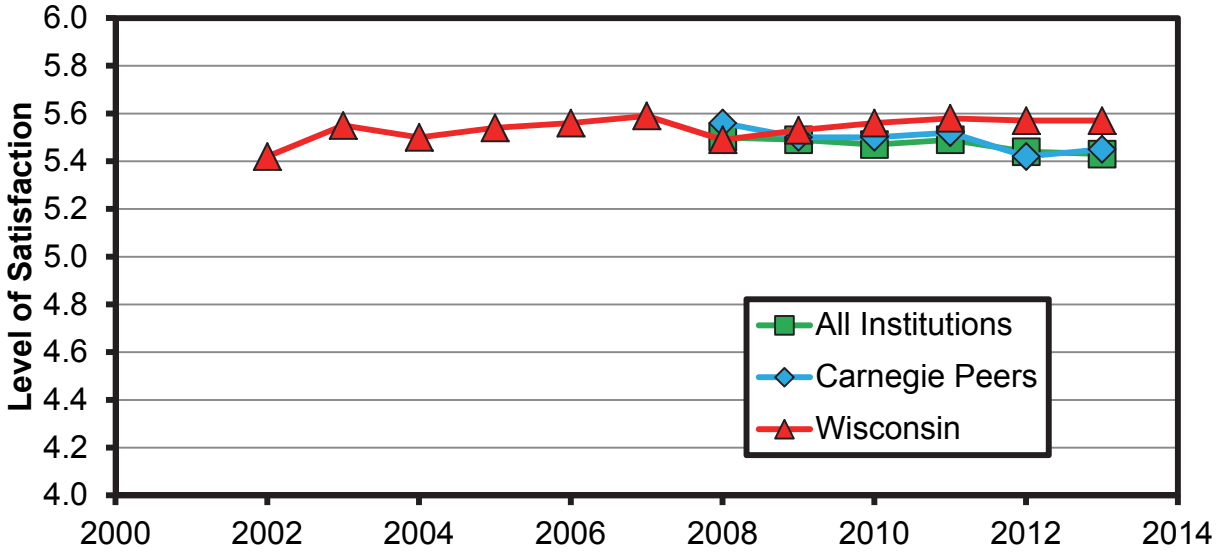

Figure A4. Mean level of satisfaction with fellow students' ability to work in teams. The x-axis is organized on an academic year basis, so that 2012 refers to the 2011-12 academic year. The Pieper Servant-Leader Chair at the UW-Madison College of Engineering began in the 2008-09 academic year. The scale on the y-axis has a minimum value of 1 (very dissatisfied) and a maximum value of 7 (very satisfied). For the most recent six years, the difference between Wisconsin and peer institutions was not statistically significant at a 95% confidence level. For the same period, there was a small but statistically significant improvement in student perception at Wisconsin.

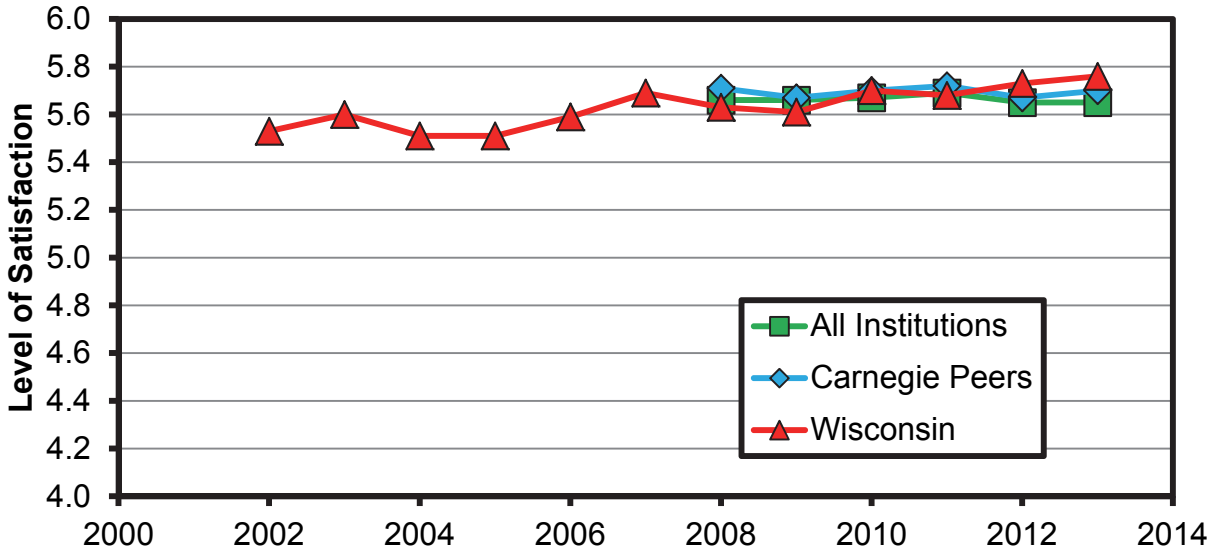

Figure A5. Mean level of satisfaction with fellow students' level of camaraderie. The x-axis is organized on an academic year basis, so that 2012 refers to the 2011-12 academic year. The Pieper Servant-Leader Chair at the UW-Madison College of Engineering began in the 2008-09 academic year. The scale on the y-axis has a minimum value of 1 (very dissatisfied) and a maximum value of 7 (very satisfied). For the most recent six years, the difference between Wisconsin and peer institutions was not statistically significant at a 95% confidence level. For the same period, there was a small but statistically significant improvement in student perception at Wisconsin.

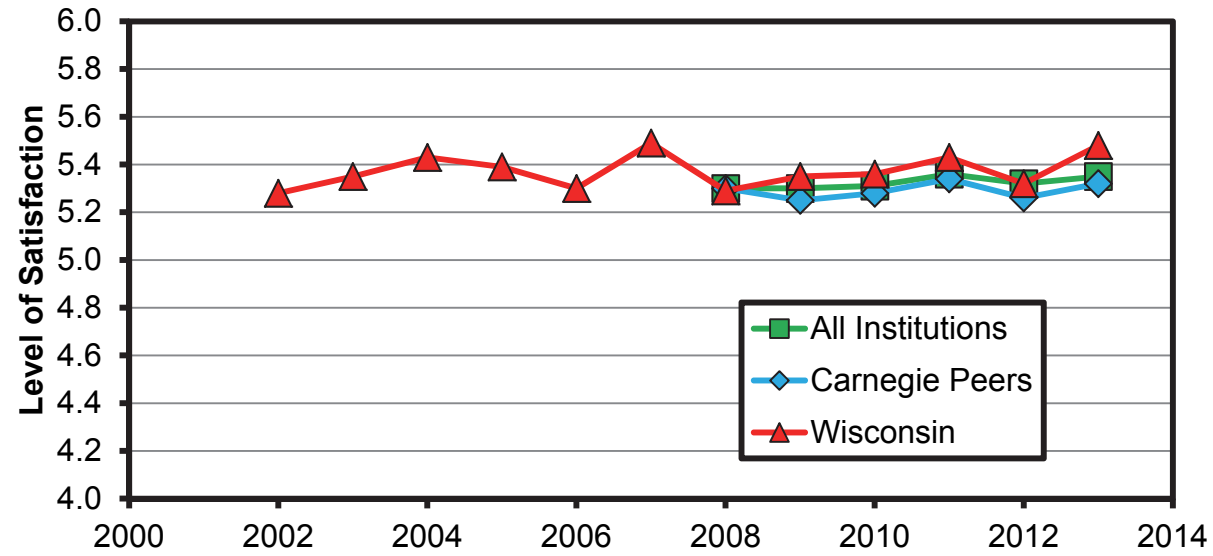

Figure A6. Mean level of satisfaction with how engineering education enhanced ability to function on multidisciplinary teams. The x-axis is organized on an academic year basis, so that 2012 refers to the 2011-12 academic year. The Pieper Servant-Leader Chair at the UW-Madison College of Engineering began in the 2008-09 academic year. The scale on the y-axis has a minimum value of 1 (very dissatisfied) and a maximum value of 7 (very satisfied). For the most recent six years, the difference between Wisconsin and peer institutions was not statistically significant at a 95% confidence level. For the same period, there was no significant improvement or decline in student perception at Wisconsin.

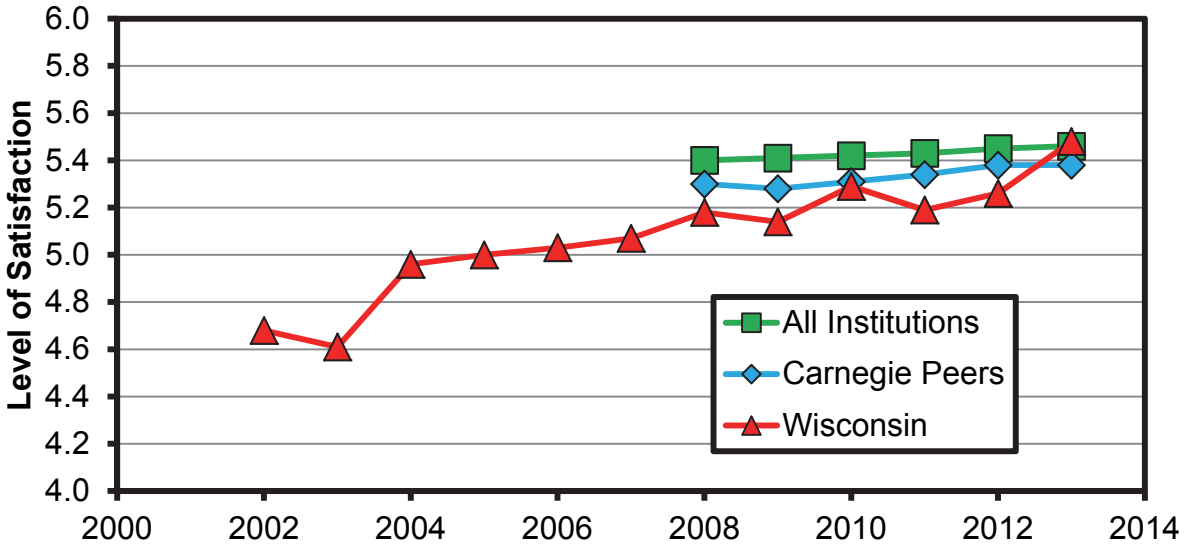

Figure A7. Mean level of satisfaction with how engineering education enhanced ability to understand ethical responsibilities. The x-axis is organized on an academic year basis, so that 2012 refers to the 2011-12 academic year. The Pieper Servant-Leader Chair at the UW-Madison College of Engineering began in the 2008-09 academic year. The scale on the y-axis has a minimum value of 1 (very dissatisfied) and a maximum value of 7 (very satisfied). For the most recent six years, the difference between Wisconsin and peer institutions was not statistically significant at a 95% confidence level. For the same period, there was a substantive and statistically significant improvement in student perception at Wisconsin.

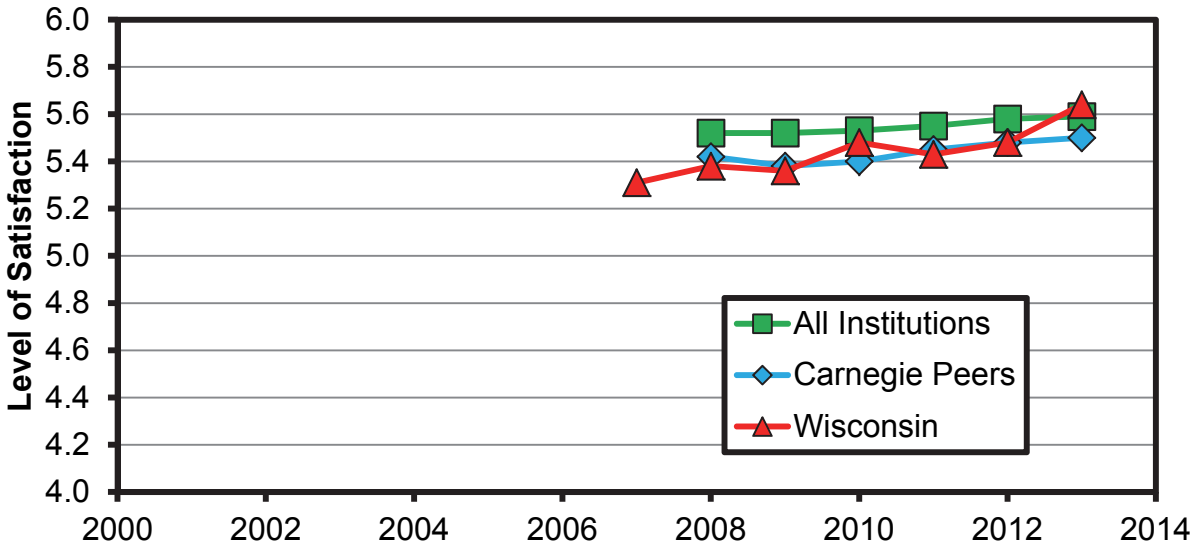

Figure A8. Mean level of satisfaction with how engineering education enhanced ability to understand professional responsibilities. The x-axis is organized on an academic year basis, so that 2012 refers to the 2011-12 academic year. The Pieper Servant-Leader Chair at the UW-Madison College of Engineering began in the 2008-09 academic year. The scale on the y-axis has a minimum value of 1 (very dissatisfied) and a maximum value of 7 (very satisfied). For the most recent six years, the difference between Wisconsin and peer institutions was not statistically significant at a 95% confidence level. For the same period, there was a substantive and statistically significant improvement in student perception at Wisconsin.

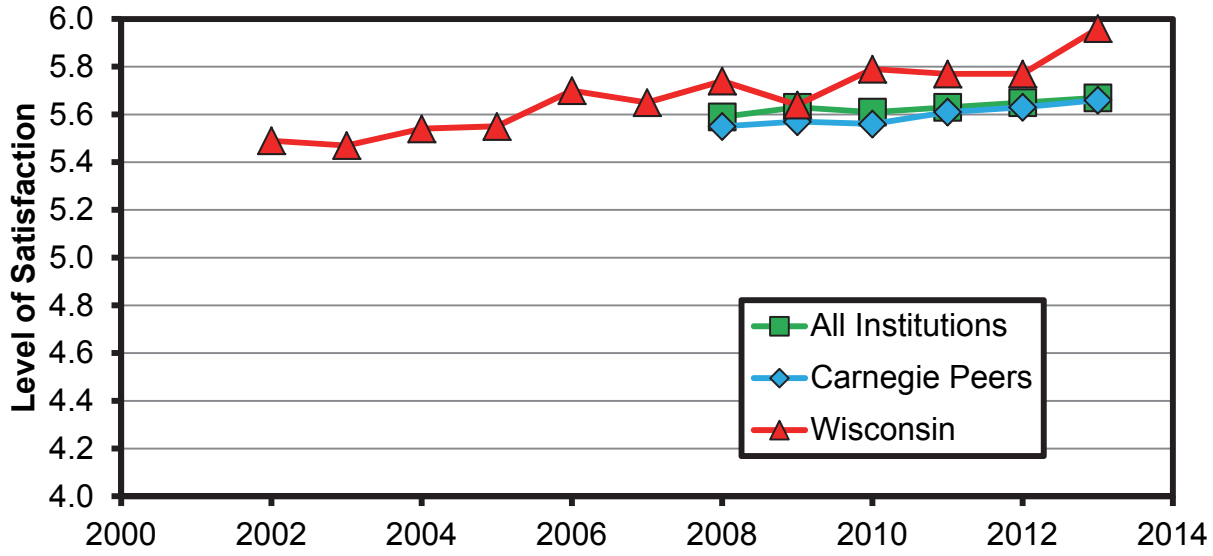

Figure A9. Mean level of satisfaction with how engineering education enhanced ability to recognize need to engage in lifelong learning. The x-axis is organized on an academic year basis, so that 2012 refers to the 2011-12 academic year. The Pieper Servant-Leader Chair at the UW-Madison College of Engineering began in the 2008-09 academic year. The scale on the y-axis has a minimum value of 1 (very dissatisfied) and a maximum value of 7 (very satisfied). For the most recent six years, the difference between Wisconsin and peer engineering institutions is statistically significant at a 95% confidence level. For the same period, there was a substantive and statistically significant improvement in student perception at Wisconsin.

Appendix B
Becoming a Servant Leader: Do You Have What It Takes?
John E. Barbuto and Daniel W. Wheeler
University of Nebraska – Lincoln

IANR NebGuide

University of Nebraska–Lincoln Extension, Institute of Agriculture and Natural Resources

Know how. Know now.

University of Nebraska Lincoln

G1481
(Revised October 2007)

Becoming a Servant Leader: Do You Have What It Takes?

John E. Barbuto Jr., Associate Professor, Agricultural Leadership, Education and Communication
Daniel W. Wheeler, Extension Leadership Development Specialist

This NebGuide introduces servant leadership; the 11 dimensions that typically characterize a servant leader, including inherent traits and learned skills; and several practical ways to develop skills necessary for this leadership style.

Servant leadership is one of the most talked about yet least critically examined leadership philosophies. While many people closely identify with this leadership approach, an equal number are cynical and question whether expectations of leaders are realistic. This NebGuide provides an introduction to servant leadership, based on the works of Robert Greenleaf and Larry Spears, and focuses on the 11 characteristics that identify a servant leader.

Of these 11 characteristics, some are inherent attributes or beliefs that servant leaders need to hold. Many of these are behavioral in nature and describe what servant leaders do. However, some of these characteristics are developed skills. The ultimate servant leader has developed all 11 characteristics and is continuously improving. These characteristics include *having a calling, listening, empathy, healing, awareness, persuasion, conceptualization, foresight, stewardship, growth and building community*.

The next section provides a series of questions to help you determine if you are a servant leader. Following it are descriptions of each of the 11 characteristics and some practical concerns related to servant leadership development.

Are You A Servant Leader?

Place a check in the box of each of the following questions that you would answer with a "yes." If you can check more than seven of these, you may be well on your way to becoming a servant leader.

- ☐ Do people believe that you are willing to sacrifice your own self-interest for the good of the group?
- ☐ Do people believe that you want to hear their ideas and will value them?
- ☐ Do people believe that you will understand what is happening in their lives and how it affects them?
- ☐ Do people come to you when the chips are down or when something traumatic has happened in their lives?
- ☐ Do others believe that you have a strong awareness for what is going on?
- ☐ Do others follow your requests because they want to as opposed to because they "have to?"
- ☐ Do others communicate their ideas and vision for the organization when you are around?
- ☐ Do others have confidence in your ability to anticipate the future and its consequences?
- ☐ Do others believe you are preparing the organization to make a positive difference in the world?
- ☐ Do people believe that you are committed to helping them develop and grow?
- ☐ Do people feel a strong sense of community in the organization that you lead?

Characteristics of Servant Leadership

Calling

Do people believe that you are willing to sacrifice self-interest for the good of the group? Servant leaders have a natural desire to serve others. This notion of having a calling to serve is deeply rooted and value-based. Servant leaders have a desire to make a difference for other people and will pursue opportunities to impact others' lives — never for their own gain. A servant leader is willing to sacrifice self-interests for the sake of others. This characteristic cannot be taught, so unless a person has a natural calling to serve, servant leadership is not a realistic or compatible style.

Listening

Do people believe that you want to hear their ideas and will value them? Servant leaders are excellent listeners. They are receptive and genuinely interested in the views and input of others. People instinctively understand that servant leaders want them to share their ideas and that these ideas will be

valued. Listening is a skill that can be learned and is essential for those who desire to be a servant leader. Without good listening skills, many of the other characteristics described in this publication cannot be achieved.

Empathy

Do people believe that you will understand what is happening in their lives and how it affects them? Servant leaders can "walk in others' shoes." They understand and empathize with others' circumstances and problems. Leaders who are empathetic have earned confidence from others by understanding whatever situation is being faced. This characteristic is a skill that comes more naturally to some people than others, but it is pertinent for all who aspire to be a servant leader.

Healing

Do people come to you when the chips are down or when something traumatic has happened in their lives? Servant leaders are people who others want to approach when something traumatic has happened. They have developed a remarkable appreciation for the emotional health and spirit of others. They are good at facilitating the healing process and others gravitate toward them when emotional needs arise. The ability to create an environment that encourages emotional mending is crucial for those who want to become great servant leaders.

Awareness

Do others believe you have a strong awareness for what is going on? Servant leaders have a keen sense for what is happening around them. They are always looking for cues from the environment to inform their opinions and decisions. They know what's going on and will rarely be fooled by appearances. This skill is crucial to the development of servant leaders.

Persuasion

Do others follow your requests because they want to or because they believe they "have to?" Servant leaders seek to convince others to do things rather than relying on formal authority. They are naturally very persuasive and offer compelling reasons when they make requests. They never force others to do things. This ability is important for servant leaders to develop.

Conceptualization

Do others communicate their ideas and vision for the organization when you are around? Servant leaders nurture the ability to conceptualize the world, events and possibilities. They encourage others to dream great dreams and avoid getting bogged down by day-to-day realities and operations. They foster an environment that encourages thinking big and valuing the creative process. Those who want to be great servant leaders must develop an environment that fosters conceptualization.

Foresight

Do others have confidence in your ability to anticipate the future and its consequences? Servant leaders have an uncanny ability to anticipate future events. This is not to say they are psychic or always right, but they are adept at picking up patterns in the environment and seeing what the future will bring. They usually anticipate consequences of decisions with great accuracy. Those who want to be successful servant leaders need to have and develop this foresight.

Stewardship

Do others believe you are preparing the organization to make a positive difference in the world? Servant leaders often are characterized by a strong sense of stewardship. Stewardship stems from medieval times when a steward would be assigned to hone the skills and development of the young prince to prepare him for his reign. The kingdom relied on the steward to teach and hold the prince in trust so that he would be a successful king. Today the term stewardship involves many of the same things. A steward in an organization is responsible for preparing it for its destiny, usually for the betterment of society. When we describe a leader as having a strong sense of stewardship, we refer to a desire to prepare the organization to contribute to the greater good of society — not unlike preparing the prince to serve the greater good of the kingdom. Making a positive difference in the future is characteristic of the stewardship mentality. Those who desire to be excellent servant leaders need to have a natural sense of stewardship. If you don't naturally have a stewardship perspective, it is unlikely that the servant leadership style will come naturally to you.

Growth

Do people believe that you are committed to helping them develop and grow? Servant leaders have a strong commitment to the growth of people. They believe that all people have something to offer beyond their tangible contributions. Servant leaders work hard to help people in a number of ways —spiritually, professionally, personally. Those who want to be great servant leaders need to connect to others' developmental needs and actively find ways to meet these needs.

Building Community

Do people feel a strong sense of community in the organization that you lead? Servant leaders have a strong sense of community spirit and work hard to foster it in an organization. They believe that an organization needs to function as a community. A servant leader instills a sense of community spirit in the workplace. Those who want to be great servant leaders need to work hard to build community in the organization.

Servant Leadership Development

Servant leadership is characterized by a belief that leadership development is an on-going, life-long learning process. For this reason, servant leaders commit to continual development in the 11 characteristics of servant leadership.

Some characteristics come more naturally to some people than to others. By their nature, characteristics such as *calling, empathy, healing* and *stewardship* are more difficult to learn and develop than other servant leadership characteristics. These are characteristics that leaders must already have to be successful servant leaders. Characteristics such as *listening, awareness, persuasion, conceptualization, foresight, growth* and *building community* all are learnable skills, so servant leaders can continually develop these. We encourage you to reflect and thoughtfully assess the degree to which you have what it takes to be a servant leader. If you are committed to being the best servant leader that you can be, we urge you to continuously work to develop these characteristics.

To learn more about servant leadership and the areas in which you could improve as a leader, you can contact your local Extension Educator or one of the authors:

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Sources of Information

Greenleaf, R. K. (1977). *Servant Leadership: A journey into the nature of legitimate power and greatness*. New York: Paulist Press.

Spears, L. C. (1995). *Reflections on leadership: How Robert K. Greenleaf's Servant Leadership influenced today's top management thinkers*. New York: Wiley Press.

This publication has been peer-reviewed.

Index: Leadership and Policy Issues
General
2002, Revised October 2007

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Appendix C
Draft of Survey Created with the Assistance of the University of Wisconsin Survey Center

The University Of Wisconsin College of Engineering needs your help to improve our leadership development efforts and training for students like you. This brief survey is designed to learn more about your experience with leadership development, specifically as it pertains to the model of **Servant Leadership**. This model focuses on 11 attributes and skills included in this approach to leadership development through action and service to others.

This survey asks about your current awareness and abilities in the various aspects of servant leadership. It is unlikely that any individual will be well developed at **all** levels of this leadership approach, and since we are trying to learn more about how we might better help students develop in this area, it is important that you be as honest as possible with your responses and refer to your **current** awareness and abilities, rather than where you hope or expect to develop in the future.

To thank you for your participation, you will receive XXXXX. Please take a few minutes of your time to share your opinions.. Any information you share will be kept confidential, and only be reported in group form. If you have any questions about the survey or study results, please contact XXX at XXX@wisc.edu, or 608-XXX-XXXX.

Instructions to complete the survey:

To choose a response, click on the button that corresponds to your answer.

If you start the survey and are unable to finish it, you can exit by simply closing the browser window and return to it later by clicking again on the link in your email. It will take you back to the next unanswered question.

After the entire survey has been completed and all the data are ready to be submitted, please click on the 'SUBMIT' button on the last page. Once you click 'SUBMIT' you will not be able to re-enter the survey.

We appreciate your time and effort in assisting us to improve leadership training for students like you.

One attribute of Servant Leadership is listening. By listening, we mean hearing and valuing the ideas of others, including those who are followers.

How important do you think listening is in being an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

In your experience at UW-Madison, how much did you learn specifically about <u>listening</u> as an important principle for effective leadership?

- ◯ Nothing
- ◯ A little bit
- ◯ Some
- ◯ Quite a bit
- ◯ A great deal

Still thinking about <u>listening</u> as hearing and valuing the ideas of others, including those who are followers, how confident are you that <u>you</u> have the listening skills to be an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

Another attribute of Servant Leadership is <u>awareness</u>. By awareness, we mean having a keen sense for what is happening with others, using cues from the environment to inform decisions and opinions of others, and not being fooled by appearances.

How important do you think awareness is in being an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

In your experience at UW-Madison, how much did you learn specifically about <u>awareness</u> as an important principle for effective leadership?

- ◯ Nothing
- ◯ A little bit
- ◯ Some
- ◯ Quite a bit
- ◯ A great deal

Still thinking about awareness as having a keen sense for what is happening with others, using cues from the environment to inform decisions and opinions of others, and not being fooled by appearances, how confident are you that you have the awareness to be an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

Another attribute of Servant Leadership is persuasion. By persuasion, we mean using compelling reasons to convince others to do things rather than relying on formal authority.

How important do you think persuasion is in being an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

In your experience at UW-Madison, how much did you learn specifically about persuasion as an important principle for effective leadership?

- ◯ Nothing
- ◯ A little bit
- ◯ Some
- ◯ Quite a bit
- ◯ A great deal

Still thinking about persuasion as using compelling reasons to convince others to do things rather than relying on formal authority, how confident are you that you can use persuasion to be an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

Another attribute of Servant Leadership is conceptualization. By conceptualization, we mean communicating and helping others communicate ideas and vision for an organization.

How important do you think conceptualization is in being an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

In your experience at UW-Madison, how much did you learn specifically about conceptualization as an important principle for effective leadership?

- ◯ Nothing
- ◯ A little bit
- ◯ Some
- ◯ Quite a bit
- ◯ A great deal

Still thinking about conceptualization as communicating and helping others communicate ideas and vision for an organization, how confident are you that you can use conceptualization to be an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

Another attribute of Servant Leadership is foresight. By foresight, we mean having the ability to anticipate the future and its consequences.

How important do you think foresight is in being an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

In your experience at UW-Madison, how much did you learn specifically about <u>foresight</u> as an important principle for effective leadership?

- ◯ Nothing
- ◯ A little bit
- ◯ Some
- ◯ Quite a bit
- ◯ A great deal

Still thinking about <u>foresight</u> as having the ability to anticipate the future and its consequences, how confident are you that <u>you</u> can use foresight to be an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

Another attribute of Servant Leadership is <u>growth</u>. By growth, we mean having a strong commitment to the professional and personal growth of others, and recognizing tangible and intangible contributions of others.

How important do you think a commitment to growth is in being an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

In your experience at UW-Madison, how much did you learn specifically about <u>growth</u> as an important principle for effective leadership?

- ◯ Nothing
- ◯ A little bit
- ◯ Some
- ◯ Quite a bit
- ◯ A great deal

Still thinking about <u>growth</u> as having a strong commitment to the professional and personal growth of others, and recognizing tangible and intangible contributions of others, how confident are you that <u>you</u> have a commitment to growth that would make you an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

Another attribute of Servant Leadership is <u>building community</u>. By building community, we mean having a strong sense of community spirit and believing that an organization needs to function as a community.

How important do you think building community is in being an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

In your experience at UW-Madison, how much did you learn specifically about <u>building community</u> as an important principle for effective leadership?

- ◯ Nothing
- ◯ A little bit
- ◯ Some
- ◯ Quite a bit
- ◯ A great deal

Still thinking about <u>building community</u> as having a strong sense of community spirit and believing that an organization needs to function as a community, how confident are you that <u>you</u> have the community building skills to be an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

Another attribute of Servant Leadership is having a calling. By having a calling, we mean having a natural desire to serve others while sacrificing self-interest for the good of the group.

How important do you think having a calling is in being an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

In your experience at UW-Madison, how much did you learn specifically about having a calling as an important principle for effective leadership?

- ◯ Not at all
- ◯ A little bit
- ◯ Some
- ◯ Quite a bit
- ◯ A great deal

Still thinking about having a calling as a natural desire to serve others while sacrificing self-interest for the good of the group, how confident are you that you have such a calling?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

Another attribute of Servant Leadership is empathy. By empathy, we mean understanding what is happening in the lives of others and how it affects them.

How important do you think empathy is in being an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

In your experience at UW-Madison, how much did you learn specifically about <u>empathy</u> as an important principle for effective leadership?

- ◯ Not at all
- ◯ A little bit
- ◯ Some
- ◯ Quite a bit
- ◯ A great deal

Still thinking about empathy as understanding what is happening in the lives of others and how it affects them, how confident are you that <u>you</u> have the empathy to be an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

Another attribute of Servant Leadership is <u>healing</u>. By healing, we mean having appreciation for the emotional health and spirit of others, and facilitating the healing process when the emotional needs of others arise.

How important do you think healing is in being an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

In your experience at UW-Madison, how much did you learn specifically about <u>healing</u> as an important principle for effective leadership?

- ◯ Not at all
- ◯ A little bit
- ◯ Some
- ◯ Quite a bit
- ◯ A great deal

Still thinking about healing as having appreciation for the emotional health and spirit of others, and facilitating the healing process when the emotional needs of others arise, how confident are you that <u>you</u> have the appreciation of healing to be an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

The final attribute of Servant Leadership is <u>stewardship</u>. By stewardship, we mean having the ability to prepare an organization for its destiny, usually to the betterment of society.

How important do you think stewardship is in being an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

In your experience at UW-Madison, how much did you learn specifically about <u>stewardship</u> as an important principle for effective leadership?

- ◯ Not at all
- ◯ A little bit
- ◯ Some
- ◯ Quite a bit
- ◯ A great deal

Still thinking about stewardship as having the ability to prepare an organization for its destiny, usually to the betterment of society, how confident are you that <u>you</u> use stewardship to be an effective leader?

- ◯ Not at all
- ◯ Slightly
- ◯ Somewhat
- ◯ Very
- ◯ Extremely

You may have learned about some or all of the attributes of Servant Leadership we have just described in other types of learning experiences before coming to UW-Madison, or since your arrival here. **Did you learn about any of the aspects of Servant Leadership through…**	Yes	No
… a workshop offered by the College of Engineering?	○	○
… a workshop offered elsewhere on campus?	○	○
… a course offered by the College of Engineering?	○	○
… a course offered elsewhere on campus?	○	○
… a student organization of any kind?	○	○
… a mentor or advisor?	○	○
… somewhere else?	○	○

(Programming note: IF ANY OF THE ABOVE ITEMS ARE ANSWERED YES, THIS FOLLOW UP ITEM CAN BE SET TO COME UP FOR EACH ITEM INDIVIDUALLY OR AS A WHOLE)

You indicated you learned about one or more aspects of Servant Leadership through one of the sources listed in the previous question. Please describe that learning experience below.

If you have ever had the opportunity to demonstrate the use of any of the 11 aspects of Servant Leadership in some capacity, please describe the situation, the aspect or aspects used, and how successful you were.

What is your current year in school at the UW-Madison?

- ○ First year
- ○ Sophomore
- ○ Junior
- ○ Senior
- ○ Other (please specify)

Were you admitted to the UW-Madison as a transfer student?

- ◯ Yes
- ◯ No

What is your current primary major at the UW-Madison?

- ◯ Option 1
- ◯ Option 2
- ◯ Option 3
- ◯ Option 4
- ◯ Option 5

Do you have a second major at this time?

- ◯ Yes (please specify)
- ◯ No

What is your gender?

- ◯ Female
- ◯ Male

Appendix D – Engineering Leadership Course Syllabus

INTEREGR 103
Core Competencies for Engineering Leaders
Fall 2013

Course overview and syllabus

General Course Information

Mondays, 1:30-3:00
Room 410A Wendt Commons

NOTE: This syllabus is subject to change.
Please rely on course website for the most current information!
https://courses.moodle.wisc.edu/prod/course/view.php?id=1649

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NOTE: If there are circumstances that may affect your performance in this class, please let any of the instructors know as soon as possible so that we may work together to develop strategies for adapting assignments to meet both your needs and the requirements of the course. The McBurney Disability Resource Center (263-2741) provides resources for students with disabilities. You will need to provide documentation of disability to them in order to receive official university services and accommodations.

How to be successful in this class…
…direct advice from past students.

Below are direct quotes from past students when they were asked, "What advice would you give to students taking the course next semester?"

1. ***Attend class each week ready to talk about the readings***.
2. ***Go to office hours***, and make it a point to get to know the SAs. They will be very helpful and essential to your success in the course.
3. I would advise them to not blow it off and to make sure to embrace all the opportunities opened up by this class.
4. Be open and participate!
5. Pay attention, it is all valuable information. Take advantage of how open the instructor and SA's are to talking about anything.
6. Participate in-class and out-of-class and think not as much about what you can about this class but what you can learn about yourself.
7. Don't give up on it right away. At first I didn't like the class but it got much better.
8. Do the homework assignments such as the career fair and student organization fair, because they help you start getting involved in campus.
9. The ideas aren't linked that much to engineering but are extremely important to being in a workplace environment so pay attention because it will be very useful in the future.
10. ***Start the service project as soon as possible and not wait***.
11. Just go to class and have fun. None of the papers/reflections are that bad. Try to come up with a leadership project early on though.
12. Ask yourself, self-assessing questions and take the time to learn the answers. You can learn so much about yourself if you engage in the activities.
13. Apply for the Leadership Certificate at the beginning of the semester so that you can work on it throughout the class.
14. ***Do your homework before the day it is due***.
15. Prepare to learn about what really matters in engineering.
16. ***Be engaged***, its the best way to take something out of the course.

Introduction

The "Wisconsin Experience" that you began this year is an approach to education characterized by intentionally integrating in- and out-of-class learning experiences that engage you in active student leadership while at the University of Wisconsin-Madison. It is grounded in our 100 year old progressive history of graduating extraordinary citizens able to have a significant and positive impact on our world.

This course was created to continue this history by directly responding to students, alumni, and prospective employers who repeatedly tell us that formal leadership development is missing from the otherwise strong technical Engineering curriculum. The course is centered on the Social Change Model of Leadership Development and a commitment to Servant Leadership. It is based on the premise that leadership is not simply a place of positional authority. Rather, leadership is a process that can be learned, and includes a *responsibility to act in service to others* instead of a role of exerting *control over others*. Everyone has the potential to be a leader, but it takes intentional development.

It is common for engineers to have highly developed technical skills. A challenge many practicing engineers face is how to effectively apply their technical skills amidst an increasingly complex professional environment where they are also expected to integrate non-technical issues into their work.

Broadening your view of engineering, and integrating your technical ideas into the landscape of social, political, economic, environmental, and human dynamics will help you further develop and serve a sustainable society. Historically, however, leadership and service have not been integrated into a formal technical engineering curriculum.

To meet this challenge, and to build on solid technical skills, engineering leaders of the future need to intentionally develop a complementary set of people skills, often times referred to as "soft skills." But "soft" does not imply easy, for people skills are often times the most difficult to develop for technically focused professionals. People skills manifest themselves more specifically as communication styles, interpersonal behaviors, a commitment to service of others, systems level understanding of organizational dynamics, and management skills for developing multi-disciplinary, multi-functional teams. Often times, these "soft" skills are what will limit or expand your career opportunities.

This course is not intended to be a one-time event or an endpoint. Rather, it is intended to serve as a launching pad for your ongoing career planning and leadership development as part of a life-long continuous improvement process. No matter where you are in your personal and professional development, we all continue to have room to learn and grow.

Therefore, this course is designed to help take you from wherever you are, to the next step in your learning and engineering professional development. We will cover a wide array of topics, starting with an overview of historical and contemporary models of leadership that provides context for a deeper focus and exploration of the theory, practice, and application of the Social Change Model for leadership. Coupled with the Social Change Model, we will also learn how Servant Leadership, a leadership approach established by Robert Greenleaf, applies to engineering and our need to be of service to society. In one of his defining writings, Greenleaf writes,

> *The servant-leader is servant first... It begins with the natural feeling that one wants to serve, to serve first. Then conscious choice brings one to aspire to lead. The difference manifests itself in the care taken by the servant — first to make sure that other people's highest priority needs are being served. The best test, and difficult to administer, is: do those served grow as persons; do they while being served, become healthier, wiser, freer, more autonomous, more likely themselves to become servants? And, what is the effect on the least privileged in society; will they benefit, or at least, not be further deprived?*

The questions posed by Greenleaf are questions that can be at the heart of learning engineering professional practices and will serve as a framework for this course. The themes listed below provide a map for the specific weekly topics. Throughout the semester, your assignments are designed to expose you to a wide array of different perspectives, provide you opportunities to make meaning of what you learn, and put into practice the tools and lessons of the course.

Theme 1: Introduction and Overview of Leadership Models
Theme 2: Social Change Model and Servant Leadership
Theme 3: Moving to Action
Theme 4: Lifelong Learning

Course goals

As with most learning opportunities, you will get out of this course as much as you put in. So, we invite you to explore the topic of leadership, experiment with new ideas, and put what you learn into a personal context that you can use as a foundation to continue to grow throughout your career.

The course goals are aimed to help you develop as a future leader by:

1. Raising your awareness, appreciation, and knowledge of leadership issues and personal choices,
2. Engaging in experiential learning to apply and develop critical leadership skills.

More explicit goals are listed below and will be connected to each weekly lesson. We will evaluate how well we meet these objectives by engaging in periodic

assessments of our progress throughout the semester. These assessment activities will include self-assessments, peer review of your work, and instructor feedback.

Students will reflect on, and demonstrate knowledge of:

1. A personal vision for your professional future and the spectrum of career opportunities available to fit your personal vision,
2. How your strengths, leadership potential, and development needs can help you achieve your personal vision,
3. The leadership role that engineering professionals can play in service to a breadth of social, political, environmental, economic, and global issues,
4. How to access resources to assist ongoing leadership development.

Students will experience and be able to:

5. Comfortably and professionally communicate directly with peers, practicing engineers and adult professionals,
6. Apply and reflect on the "Seven C's" of the Social Change Model through engaging as Servant-Leaders in a stewardship service project,
7. Apply teamwork and leadership skills necessary to embrace individual differences and help groups collaborate on shared aims and values,
8. Use new skills, tools, and insights to advance ideas from concepts to action,
9. Craft an action plan for future leadership development.

Course content and structure

This course will not give you the "Top 10 Essential Skills of a Leader", then send you on your way. Our belief is that specific skill-based learning will have limited long-term impact unless it is grounded in a broader framework, connected to a locally and personally relevant context, and internalized by the individual person.

You will learn direct connections between the technical curriculum from other courses, and your personal role as an engineering leader. Course materials have been pulled from a wide variety of books, articles, case studies, online resources, assessment tools, and personal experiences of the instructors, guest speakers, and you - the students. You will learn about individual characteristics and competencies of leadership in the context of global understandings of the social, political, and economic impacts of engineering.

The Social Change Model of Leadership focuses on the seven core values listed below that progress through increasing levels of involvement from individual to group to social values. You will engage in activities designed to help you find personal connections with the values, and apply them in real world experiences.

Core values of the Social Change Model of Leadership

1. Consciousness of Self
2. Congruence

3. Commitment
4. Collaboration
5. Common Purpose
6. Controversy with Civility
7. Citizenship

The weekly course topics, briefly listed below, are structured into 4 primary themes with specific topics covered each week to support an in-depth exploration of each theme.

Theme 1: Introduction and Overview of Leadership Models

Week 1: Introduction and overview, keys to success, project selection
Week 2: Engineering for the future, project scope
Week 3: Perspectives on engineering and leadership, project timeline
Week 4: Personal meanings of leadership, project team workplan

Theme 2: Social Change Model and Servant Leadership

Week 5: Individual styles, Consciousness of Self, Congruence, and Commitment
Week 6: Collaboration and Common Purpose, Group projects refined
Week 7: Controversy with Civility
Week 8: Citizenship
Week 9: We can, but *should* we? Ethical issues in engineering.

Theme 3: Moving to Action

Week 10: Creativity and innovation
Week 11: Emotional Intelligence and Consciousness of Self (revisited)
Week 12: Balance, time management, and workplan development

Theme 4: Lifelong Learning

Week 13: Generational dynamics in the workplace, lifelong learning
Week 14: Course wrap up, lessons learned, presentations

This course was initially offered as a pilot two years ago and has been adapted based on extensive student feedback. The course satisfies two credits of the required Freshman core curriculum for Engineering students, and satisfies part of the criteria toward earning a campus Leadership Certificate (http://cfli.wisc.edu/leadership_certificate.htm).

Our weekly 90-minute class periods will typically follow the outline below:

- Announcements, connections to previous weeks, and introduction to topic
- Brief presentation of weekly material (usually by one of the course instructors, sometimes by guest speaker with expertise)
- Small group (6-7 people) in-class discussion to process presentation
- Departmental/major briefs
- Active engagement in class activity (simulations, role play, case study)
- Wrap up and look ahead to future weeks

Evaluation of your learning

A total of 100 points is available and distributed through a variety of assignments as detailed below.

Weekly prep, participation, readings	15% (1 pt/week, 1 "gimme" point)
Weekly reflection writings	10% (2 pts each for 5 responses)
Homework assignments	45%
Out-of-class activity	5%
Final project report and presentation	20%
Overall communications*	5%
TOTAL	100%

*(*The "Overall communications" points are discretionary points to be distributed based on how well you communicate with instructors and teammates throughout the semester. It includes, but is not limited to, issues such as communicating absences, coordinating make up work, professionalism of email communications, appropriate planning, etc.)*

Your final grade will be figured based on the scale shown below with a total of 100 points available.

A = 90-100
B = 80-89
C = 70-79
D = 60-69
F = 0-59

A/B and B/C grades will be determined for borderline cases on an individual basis and at the instructor's discretion.

Late assignments and attendance: You are expected to attend all classes and complete all of the activities outlined for each week on time. Unless prior arrangements are made with the instructor, or in cases of exceptional circumstances, the due dates listed in the course calendar are firm.

If you need to miss a class, it is your responsibility to communicate your absence to your instructor BEFORE class. Otherwise it is considered unexcused. It is also your responsibility to follow the outline, plan ahead as needed, and submit your work on time each week. **Late assignments and participation in weekly activities will result in the loss of 1 point per day for each overdue activity.**

Assignments and class activities

You are expected to engage in, and complete, all in- and out-of-class activities that are detailed on the following pages. All assignments should be submitted via the dropboxes on the course website. The specifics for each assignment are listed below, but the following guidelines apply to all assignments:

1. Submissions should be in Word format
2. Filename should be, "LAST NAME, Assignment #.doc"
3. Spelling, grammar, punctuation, format, etc. are important, so proof read your assignments before submitting!

Class preparation, participation, and readings
(15 points possible, 1 for each of the 14 weeks with 1 "gimme" point)

Fifteen percent of your overall grade is specifically tied to your level of involvement, engagement, and preparation for class. ***One primary component of this is that you have done the reading assignment and come to class ready to discuss what you learned and ask questions!***

To be successful in this course, you are expected to:

- Attend class prepared to actively participate in all class activities (in-and out-of-class),
- Complete all readings and out-of-class activities so that you are able to contribute to in-class discussions,
- Provide constructive and honest feedback to peers and instructor regarding all course activities,
- Find ways to be a leader within the class activities, while allowing others to do the same,
- Make explicit ties between course content and your work outside of the class in other courses, organizations, activities, and current events,
- Actively contribute to the learning of others.

Participation, preparation, evidence that your completed the readings, and your level of communications and engagement in class will be the primary determining factor for borderline grades. Instructors will record weekly preparation and participation grades at the conclusion of each class period.

Your weekly points will be determined as follows:

- Full credit if you show that you are prepared for class, have completed the reading, and constructively participate in class.
- Partial credit if you are not prepared, do not clearly show that you have done the reading, and/or do not constructively participate in class.
- No credit if you are absent from class, do not do the reading, do not submit a weekly reflection, or are disruptive or disrespectful in class.

Written reflections
(2 points each for 5 assignments)

You will have five brief reflective writing assignments throughout the semester. These are not intended to be formal assignments like your other homeworks (**though grammar and spelling do count!**). Rather, they are intended to be informal assignments that give you a chance to respond with whatever is on your mind regarding the question of the week. Do not sweat over whether you have the perfect wording – we are looking for three main elements in your weekly reflections:

1. Is it thoughtful and genuine, or did you throw it together at the last minute just to have something to turn in?
2. Do you connect your thoughts to the readings, mini-lectures, and other class discussions from the week?
3. Do you do more than just mimic back something that you heard in class?

You will not receive detailed feedback on the reflective writing assignments. They are intended to be a place for you to process your thinking and submit it so that we have an idea of what you are learning and the connections you are making. Details for your weekly reflection questions will be discussed in class each week there is one assigned.

Homework assignments
(45% of your total grade from 6 homework assignments)

Details of each homework assignment are listed below. Each assignment will be graded on a 5-point scale as defined below.

5 = exceeds expectations
4 = very solid work, meets expectations
3 = with a bit more effort, this would be very solid
2 = below expectations
1 = poor effort
0 = not turned in, or turned in too late for credit

Homework #1 – Resume Review
(5 points, due before you attend the career fair on September 23rd, 25th, or 27th)
Your assignment is to bring a draft of your resume to office hours of any instructor for a quick review. This must be done **BEFORE** you attend the career fair on September 23rd, 25th, or 27th.

If you do not already have a resume, you can follow the instructions on the Engineering Career Services website to create one: https://ecs.engr.wisc.edu/public/student/resume.php.

NOTE: If you cannot attend office hours before the career fair, you must inform the lead instructor to arrange for an alternate assignment. If you do not inform the instructor with ample time to receive an alternate assignment, you will receive a 0 for this assignment.

Homework 2 – Career Fair and Student Organization Fair reflection
(5 points, due Sunday, September 29th, midnight)
Your assignment is to attend two upcoming events and write a reflection paper about your experience. The two events are:

1. Student Organization Fair (Wednesday, September 11th, 4:00-8:00 pm Kohl Center) **and**
2. College of Engineering Career Fair (September 23rd, 25th, and 27th from 11:00-5:00 in Atrium of Engineering Centers Building).

NOTE: If you cannot attend one or either of these events, you must inform the lead instructor BEFORE the event to receive an alternate assignment. If you do not inform the instructor BEFORE the event, then you will receive a 0 for this assignment.

While attending, you should visit at least 3 booths at each event (two that are familiar to you, and at least one that catches your interest, but you know nothing about).

Write your responses to the following questions (500-700 words)

- Which companies and student organizations did you visit? Why?
- What companies and student organizations have opportunities that appeal to you? Why?
- Which companies and student organizations do not have opportunities that appeal to you? Why?
- Do your experiences at the career and student organization fairs inform your views on your professional future or ways you will get involved on campus? Why or why not?

Homework 3 - Two part assignment
(10 points, due October 6th)

Part 1: Reflections on Leadership Models (500-700 words total).

- Of the leadership models we covered in class, which one(s) resonate with you the most? Why? How does it relate to your personal vision for your professional future you wrote in Week 1?
- Of the leadership models we covered in class, which one(s) do not resonate with you? Why?
- Reflecting on all leadership models we covered in class, generate your own model of leadership that extracts key aspects from multiple models, as well

as your own thoughts and experiences. Explain your model, include graphics as necessary, name your model, and explain why you chose that name.

Part 2: Proposal, context and plan for Servant-Leadership service project.
As a team, complete and turn in the "Launching Your Project" worksheet distributed in class and available on the course Moodle site. Further details will be discussed in class.

Homework 4 – Two part assignment
(10 points, due October 20th)

Part 1: Reflections on self-assessment (500-700 words total).
- What did you learn from completing the True Colors self-assessment we did in class?
- What surprised you about the results you received?
- What was consistent with what you expected about the results you received?
- What new questions arise from the self-assessments regarding your individual styles, strengths, and areas of needed development?
- What are the implications of your self-assessments for how you work and communicate with others in a professional setting?

Part 2: Write a one-page response (~500 words) about your experience with the Earthquake activity. Below are some guiding questions to consider.
- What is your main take-away and/or main insight from this activity as it relates to leadership and teamwork?
- What aspects of the activity led you to that main insight?
- Given your experience working in a team to arrive at consensus, reflect on how you worked through differences of opinion. What did you find most challenging? How did you overcome these challenges?
- Overall, what did you learn about the collaborative process?

Homework 5 – Examples of leadership
(5 points, due November 10th)

Think of a contemporary leader who embodies your concept of leadership and write about 500 words to address the questions below.
- Who is the person?
- How do they embody your concept of leadership?
- What have they been able to accomplish through their leadership?
- How is this applicable to the discipline of engineering?

Homework 6 – Two part assignment
(10 points, due December 1st) – ***THANKSGIVING WEEKEND–PLAN AHEAD!***

<u>Part 1</u>: This portion of the assignment activity engages upperclass students, alumni and industry representatives, and gives students real world context while developing skills for professional writing, oral communication, and inquiry.

Interview prep during class on November 4th - we will:

- Help pair you up with an industry representative (coop, intern, or professional) or alumni for contacting outside of class,
- Develop a set of questions to discuss with your external contact,
- Work through professional approaches to contacting others, and following up after a conversation. (This can be done over the phone, by skype, coffee, or lunch, but should not be simply an email or online discussion).

Interview (to be completed between November 4th and November 25th)

- Using what we developed in class, interview an alumni or industry leader about their work (specific questions to be developed in class).

Reflect on what you learned (5 points)

- Write a one-page summary (about 500 words) that addresses the questions below:
    - Whom did you interview? (Name, company, position and primary role at work, etc.)
    - How did you initiate contact (include copy of email if appropriate)?
    - What did you discuss? What main questions did you ask?
    - What did you learn from your discussion with the alumni or industry leader? If you learned nothing new, please explain.
    - From what you learned, what lessons may you be able to use now? What may you be able to use in the future for your career?

<u>Part 2</u>: Workplan development
Draft a detailed workplan for how you will successfully finish up the semester for all of your classes, projects, finals, outside work, personal commitments, etc. Include intermediate and primary milestones, timelines for completion, potential clash points, etc.

Out-of-class leadership development opportunity
(5 points, date TBD based on when you attend your event)

DO NOT WAIT UNTIL THE END OF THE SEMESTER FOR THIS ASSIGNMENT!

Participate in at least one out-of-class leadership development opportunity. This can be a College of Engineering event, something sponsored by another campus unit, or a community program focused on leadership issues. Your assignment is to write a one-page reflection that addresses the questions below:

- What program did you attend?
- What was the primary purpose/context of the program you attended?
- What did you learn from your participation?
- What will you do (or might you be able to do) with what you learned?

Below are some campus resources that you can use to help you find an event to attend.

- Wisc Calendar
  - http://www.today.wisc.edu/
- Center for Leadership and Involvement:
  - http://cfli.wisc.edu/
- Student Leadership Program (SLP) Calendar:
  - http://cfli.wisc.edu/SLP/events.html
- Office of Human Resources Department:
  - https://www.ohrd.wisc.edu/home/
  - On the left-side of the webpage there are upcoming events posted
- Women in Science and Engineering Leadership Institute (WISELI):
  - http://wiseli.engr.wisc.edu/
- Student Leadership Center (College of Engineering):
  - http://slc.engr.wisc.edu/

(NOTE: It is not required, but if you're interested you should make sure to start recording your involvement on your student record!
http://cfli.wisc.edu/cmsfiles/How_to_use_LI_with_web_pictures.pdf)

Servant Leadership project final report and presentation
(15 points for report, 5 points presentation, due Friday, December 13th, midnight)

During the first few weeks of the course, we will discuss opportunities for your course project and ask you to commit to a project to complete by the end of the semester. You will work in project teams with 2 or 3 other students throughout the semester. Individual projects, or larger group projects are acceptable, but need to be discussed with the instructor for approval.

Details of the presentation format will be discussed later in the semester.

Generally speaking, your project needs to address:

1. *Leadership* – your project selection should give each of you the opportunity to actively engage in a leadership role to experience and reflect on your leadership abilities. While doing your project, you should also observe other leaders to learn about their styles, approach, effectiveness, and impact on others.
2. *Service* – your project should provide service to others in some capacity and/or focus on environmental sustainability. To borrow from Robert Greenleaf's definition of Servant Leadership:
    a. *Do those served grow as persons?*
    b. *Do they while being served, become healthier, wiser, freer, more autonomous, more likely themselves to become servants?*
    c. *What is the effect on the least privileged in society?*
    d. *Will they benefit, or at least, not be further deprived?*

Additionally, your project should:

- Encompass about a 10-hour total service commitment that can be completed throughout the semester
- Allow you to lead the process of taking an idea from concept to planning to implementation
- Allow you to apply and reflect on how the lessons on leadership covered in class apply to your project
- Include multiple steps and interactions rather than a one-time event

The specific project is up to you and we will discuss various campus resources to help you find an appropriate project.

The final report is intended to be a culmination of your work throughout the semester. General guidelines for what to include are listed below with point allocations (in parentheses). We will discuss further details as the semester progresses.

- Reflections on Servant Leadership project (max 2 pages)
    - Context of the organization, purpose of the project, your role in the project.
    - What did you do, learn, and accomplish by doing your project?

  - What did you learn about leadership by your role as a leader on the project and by observing others in leadership positions?
  - What did you learn about teamwork and shared leadership by working with others in your project team?
  - In what ways does your experience with your project connect with your understanding of the Servant Leadership and Social Change Models of leadership?
  - In what ways did your project help you better understand the discipline of engineering?
- Personal development action plan (max 2 pages)
  - What was your personal vision of your professional future when you entered the class (you wrote this in Week 1)? Has it changed, or remained the same? How? Why?
  - What are your leadership strengths and areas of needed development? Relate your response to the MBTI assessment.
  - What resources and opportunities are available to you for future development?
  - What is your rough timeline for addressing these development needs? What are your first steps to take?
  - What actions have you taken (or will you take) to continue your development in future years?
- Final course reflection (max 1 page)
  - What are your top 3 main take-away lessons from the course?
  - What do you wish we had spent more time on? Why?
  - What do you wish we had spent less time on? Why?
  - What main questions do you have as you leave this course?
  - How will you go about finding answers to your questions?

And finally…

This course may be different than other courses you have had or will have. This course is about you, your experiences, and your learning. It's not about a right answer that we will give you. It's not about a particular way of doing things. We are here to facilitate your learning, learn from you, and continue to improve this course by integrating your learning into how we teach it.

If you ever wonder what we think your answer ***should*** be – stop right there. The answers we want you to have are the answers that are thoughtful and meaningful to you, informed by what we learn in this course. We want you to write, speak, think, and act in a way that is true to yourself while being open to input and feedback from others about how you are doing. In the end, we want you to know yourself well enough that you can be at your best as your career develops.

Course syllabus

Week Date	Main topic	Reading assignments (to be done BEFORE class!)	Out of class activities and assignment due dates
Theme 1: Introduction and Overview of Leadership Models			
1 9/9	Introduction, overview, keys to success	Read Course Overview & Syllabus.	DUE: Homework #1-Resume Draft a resume and bring to office hours for quick review ***before*** you attend the Career Fair. DUE 9/15: Reflection #1– Career Goals ATTEND: Student Organization Fair on Wednesday, 9/11 from 4:00-8:00 pm, Kohl Center.
2 9/16	Engineering for the future	Read The Engineer of 2020: Visions of engineering in the new century. Chapters 1 & 2.	NONE
3 9/23	Perspectives on engineering and leadership	Read Astin, H. S. (1996). "Leadership for Social Change", About Campus (July-August). Read Keith, K. M. (2008), The Case for Servant Leadership. Chapter 3, "Power Model vs. Service Model".	ATTEND: Career Fair on September 23, 25, or 27 in atrium of Engineering Centers Building. DUE: 9/29 Homework #2 – Reflection on Career and Student Org Fairs Reflection #2 – Project Scope Description
4 9/30	Personal meanings of leadership Project teams	Read Khan, S. (2005). "Awaken the Leader in You." Supplemental reading: Walesh, S., "The Leader Within You: Let it Come Out", http://www.helpingyouengineeryourfuture.com/leader-within-you.htm	DUE: 10/6 Homework #3 – Leadership Models and Project Proposal

Theme 2: Social Change Model and Servant Leadership			
5 10/7	Individual styles Consciousness of Self, Congruence, and Commitment	Watch TED Talk, Susan Cain, "The Power of Introverts" No reading assignment.	DUE: 10/13 Reflective writing #3 – best and worst team experience
6 10/14	Collaboration and Common Purpose Group projects - refined	Read Brunt (1993). "Constructive and Destructive Group Behaviors", Facilitation Skills for Quality Improvement. Read Mindtools website, "Forming, storming, norming, and performing", http://www.mindtools.com/pages/article/newLDR_86.htm	DUE: 10/20 Homework #4 – Self assessment and Earthquake activity
7 10/21	Controversy with Civility	Read, "Conflict Resolution: Resolving conflict rationally and effectively", http://www.mindtools.com/pages/article/newLDR_81.htm Additional reading TBD	None
8 10/28	Citizenship Guest speakers	Read cases and examples (TBD)	DUE: 11/3 Complete mid-course evaluation.
9 11/4	We can…but should we? Ethical issues in engineering	Read DISORDER summary of process for ethical decision making. Read Winner, "Do Artifacts have Politics?"	DUE: 11/10 Homework #5 – Examples of Leadership
Theme 3: Moving to Action			
10 11/11	Creativity and innovation	Read Amabile, "How to Kill Creativity"	DUE: 11/17 Reflective writing #4 – Innovative ideas Track your daily time usage using spreadsheet (to be discussed in class). Bring hard copy of your spreadsheet to class on 11/25. Make contact and schedule your "interview". Assignment is due 12/1 – don't wait!

11 11/18	"Consciousness of self" revisited Emotional Intelligence	Read, Bradberry, T., & Greaves, J. (2009). Emotional Intelligence 2.0. Chapter 3, "What Emotional Intelligence Looks Like: Understanding the Four Skills".	DUE: 11/24 Reflective writing #5 – Emotional Intelligence Conduct your "interview". Assignment is due 12/1– don't wait!
12 11/25	Balance, time management, and workplan development	Read, Loretto, P., "Creating Work Life Balance for College Students" *(Read the main page article from website listed above, follow at least 3 additional links to learn more about a related topic of interest.)*	DUE 12/1 Homework #6 – Interview and Workplan Bring hard copy of your time tracking spreadsheet to class on 11/25.
Theme 4: Lifelong Learning			
13 12/2	Generational dynamics in the workplace Lifelong learning, development plans	Watch PBS video: (http://video.pbs.org/video/2145113304) Read Zemke, "Generations at Work"	None.
14 12/9	Course wrap up, lessons learned	Read George, M. (2008). "Leadership in the Context of Shaping a Meaningful Career"	**DUE FRIDAY, 12/13 @ MINDIGHT** Final report

Appendix E
Paper Published in American Society for Engineering Education (ASEE) Conference Proceedings

Leadership development in tight times: Expanding our educational reach without watering it down

Christopher Carlson-Dakes and Gregory W. Harrington

Abstract

This paper addresses a challenge many universities face: How can we meet increasing demands for undergraduate leadership development during a time of dwindling resources? Our alumni and industry partners tell us we need to graduate students with more leadership experience – yet we encounter a confluence of conflicting factors that make it difficult to respond accordingly. Leadership development is a long-term process in which students benefit from early and ongoing engagement throughout college. Recommendations by the National Academy of Engineering reinforce educational research that shows learning is enhanced by smaller classes, more direct contact with instructors, and active engagement in real world projects. Yet we struggle to find feasible paths to take action. Pressures to increase enrollment and cut budgets challenge us to find ways to do more with less without diluting the learning experience. Administrators embrace the need to update curriculum to remain current and relevant, yet there is no room to add in a tightly packed four-year program. These tensions require innovative approaches to engineering education and leadership development to meet the challenges of the future.

Introduction – An Overall Framework

There is general agreement that a renewed focus on leadership development is critical to the future success of the engineering discipline (NAE 2004). Our thinking begins to diverge, however, when we discuss *why* we face this need, *who* needs to act, *what* needs to be done, and *how* we can begin to take action.

This paper offers one curricular model as a point of intervention that has shown early success in preparing leaders at a large public research university while remaining mindful of our national trend toward increasing enrollments and decreasing budgets. The paper ends with lessons learned and guidelines for how to expand and adapt this model at other institutions.

There are numerous pockets of activity and local champions of leadership development efforts on many campuses. Overall, however, our collective efforts have been inadequate to respond accordingly with regard to how we cultivate, identify, and intentionally develop engineering leaders of the future. As engineering faculty, the challenge in front of us to develop future engineering leaders is one that industry partners and potential students are expecting us to meet. Yet this challenge comes at a time of dwindling budgets, higher enrollments, and more rigorous research expectations. Many of us feel as if our hands are tied – we know the need, and feel the urgency, yet realize we are ill-prepared to act. To see action, we need individual commitment, surrounded by institutional support, toward a global need. This leaves us with a central question: How do we do more with less?

In The Courage to Teach, Parker Palmer explores an approach to educational transformation by engaging in deep inquiry of fundamental questions of *what, how, why,* and *who* (Palmer 1998). We often start out with content and curriculum – the *what* that is being taught. If we dig a bit deeper, we begin to consider pedagogical structures – the *how* we are teaching the *what*. Occasionally, we may ask *why* we are teaching *what* we teach. Rarely, however, do we get to the point of reflecting and sharing the personal values present in our teaching and learning endeavor – the root questions of *who* are we as teachers, and equally important, *who* are our students as learners? These three elements – curricular content (what), pedagogical structure (how), and personal values (why and who) – serve as the basis for a model for this paper that can help frame our actions toward more intentional leadership development for undergraduate students.

A Changing Landscape – A Case for Why We Need to Act

Globalization, generational shifts in the workplace, more flexible organizational structures, and increasingly complex problems require us to rethink how we cultivate, identify, and sustain leaders of the future (NAE 2004). Societal needs for sustainable energy sources, upgrades to our decaying infrastructure, access to clean water, and affordable health care are just a few of the many global challenges engineering leaders will be called upon to resolve throughout their careers with a stronger sense of urgency than we currently face. The technologies already exist to address many of these needs. What we lack, however, are leaders at all levels who are able to integrate their technical expertise into non-technical arenas to work cross-disciplinarily, cross-functionally, and cross-culturally, to bring technological ideas to life in a relevant context and on a broader scale.

The NAE committee who authored the "Engineer of 2020" (NAE 2004) referred to this need when they defined several "Aspirations for the Engineer of 2020" including a call for us to aspire to a future of engineering that includes professionals who, "assume leadership positions…in the making of public policy and in the administration of government and industry", and to, "effectively recruit, nurture, and welcome underrepresented groups to its ranks". The guiding principles of the NAE report also include keeping, "pace with technological innovations", and expanding our capacity to appropriately contribute to an, "increasingly diverse and multidisciplinary" global community. More recently, in February 2012, the President's Council of Advisors on Science and Technology published a report that included three imperatives: 1) Improve the first two years of STEM education in college, 2) Provide all students with the tools to excel, and 3) Diversify pathways to STEM degrees (President's Council 2012).

Without a doubt, these are challenging goals under any circumstances. Our current divisive political climate and uncertain economic outlook make this an even more daunting task. To help frame a course of action at an institutional level, we must address a fundamental question: Amidst continually decreasing budgets for public higher education, how can we respond to a growing need to educate future engineering leaders by:

1. **increasing *and* diversifying** our enrollments,
2. **expanding our curriculum** beyond familiar terrain of technical expertise to engage cross-disciplinary synergies we don't yet fully understand,
3. **shifting our pedagogical framework** to be more effective, current, and relevant to a more diverse student body, and
4. **maintaining the rigor and quality** of world class educational experiences for all students?

There is no magic bullet solution that meets these four challenges. No single event, institution, or individual led us to these challenges, and no single solution is going to resolve them. Rather, there are multiple avenues to explore and many points of intervention that can collectively make a difference. To borrow from a baseball analogy, if we wait for the homerun hitter to clean the bases with a grand slam, we are committing three troublesome errors. First, we are relegating the responsibility to someone else. Second, we are assuming that there is a single "homerun" solution that can do it all. Finally, we are deferring action until a later time, when the time to act is now. We all can do something – today. But what and how?

To paraphrase Albert Einstein, we cannot address the problems of tomorrow with the same approaches we used to create them. It is critical to note that both the NAE and the President's Council highlight the importance of diversifying our discipline. Historically in the United States, the engineering discipline, "has been nourished principally by drawing from a white male population" (NAE 2004). Looking to the future, the opportunities to address the problems we will face, and the body of work to be done, requires us to expand our discipline to be more inclusive of, and welcoming to, a more diverse group of talented individuals. Additionally, we must begin to tip the balance toward an integrated model that strives to educate the whole person – technical and non-technical – such that our graduates are prepared to be leaders who can address the global needs of the future that differ from what was needed when many of us completed school.

As educators, we do not leave technical skills development to chance, hoping that students will pick them up along the way or learn them from someone else. But, it is fairly common for us to approach leadership skills development as if it is something that can be deferred until later in student's career, or "outsourced" to another department, school, or organization. Sometimes, we adopt the "osmosis" model and hope students pick up the requisite leadership skills simply by struggling their way through college. Solid technical skills will get students into the door of a career. From there, however, it is often their leadership skills that will limit or expand their career opportunities and success.

This paper is based on the premise that starting with ourselves as educators, we need to reconsider the way we individually and collectively think about, embrace, and intentionally develop engineering leaders of the future. For some students, our current approach is a viable model for their success. No doubt, today we have many highly successful engineering leaders in our discipline. For other students, however, in particular those who hail from underrepresented

demographics, we are doing them and our discipline a disservice by presuming that they will find their way amidst a learning environment that has been documented to be ineffective, unwelcoming, and even hostile or threatening to them (Steele 2010). Thus, we leave the leadership of our disciplines in the hands of the select few for whom the traditional approach has worked. This homogenization of our discipline perpetuates our current cycle and restricts our ability as a discipline to advance toward an increasingly complex, global, and intermingled future.

An Institutional Pathway Forward

To develop a strong cohort of future engineering leaders, our institutions need to engage, support, and exhibit leadership at all levels. We need a compelling and coordinated vision from the top, supported by mid-level champions across campus and enacted by committed individuals in- and out of- the classroom. We all have a place at the table and a voice in the conversation for taking good intentions and moving them to action.

The University of Wisconsin-Madison has a long-standing institutional history and tradition of graduating strong leaders, including more Peace Corps and Teach for America volunteers than most any other university in the country, and more leaders of major corporations than any university in the country (Berquam and Brower 2010). In an attempt to better understand why, recent campus-wide efforts have focused on defining the "Wisconsin Experience" - a set of core institutional principles and practices that help cultivate a campus culture of holistic education that can provide a framework for more intentional leadership development efforts (Berquam and Brower 2010). Our decentralized campus and faculty governance structure make it difficult to embrace a single model or coordinated approach. We often find that we recreate the wheel in many pockets of campus, at times competing with each other for resources and participants. But we all have in common a desire to create learning experiences that are inclusive, rigorous, and engaging for our students to help prepare them to be leaders with a vibrant future.

The common language of the "Wisconsin Experience" provides the UW-Madison with a framework to more consistently explicate our culture, and to work cross-disciplinarily and cross-functionally toward common educational goals. A set of Essential Learning Outcomes (ELO) provides an overall picture of what students need to prepare for the 21st century challenges (AAC&U, 2007). Broadly speaking, the ELO's include:

1. Knowledge of human cultures and the physical and natural world
2. Intellectual and practical skills
3. Personal and social responsibility, and
4. Integrative learning

To meet these ELO's, a set of High Impact Practices (HIP) provide a list of opportunities for experiential learning that can be adapted for individual courses (Kuh, 2008, AAC&U, 2007). Together, these ELO's and HIP's have been instrumental in moving toward unifying our campus efforts to broaden the core of "usual suspects" involved in leadership development - all without

institutional mandates that dictate the specifics of *how*. This is the type of top level institutional vision required to solidify a path forward.

Our College level first-year enrollment numbers reflect a national trend where the number of potential engineering students continues to increase (ASEE 2012). UW-Madison has seen a 42% increase from 2005-2010 (Romero 2011), and our students are entering with more robust leadership experiences and higher expectations for continued leadership development. Higher enrollments and expectations, coupled with decreasing budgets poses a pedagogical challenge to advance our teaching by continuing to connect, engage, and explore new terrain with our students. Our College of Engineering administration has supported leadership development via student organizations, small enrollment courses, internships and co-ops, and numerous workshops, seminars, guest speakers, and activities (Doll et al. 2009). In recent years the College has made strides toward a more integrative model that brings together curricular, extra-curricular, and professional development activities to provide students with more integrated leadership development experiences.

But an institution-wide vision and college level support will remain theoretical unless and until individual faculty in the classroom make the commitment to initiate change. This is precisely where we focused our efforts when we created an experimental course, "Core Competencies for Engineering Leaders". This course addressed student and industry expectations for formalized leadership development and offered pressure relief for other high-enrollment introductory core Engineering courses that are currently over capacity. After three successful semesters, the course is poised for continuation and growth to scale up to meet the increasing demands. The remainder of the paper will focus on the creation, evolution, and future growth plans for the course, and will point to lessons learned that can assist in adaptation for other institutions.

Evolution of a Course – Design and Structure

The authors of this paper, with feet planted in academia, industry, and our community, observed a gap in our curriculum that needed to be addressed. Industry was looking to hire engineers with a set of skills and experiences we felt our undergraduates were not adequately receiving. We also perceive a growing need for our students to have global awareness and community involvement to be better able to act as stewards of the engineering discipline throughout their careers. In response to this need, we developed a course to address two main objectives intended to develop future leaders by:

1. Raising awareness, appreciation, and knowledge of leadership to help make informed and intentional choices about professional life;
2. Engaging in experiential service learning to develop and apply critical leadership skills.

In 2008, with funding from the College of Engineering's "Engineer of 2010" program to fund innovative curricular projects, we developed a Junior/Senior level leadership development course for students holding leadership positions in student organizations. Student feedback from four

semesters of this course told us that they would have benefited from this course had it been offered earlier in their college career – ideally their first year.

In response to this feedback, with the support of the Pieper Foundation (srpieperfamilyfoundation.com), and under the leadership of an endowed professorship for Servant Leadership, we created and launched a pilot course in Fall 2011 for 25 incoming first year students. One course enrollment slot was open during each summer orientation session until the course filled. Quickly we had a waiting list of additional students wanting to enroll, so in Spring and Fall 2012, the enrollment cap expanded to 35. Each time the course filled to capacity. As we write this paper, we are considering feasible models to gradually expand the enrollment such that we can meet the demand while maintaining the integrity, rigor, and intimacy of a small group learning experience – a central feature of the course.

The course content is framed by the Social Change Model of Leadership Development (Astin 1996) and a commitment to Servant Leadership (Keith 2008). It is based on the premise that leadership is not simply a place of positional authority. Rather, leadership is a process that can be learned, and includes a *responsibility to act in service to others* rather than a role of *exerting control over others*. Everyone has the potential to be a leader, but it takes intentional development – a purpose this course is designed to meet.

The 15-week semester is sequenced in four themes intended to engage students in four phases of development: 1) understand historical context and landscape of leadership, 2) develop a framework for action, 3) apply skills to move from concept to action, and finally 4) reflect on what they learned to craft a plan of action for ongoing future growth and development. Their movement through these four themes is reflected in our pedagogical approach that advances course content by increasing the complexity of course assignments throughout the semester. Our method of delivery and engagement also progressively puts more responsibility and autonomy on the students as the semester progresses.

The course structure is designed to build a learning community where small group learning experiences serve as a central feature. Learning community development requires more than simply putting students together in groups and sending them on their way to do their work. The groups are designed to be as diverse as possible across multiple dimensions to enhance student learning (Page 2007). Our approach is based on the four primary principles of learning communities as defined by Brower and Dettinger (1998):

1. Shared learning and discovery,
2. Meaningful interactions,
3. Connections to out-of-class activities,
4. Inclusive learning environments.

To meet the learning community challenge of maintaining small group experiences on a large campus, we engaged a group of upper level undergraduate Student Assistants (SA's) to help teach the course. We hire enough SA's to maintain a student:instructor ratio of 7:1, an optimal

group size for meaningful and inclusive exchange of diverse ideas (Zander and Cartwright 1968). The challenge of scaling up for even larger enrollments will be further addressed later in the paper.

The course also integrates ample time for individual reflection such that the performance and learning of more introverted students is not compromised. As Susan Cain writes, "we should actively seek out symbiotic introvert-extrovert relationships, in which leadership and other tasks are divided according to people's strengths and temperaments", (Cain 2012).

"Who" Are We as Teachers and Who Are Our Students?

Many faculty primarily trained as researchers face the "imposter syndrome" – the feeling that we do not know what we are doing when we step into the role as teachers (Clance 1985). Ambrose, et al. (2010) write, "Principles of learning apply to instructors as well because, when it comes to teaching, most of us are still learning. Teaching is a complex activity, and yet most of us have not received formal training in pedagogy." This sobering insight leads us to ask questions about ourselves and our students. What do our students need and what do they want (these are often times not the same)? Who are we, as teachers, and how can what we have to offer fulfill the needs and wants of the students?

As teachers, we are expected to have the answers and are not accustomed to publicly acknowledging when we are struggling through our own learning. Throughout the course development process, we often found examples when we needed to once again become learners ourselves.

As an example, we realized we needed to appropriately embrace technology and social media as a viable means of engaging with students. Our familiar approach largely relied on face-to-face in-class interactions. What role could, and should, technology play in the course to enhance learning? To what extent do we pursue hybrid or blended learning opportunities as detailed in Garrison and Vaughan (2008)? Do we move mini-lectures to online recordings to view outside of class? Do we create a course Facebook page? Tweet with our students? Hold online "office hour" chats? These, and many other options, are currently under consideration as the course continues to evolve and we continue to learn.

We also found areas where we had to set aside our personal preferences because they were out of alignment with, or not fully inclusive of, the diverse student needs. In the spirit of Robert Greenleaf's model of Servant Leadership "to serve first" before aspiring to lead (Greenleaf 1977) we needed to step back and understand how this course could serve our students. Our work with the Center for the First Year Experience (newstudent.wisc.edu) strengthened the course by solidifying the way we integrated course content with the process of their first year transition to college (Ward-Roof 2010). The course was brought to life as we grounded it in the student experience, informed by real world applications, and framed by academic theories and models.

The course requires a lead instructor with experience in industry and the classroom, and the ability to connect with students without appearing to be too far removed from the realities of their lives. Where there were gaps in real world experience, we filled them with campus, community, and industry guest speakers, always mindful of avoiding the pedagogical model of disconnected "talking heads" popping in and out to cover a variety of topics. Where we found disconnects from the student experience, we relied on the SA's and students to bring their wealth of relevant, creative, thoughtful, and engaging student experiences into class to learn from each other.

At times it was not easy or comfortable turning over control of the course to learn from the students and SA's. Stepping out of our roles as teachers to once again assume that of a learner runs counter to the traditional faculty culture, yet may be exactly what we need to do to connect with our students. In David Damrosch's book about reconceptualizing the university, he writes, "If genuine academic reform is to occur, this community needs to be more fully understood and then creatively reconceived" (Damrosch 1995). With this in mind, we now turn to the question, *how can we creatively reconceive our approaches to teaching?*

"What" Are We Teaching, and "How" Are We Teaching It?

One approach to the question of "how" that resonates with engineers is the concept of backwards design (Wiggins and McTighe, 2006) a design approach adapted for curricular reform. Backwards design starts with the end goals in mind and works "backwards" toward the pedagogical practices and content needed to reach these goals. As an institution, the UW-Madison is committed to the broad set of Essential Learning Outcomes (ELO) as the starting point, and to a to a set of High Impact Practices (HIP) that provide an array of engaging and actionable options to align learning activities with course goals. Sandwiched in the middle are assignments and forms of assessment that serve as mechanisms to help students demonstrate their learning gains (Figure 1).

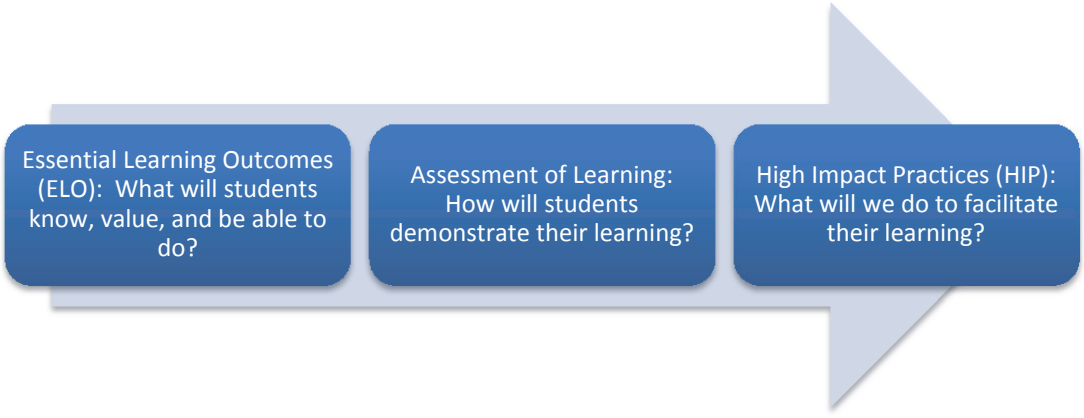

Fig. 1. Essential Learning Outcomes (ELO) and High Impact Practices (HIP)

Applying these steps to the leadership course, we started with the four overall objectives of engineering education listed in the introduction: 1) increase diversity, 2) expand our curriculum,

3) shift our pedagogical framework, and 4) maintain the rigor and quality of education. Specific course objectives are for students to reflect on, and demonstrate knowledge of:

10. A personal vision for their professional future and the spectrum of career opportunities available,
11. How their strengths, leadership potential, and development needs can help them achieve their personal vision,
12. The leadership roles that engineering professionals can play in service to a breadth of technical, social, political, environmental, economic, and global issues,
13. How to access resources to assist ongoing leadership development beyond this course.

We also developed a set of experiential course objectives for students to be able to:

14. Comfortably and professionally communicate directly with peers, practicing engineers and adult professionals,
15. Apply and reflect on the "Seven C's" of the Social Change Model (Astin 1996) through engaging as Servant-Leaders (Keith 2008) in a stewardship service project,
16. Apply teamwork and leadership skills necessary to embrace individual differences and help groups collaborate on shared aims and values,
17. Use new skills, tools, and insights to advance ideas from concepts to action,
18. Craft an action plan for future leadership development.

Students enter college at different levels of ability for each of these objectives, but they all begin with a basis. Rather than further stratifying students into predetermined tracks based on their entry point, we wanted to engage all students and help them advance their learning, regardless of where they started. Bloom's Taxonomy (Bloom et al. 1956) widely used over the years to define levels of the cognitive domain of learning, provided a basis to consider how to engage students at all levels of development. Since its original inception, Bloom's model has been critiqued as being too sequential and simplistic, and exclusive because it was develop by and from the experiences of colleges-aged male students (Hogsett 1992). Hogsett's critique is valid, and provides a more comprehensive insight into the subtleties and complexities of our cognitive development. Yet there are parts of Bloom's original model that remain useful. Statistician George Box's famous saying that, "All models are wrong, but some are useful" is particularly salient here. With Hogsett's critique, Box's invitation to take what is useful, and Anderson and Krathwohl's work that further refined Bloom's work with nineteen specific cognitive processes (Anderson et al. 2001) we have a useful framework to determine learning objectives and learning activities for the course. Table 1 illustrates how the refined model of Bloom's Taxonomy was coupled with the primary assignment types to addressed the various levels of learning.

Reflective writing, a useful professional skill to develop (Brookfield 1995; Schön 1983) is used as a primary mechanism to help students meet the course objectives. The course incorporates a combination of in-class real-time brief reflective writings, weekly unrefined homework submissions, and deeper, more comprehensive writing assignments to help students process, synthesize, and analyze their learning.

Assignment Type	Modified Bloom's Taxonomy *(Anderson, Krathwohl, and Bloom, 2001)*					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Reflections and written homework	Recognize Recall	Interpret Summarize Compare Explain		Differentiate Organize	Check Critique	
Course project			Execute Implement			Plan Generate Produce
Out-of-class activities			Execute Implement			Plan
In-class attendance & participation		Interpret Exemplify Summarize	Execute Implement	Differentiate Attribute	Checking Critique	Generate

Table 1. Modified Bloom's Taxonomy Aligned with Assignment Type

An example of how the generic table above can be applied to each of the specific course objectives is shown in Table 2 for Objective #7, "Apply teamwork and leadership skills necessary to embrace individual differences and help groups collaborate on shared aims and values". This completed table illustrates how each assignment type addresses some (but not all) levels of Bloom's taxonomy, and how collectively all assignments fulfill all levels.

<table>
<tr><td rowspan="2">Assignment Type</td><td colspan="6">Modified Bloom's Taxonomy (Anderson and Krathwohl, 2001)
[Applied to Learning Objective#7: Developing Teamwork Skills]</td></tr>
<tr><td>Remember</td><td>Understand</td><td>Apply</td><td>Analyze</td><td>Evaluate</td><td>Create</td></tr>
<tr><td>Reflections and written homework</td><td colspan="2">Weekly informal reflections, and periodic formal written homework assignments about group process</td><td></td><td colspan="2">Weekly informal reflections, and periodic formal written homework assignments about group process</td><td></td></tr>
<tr><td>Course project</td><td></td><td></td><td rowspan="2">Project team formation & execution to implement out-of-class project</td><td></td><td></td><td>Project team formation & project creation</td></tr>
<tr><td>Out-of-class activities</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>In-class attendance & participation</td><td></td><td colspan="5">In-class discussions to understand connections between, and application of, course content to project creation and implementation. Analysis and evaluation come from lessons learned through implementation and peer review.</td></tr>
</table>

Table 2. Table 1 Applied to Specific Example of Group Work

Student Data: Early Signs of Success and Suggestions for Improvement

We are currently working to obtain student consent to be able to more fully report on detailed student feedback and assessment results (see Lessons Learned and Future Work section below). At this point, we can report aggregate data from the end of semester student online survey that had a 100% response rate. The survey combined Likert scale rankings as well as open-ended free response questions. The results from the questions most salient to this paper are reported below.

	Question	Percent who agree or strongly agree
1.	I have many opportunities to discuss course content directly with my instructors.	97%
2.	I get help from my instructors quickly when I need it.	97%
3.	I feel comfortable discussing course content with my instructors.	97%
4.	My instructors care very much whether I learn the course content.	97%
5.	I have opportunities to work with other students.	94%
6.	I feel comfortable discussing course content with other students.	94%
7.	Interacting with other students greatly increases my learning.	79%
8.	My interest in this class is very high.	67%
9.	I feel like I am learning the course content successfully.	91%

These data show that we have been successful in bridging the gap that frequently exists between students and instructors. Students feel like the instructors are accessible, caring, and responsive to their needs. Interestingly, in the free response portion of the survey, the students make no distinction between the role of the faculty member and that of the student assistants. The student comments strongly indicate that the SA model of instruction was appreciated, effective, and valuable. This is further validated by the responses to Question #9 that shows 91% of the students feel as if they were successfully learning the course material. The SA model is a scalable model that will be further explored in the next section.

A brief mention of areas of improvement is warranted here and will be further expanded in the Lessons Learned and Future Work section below. First, although 79% of the students found that student interactions greatly increased their learning (Question #7), it is significantly lower than the positive responses regarding interactions with the instructors. Peer interactions are a significant element of the course structure, yet 21% of students are not greatly benefiting from their interactions with their peers. This is an area to further explore to determine ways to increase the benefit of peer-to-peer interactions.

Furthermore, the student responses to Question #8 indicate that fully one-third of the students do not find the course highly interesting. Since the purpose of this course is to engage first year students in developing their leadership skills and their understanding of engineering as a discipline, we need to learn more about why these students are not finding it interesting.

Regardless, the responses to the rest of the survey indicate that the vast majority of students are engaged with the instructors and feel as if they are learning the material. This will undoubtedly help them make informed choices about their major.

Growing Pains: Issues of Scale and Content

Three primary issues emerge when we consider scaling up the course to accommodate larger enrollments: time, money, and quality of learning. The small group, flexible, writing-intensive model presented thus far works well for 35 students. How can we scale up to accommodate increasing enrollment and maintain the intimacy of a small group feel without exceeding our limited course budget and over-extending the faculty? And, how can we provide a meaningful, grounded, and foundational learning experience about leadership that helps launch students toward continued learning and application throughout their college experience (and ultimately into their career)? We found the SA model as a viable model to address all three of these challenges.

Issues of Time and Money
To scale up, faculty need to release our felt need to be the central source and channel for content delivery. We need to be open to, and rely on, the Student Assistants to facilitate the small group learning process and provide them with experiences as peer teachers and leaders. We invested time for SA orientation up front (4 hours) and throughout the semester (45 minutes-1 hour per week) to emphasize grading, student-led discussions and group work. This investment allowed SA's and students to focus on discussing and relating to the course content rather than being bogged down by the dynamics of dysfunctional groups.

The grading was equally shared amongst the faculty member and all SA's, thus reducing the overall load and time commitment on the faculty member. As illustrated in the data above, this did not have a detrimental effect on the student's learning or their perceptions of the role of the faculty member. Rather, it proved to be mutually beneficial. Freshmen students and SA's alike had an engaging learning experience, and it helped bridge the age and "relevance" gap between the faculty and first year students by offering a one-on-one senior peer instructor model.

Over time, this model can become self-sustaining as we build in a succession model by inviting students who took the course during their first year to return in future years to teach as SA's. This self-sustaining approach also reduces the SA orientation needs and maintains consistency and quality through the years. The course is currently too young to have fully implemented this succession model, though one current SA was a student during the pilot offering. Her involvement in the course for multiple offerings has proven to be valuable.

A strong team of SA's serves as a leverage point for growth as the faculty role becomes one of setting the overall content and direction of the class, facilitating the progression of the class at the large group level, and mentoring the SA's to lead their small groups. The SA's gain first hand real world professional experience working with a faculty mentor to help them manage their small groups, provide peer review for the students, and guide them in their role as a

"Project Manager" to work with students on their semester projects. They also practice communication skills while leading mini-presentations and facilitating small group discussions in class. SA's are also seen as role models for the first year students and engage with their "boss" as they are expected to provide formative feedback about the class and the faculty member.

The SA model proved to be financially viable. SA's are paid undergraduate hourly wage for approximately six hours per week. The faculty member counts this course as part of their normal teaching load. We are considering options for SA's to use their teaching experience as a project for a yet-to-be-developed advanced leadership seminar they can opt to take for credit in lieu of receiving payment. This credit-based approach to working with SA's further sustains the course as a financially viable and scalable model, builds in succession planning, continuity and quality of instruction, and provides a path for leadership development for students throughout their undergraduate experience.

Issues of Quality of Learning

With a commitment to release the need to be the single instructor and sole source of information and content, it becomes easier to find ways to facilitate a process of laying a common direction for all, then turning it over to students to make meaning. Rather than assuming that students are clean slates when it comes to leadership, we assume that each student has a set of experiences upon which we can build. Today's students are more globally aware than our students were just 10 years ago and are better connected to the vast resources available at their fingertips. What is often missing, however, is a maturity for information literacy to discern useful, relevant, and legitimate information. To address the issue of engineering content coverage, personal relevance, and information literacy, we remain flexible to build lessons around current events that reinforce the core content of leadership development.

For example, during the Fall 2011 semester, *Time* magazine published an article about the failure of the Nano-car – an automobile manufactured in India, marketed throughout the Far East and Europe (Thottam 2011). The short article highlighted the combination technical, cultural, political, and economic issues that led to the product failure. The story provided an opportunity to explore a case study that connected real life engineering issues with recent classroom discussions of leadership skills, culture, personal communication styles, and benefits of diverse groups for brainstorming. Using a brief in-class self-assessment on information processing styles (brainstormer, problem solver, doer, and processor), we grouped students by like-style and gave them the short, densely packed article to read during class. We then asked them to brainstorm a list of all factors that led to failure of the car (at least 10 were cited in the article). As expected, the brainstormers jumped right in and developed a long list of factors on the white board. The processors took their time to think and plan before committing any words to the board. The doers and problem solvers wanted to skim the article and jump in to solve the technical problem before listing all the contributing factors.

In the middle of their group process, we paused to highlight a few key points. The purpose of the activity was not necessarily to fully understand the problems and solutions for the Nano car.

Rather, the purpose was do demonstrate, through a relevant and current engineering example, how their individual and group tendencies play out in a semi-realistic workplace setting (e.g. brainstorming solutions for an engineering problem) and make direct connections to course content.

Another example of pausing during the regular flow of class to take advantage of a leadership learning moment took place when we experienced a failure of classroom communications. Nearly half the class missed changes to the details and due date for an assignment that was announced in class. During class the following week, we explored the situation as a case study and connected it to lessons on communication breakdowns. (The changes were announced last week. What happened such that half of the class did not respond to the announcement?) Abstract and theoretical models of communication breakdowns were brought to life by making direct and real time connections between course content, an event that they were experiencing that related to their life, and consequences of poor communication.

The "Not-So-Hidden" Curriculum

Both of the examples above required the instructor to go "off script" to engage students. The benefits of doing so can be considered part of the hidden curriculum, or "lessons which are learned, but not openly intended" (Martin 1983). Though not explicitly stated, all four of the challenges mentioned at the outset of this paper are addressed by these "hidden lessons". We expand our curriculum by shifting our pedagogical framework such that the rigor and quality of learning is not compromised.

This approach also creates new entry points through which students can approach the course lessons that helps diversify our enrolled student population – rather than a "one size fits all" approach. Doing so addresses the achievement gap - discrepancies in our educational institutions that tend to unintentionally benefit majority populations over underrepresented minorities (KewalRamani et al. 2007). The underlying issues and root causes that lead to the achievement gap are deeply embedded in our society and have a long history that will not be resolved overnight, or within a single course. But that does not mean we should not address this critical issue whenever and wherever we are able. For this course, we used the engineering concept of "universal design" to address a common critique that efforts to close the achievement gap amount to preferential treatment for minorities at the expense of majority students. Universal design fundamentally states that there are effective designs that can benefit all, and may disproportionately benefit those who are most in need (think sidewalk curb cuts intended to help those in wheelchairs, but also assist others in maneuvering from the sidewalk to the street level). This same concept can be used in educational design for learning experiences that are good for everyone, but may disproportionately benefit those most in need.

There is also a hidden agenda to address naysayers who believe that leadership development on a larger scale cannot be done amidst tight budgets and dwindling resources. The existence of a scalable model that engages students early in their college career and involves alumni, industry, and the community can help get the next rung of faculty and administrators on board who may

currently be resistant to change or hesitant to get involved. The existence of this type of course offering can help with alumni and industry relations by providing campuses with something tangible to point to that says, "this is what we're doing to address the need for leadership development". Good community, alumni and industry relations benefits fundraising, engagement in career fairs and hiring practices, and overall positive community public relations.

Finally, let's not lose sight of the impact on the students. A course like this, in their first year shows institutional commitment and embeds the importance of leadership from the start to help students establish critical skills that will carry with them throughout their college and professional careers. We have existence proof that iterative change can happen without wholesale curriculum redesign - though that may be what is ultimately needed.

Lessons Learned and Future Work

The specific lessons learned are too numerous to fully cover here, so they are presented below as five broad lessons.

1. Engage in teaching as a research endeavor (CIRTL 2012).
2. Forge campus and community partnerships with functional roles.
3. Situate tradition within the context of diverse contemporary and future needs.
4. Make a large campus feel small.
5. Commit to implementation despite real and perceived barriers.

Teaching as a Research Endeavor
The first lesson learned is to anticipate success by creating a plan that fulfills our professional obligation to disseminate successful models for adaptation by others. Engage early with your Institutional Review Board (IRB) or Human Subjects Research Committee so that you can use course evaluations, student work, and other student data to share with others. We are in the process of doing that now and are not yet able to fully report on our findings. At this time, we can only report in aggregate our general observations without more specific student data. As reported above, however, we can confidently say that students have made gains in all of the stated course objectives. We have also discovered other unanticipated benefits that support the course structure and pedagogy as a successful model worthy of continuing.

Campus and Community Partnerships
Fundamentally, we learned that there is a need and a demand for student leadership development in many forms. When each of these multiple forms exists in isolation, we fragment the student experience and deep learning and application becomes more of a challenge. To the extent possible, we recommend nurturing collaborations and partnerships with multiple units on campus and the broader community to bring a richer experience to our students. Doing so helps broaden and connect the student experience, ground it in reality, and forge unanticipated connections. For example, throughout the course, we had defined, functional, and purposeful course connections with the following campus and community organizations:

- College of Engineering Student Leadership Center *(slc.engr.wisc.edu)*
- College of Engineering Career Services (ecs.engr.wisc.edu)
- College of Engineering Student Orientation and Registration (newstudent.wisc.edu/soar)
- Center for Leadership Involvement, Adventure Learning Program, and Leadership Certificate (cfli.wisc.edu)
- The Morgridge Center for Public Service (morgridge.wisc.edu)
- Center for First Year Experience (newstudent.wisc.edu)
- Multiple local engineering firms
- Dozens of campus alumni
- Multiple campus student organizations

Initially, forging these connections took significant time and energy. However, we embraced it as an investment in the future, and now that they are established, the maintenance is minimal. We are reaping benefits beyond or initial expectations and find that we are contributing to the future of our students, the future of advancing the mission of our campus, and more broadly for our society.

Balance Tradition with Diverse Contemporary Needs
The course content must balance a respect and understanding of tradition while embracing contemporary and future needs. It must be relevant, real time, and interesting from the student's diverse perspectives. The diversity represented by any group of students is profoundly larger than a single instructor, and must be intentionally included as a core construct of the course. This proved to be true with both the SA's as instructors/learners, and with the first year students as learners/peers. Both the students and the faculty benefit from releasing control in the classroom to allow the students to take ownership of their learning. Some of the most insightful learning came from students, so the faculty member must be open to allowing that to happen.

Make the Large Feel Small
Especially at large public universities, we need to find ways to make a large campus feel small. The vast majority of a first year student's academic life exists outside the classroom amidst a swarm of humanity, often times much larger than their hometown and high school experience. As faculty members, we need to find ways to stay connected with student life outside of class and decrease the barriers that exist between us and our students. We need to be seen as human, approachable, and empathetic.

At the University of Wisconsin-Madison, we are fortunate to have access to the Wisconsin Collaboratory for Enhanced Learning, WisCEL (wiscel.wisc.edu). WisCEL is, "an innovative approach to learning that combines deliberate choices of physical environment including multi-use spaces, technology that supports both peer-collaboration and self-paced learning, and software which provides immediate feedback to students on assignments and exams and allows increased instructor time with students." (WisCEL, 2012). If a space like WisCEL is not available on your campus, consider space at the student union, or even with small groups in a department conference room. The key point is to get out of a traditional classroom to open up

options for a different kind of thinking, learning, and teaching that more closely resembles a workplace environment.

Commit to Making it Happen
Several influential leaders throughout history have made the call for change by saying, "If not us, who? If not now, when?" It can be difficult to overcome the inertia of inaction because of perceived barriers. We can always find a reason to *not* do something (time, money, lack of support, uncertainty, etc.). It is also easy to sit on the sidelines and hope someone else acts in our stead.

Continued Improvements and Future Work
The mid-course and end-of-semester evaluations, and final student projects indicate that the first three offerings of the course have been successful. Yet the nature of this course, the evolving role of leadership in engineering, and the growing demands for enrollment point to several areas for future work and development.

We need to expand our efforts to continue leadership development beyond the first year experience. To that end, we will explore ways to more intentionally connect with students on internships and co-ops as they are gaining real world experience. As the course expands and requires a larger pool of SA's, we can explore an upper level cohort model for an advanced level leadership seminar for the SA's. We also want to remain connected with our students after graduation by building in more points of interaction with alumni once they enter the job market.

Course activities will continue to evolve as we experiment with new ideas. Field trips to local engineering companies, expanded connections with campus and community organizations for service projects, and the growing spectrum of creative classroom activities from SA's will be integrated into future semesters. With this growth comes a need for a more defined course infrastructure. Online resources, banks of readings and course manuals for leading various course activities, and moving some boiler plate lecture material to an online environment are all avenues to pursue to create a course knowledge base and infrastructure for the future. Finally, a more formalized approach to educational research is needed to show baseline data and demonstrate impact.

Adapting to Other Institutions

Every institution has its own culture complete with opportunities and obstacles. The details above provide specifics for how we planted seeds for success at our institution and plan to grow. The guidelines below provide some touchstones to consider when adapting to your institution.

1. *Embrace the existing culture.* For many institutions, curricular reform to consider leadership development may not be a top priority. Your starting point may be student organizations, co-ops and internships, campus partnerships, or perhaps faculty development. Regardless of the starting point, an understanding of the current realities of

your institutional culture is critical to knowing how to work within it as you advocate for further involvement in leadership development.

2. *Start small and grow.* Successful places to start will require leverage points with high potential for short-term impact. Our starting point was a pilot course for 25 first year students. We knew there was interest, we had top-level support, and we had a need to relieve enrollment pressures for other introductory courses. Your starting point may differ, but start somewhere.
3. *Allow multiple entry points for involvement.* Provide ways that individuals can engage in your efforts with varying levels of involvement including advisory, advocacy, planning, and central involvement in implementation. If structured well, everyone interested can find a way to contribute at any level of involvement.
4. *Work with the "choir".* Understand that some people may resist or have no interest in getting involved, so start with those who are receptive. Ask yourself, "Who are the 10% committed core I can rely on?" Then find ways they can be actively engaged. Do not ask for, or expect much from uninterested individuals, but also be cautious to not be exclusionary. You may be surprised at who is interested in getting involved if you genuinely invite them and have a role they can play in the effort.
5. *Collaborate with others beyond the "usual suspects".* Where you have a need you cannot fulfill yourself, engage with others on campus and the community. Realize that each person will have their own personal motivators, level of readiness to engage, and ability to commit, so meet them where they are and co-create a mutually beneficial role.
6. *Seek frequent and honest feedback.* Be intentional about requesting feedback in multiple formats and from a broad spectrum of individuals. Then, be responsive to what you learn. This may require a thick skin, but will ultimately result in a more inclusive and sustaining initiative.

If Not Us, Who? If Not Now, When?

There are tangible and substantial ways engineers can engage in addressing the grand challenges of our time if they have the requisite leadership skills. For readers who feel this work is a distraction from the core technical curriculum of engineering, we ask that, at a minimum, you do not create obstacles for others who want to engage in this work. For readers who remain uncertain or unable to dedicate the energy necessary to take on a new course like this, we invite you to consider other ways you can engage in leadership development that are less time intensive and fit your current situation. For those of you inspired to take action, we hope this paper has provided you with some insight into how to take the next steps.

As educators, we can model for our profession what we would like to see on a global scale. Technical skills, individual motivation, and good intentions are necessary, but not sufficient conditions to have the scale of effort we need to make progress. We also need intentional leadership development to move from idea and intent to implementation and impact. For those of you motivated by this challenge, developing a course like the one presented in this paper can provide a next step in the journey. Whether your are an administrator looking to initiate change, a faculty member searching for ways to broaden your influence, an alumni looking to give back

to your school, or a student looking to jump start your career, we all can have a role in these efforts to make a difference in our world.

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Appendix F
Coordinated Leadership Initiative – Draft Framework

UNIVERSITY OF WISCONSIN - MADISON

Executive Summary

Coordinated Leadership Initiative

Development of UW-Madison's Leadership Framework

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July 18, 2013

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COORDINATED LEADERSHIP INITIATIVE

Development of UW-Madison's Leadership Framework

Executive Summary

In fall 2012, a Leadership Educators Council (LEC) Planning Team convened to meet bi-weekly throughout the 2012-13 academic year with the charge of developing a theory and research-based Leadership Framework grounded in the history and values of UW-Madison. The Framework is designed to serve as the initial stage of a Coordinated Leadership Initiative (CLI) that can help to align and connect existing campus leadership development opportunities, shape and inform the development of new opportunities, and allow for a more formal and intentional analysis of campus needs to highlight gaps and redundancies.

This effort benefitted from institutional support in the form of executive sponsorship from the Dean of Students and Provost and also included broad representation from multiple units and functional roles across campus serving as members of the LEC Planning Team. The Planning Team operated under the guiding principles of being inclusive, accessible, decisive, and uniquely Wisconsin such that we remained consistent with the culture and history of our institution. Four subgroups were formed to deeply explore primary data sources that would serve as the basis for the Framework: 1) research and scholarship, 2) existing leadership programs, 3) institutional values, and 4) outreach and feedback. The findings of each subgroup were then presented, analyzed, and distilled into the resultant Framework (see pages 2-6) that consists of three primary elements:

I. **Values** – a set of cultural beliefs or ideals consistent with our University's history and mission. These include integrity, inclusive engagement, and connection to community.
II. **Competencies** – skills, abilities, and knowledge sets that can be taught or developed. These include self-awareness, interpersonal communication, supporting learning and development of others, decision making, fostering deliberation and bridge-building, honoring context and culture, and moving ideas into action.
III. **Outcomes** – detailed, specific, measurable or identifiable, and meaningful statements derived from the competencies being enacted for the purposes of initiating and supporting change in an individual, group, or communities' beliefs, values, or behaviors.

With these three core elements drafted, the CLI now moves into the next phase that will pursue an outreach and vetting plan to engage a broader group of diverse stakeholders across campus, solicit feedback about clarity and usefulness, and to explore the myriad of ways individuals and groups can utilize the framework in their local contexts. In addition to the expected uses for staff development and student curricular and extra-curricular alignment, as the CLI continues to evolve, we also anticipate many additional applications of the Framework that have not yet been considered. A website is under development that will aid in the ongoing communication for feedback, sharing of resources, and dissemination of best practices, events, and leadership development opportunities.

UW-Madison's Leadership Framework

This Framework is based on the principles that (1) leadership is an action oriented endeavor and not based on position or level of authority and that (2) context matters – each situation requires unique engagement. The Framework presents a working understanding of how to engage in the act of Leadership - understood as the phenomenon of change in an individual, group or communities' beliefs, values or behaviors.

Values

The Leadership Values are a set of cultural beliefs or ideals that are consistent with our University's history and mission. They serve as a foundation for the leadership framework and help to support the work of leadership development and leadership outcomes.

INTEGRITY

Transparency and truth are central touchstones for integrity. We strive for transparency of information and processes, because we believe openness and accessibility facilitate trust, particularly when there are diverse and divergent perspectives on an issue. We hold ourselves accountable to reach decisions through an ethical process and accept responsibility for acting in the interest of all stakeholders.

INCLUSIVE ENGAGEMENT

The heart of leadership is the art of inspiring active, informed engagement and decision making in the pursuit of the common good. Inclusive Engagement is the process by which we strive to seek and value the input of all, thereby realizing the benefit of the breadth of intelligence among us. At its core, Inclusive Engagement values the crucial knowledge and contributions of us all.

CONNECTION AND COMMUNITY

Leadership requires working *with* communities rather than working *on* communities by identifying, aligning, and pursuing goals that are mutually beneficial for all people impacted. With humility, we seek to foster active partnerships rather than imposing solutions.

Competencies

Leadership Competencies are skills, abilities, or knowledge sets that can be taught or developed. All competencies have indicators that allow them to be observed and measured.

SELF-AWARENESS

Consistent self-reflection helps to reveal strengths, limitations, beliefs, values and attitudes that generate engagement. A commitment to personal development provides greater understanding of multiple identities and experiences that affect the ability to facilitate change.

INTERPERSONAL COMMUNICATION

Develop essential relationships through listening, considering and responding to the needs of individuals and the situation. The ability to communicate in tactful, compassionate and sensitive ways enables these relationships to evolve.

SUPPORTING LEARNING AND DEVELOPMENT OF OTHERS

Develop capacity and engagement of individuals and groups through feedback and coaching.

DECISION MAKING

Make decisions that impact others and the organization in which the decisions are made. Employ critical and strategic thinking that enable creative solutions to be considered and pursued. With important systemic dimensions in mind, analysis and ideas from multiple sources give way to implementation and evaluation.

FOSTERING DELIBERATION AND BRIDGE-BUILDING

Through cooperative participation, encourage everyone to take ownership of the work that is being done and the outcomes that are created. By creating an environment where differences are appreciated, conflict can serve to expose new solutions to complex problems.

HONORING CONTEXT AND CULTURE

Seek to understand the organization, culture, system, politics, and dynamics and their impact on actions needed to achieve the group's goals.

MOVING IDEAS INTO ACTION

Offer a compelling vision that inspires groups to engage in the ambiguous transformation process. Co-creation processes focused on common goals require steady, yet flexible, interventions based on evaluation and the needs of the group.

Outcomes

Leadership Outcomes are detailed, specific, measureable or identifiable, and meaningful statements that are derived from competencies being enacted for the purposes of change in an individual, group or communities' beliefs, values or behaviors. The Leadership Outcomes Matrix outlines what outcomes can be generated when specific Leadership Competencies are executed while living the Leadership Values. This matrix primarily focuses on individual-level behavioral practices and is not intended to serve as an exhaustive list.

	Integrity	**Inclusive Engagement**	**Connection and Community**
Self-Awareness	• Create processes for open communication and dialogue • Value fact-based information • Ensure transparency for the scrutiny of all the group's stakeholders • Maintain focus on truth over achievement • Think, feel, and behave with consistency, genuineness, authenticity, and honesty towards others • Understand personal motivations to serve and how it relates to the collective effort • Commit to working hard and continuous learning • Understand one's own culture and context and how it impacts participation	• Reflect on personal beliefs, values, attitudes, and emotions that motivate one to take action • Create structures that provide opportunities for feedback and reflection • Appreciate the knowledge, talents and contributions of those in the community • Recognize the value of broad community participation in creating change • Understand own strengths and limitations • Engage others who complement group and individual limitations	• Evaluate and be attentive to the degree of participation among group members • Demonstrate humility • Ensure each member is part of goal attainment • Share ownership in the work and results of the group's efforts • Build awareness of one's impact on the dynamics and needs of the group
Interpersonal Communication	• Encourage open and honest communication • Appropriately address anxiety and conflict • Model vulnerability by actively disclosing information that benefits the group	• Engage various individual and group communication strategies to draw out participation of others • Appropriately engage and support others in all stages of the process • Listen to individual perspectives and ensure they are reflected in group outcomes • Adapt approach in order to be responsive to the needs of others	• Develop trust with others in the group • Cultivate a network of peers and colleagues in diverse communities • Mediate conflict to further the group's mission • Openly acknowledge and appreciate the contributions of others

	Integrity	Inclusive Engagement	Connection and Community
Supporting Learning and Development of Others	• Lead by example to help others be authentic contributors • Provide and receive feedback for the purposes of continued learning • Support others to take risks that allows new information and perspectives to emerge	• Assess the goals, needs, aspirations of others to support growth and development • Encourage and support the participation of others in the co-creation of their community • Facilitate the learning of others by delegating work that extends current knowledge or experience • Partner in peer-to-peer learning • Provide direction to resources that support others' growth	• Engage others in community work to expand their network of peers and colleagues • Trust others to represent the group in community forums • Develop group facilitation knowledge in others
Decision Making	• Lead decision making processes with transparent criteria and goals • Help group become comfortable with making a decision without full information or agreement • Help group stay focused on the common goal • Acknowledge own self-interest and ensure it doesn't interfere with decision making process • Engage affected communities in decision making that impacts them • Exhibit personal accountability for decisions made • Demonstrate the flexibility to recognize when a decision needs to be revisited	• Create processes where all perspectives are invited and freely shared • Recognize "groupthink" and encourage alternatives • Encourage consensus building through constructive dialogue • Elicit ideas from all participants • Synthesize divergent perspectives to help move towards a final decision	• Recognize group dynamics and its effect on community • Promote collaboration within groups and with external participants • Model humility and trust for the rest of the group

	Integrity	Inclusive Engagement	Connection and Community
Fostering Deliberation and Bridge-Building	• Openly acknowledge group dynamics • Foster a culture of transparency • Value input from team members, even when it is different from others and your own • Foster a sense of trust among team members	• Recognize the importance of sharing ownership in completing critical group tasks • Identify how others want to be appreciated for their participation to support ongoing and future engagement • Identify complementary skills and ensure that teams are diverse • Reserve judgment • Ensure that the dominant groups are not overpowering	• Build consensus with the group in identifying the group's goals • Create a safe environment where participants can share differences of opinion • Appreciate the different learning styles of group members • Foster a sense of trust among community partners • Develop coalitions by aligning mutually beneficial goals
Honoring Context and Culture	• Understand the culture and context in which the group exists • Help the group both recognize the value and challenges of cultural differences • Acknowledge the impact of systemic racism, sexism, ableism, etc., on goals and activities	• Encourage full participation of all members by identifying and removing barriers • Ability to challenge what is culturally dominant or normative for the group or institution	• Identify goals that are meaningful to all • Promote trust and good will across different cultures • Demonstrate knowledge of history and cultural context of each constituency
Moving Ideas Into Action	• Recognize the inherent risk in promoting change • Appropriately manage risk • Challenge the status quo with facts and logical reasoning about its advantages and drawbacks • Demonstrate flexibility in responding to the different ways in which others are impacted by change • Explore how intended change will be sustained and supported	• Promote energy and optimism in order to move ideas into action • Create a safe environment for people to be open in expressing and working through their fears of change • Collectively define and communicate a compelling vision that enables others to pursue change	• Partner with key stakeholders in identification, development and implementation of positive change • Maintain an open atmosphere for questioning processes and impacts • Work with the community in determining where change is needed

Appendix G

Reflections from Students Who Attended the National Center for Student Leadership Conference

Tia Endres Reflection from NCSL Conference

The National Center for Student Leadership Conference was an amazing experience that I will never forget. I learned so many valuable skills that will be useful not only in my college career, but throughout my life. I applied for the conference in hopes of learning about leadership and exploring a new place, but I learned an enormous amount more than I expected to.

One of the best parts of the conference was listening to the keynote speakers, they were always so insightful. They had real experiences they could talk about that applied to everyone in attendance. Each of the keynote speakers was different too. Because of the differing speakers I learned more than I expected. My favorite keynote speaker was Huan Do because I related best to him. He gave me a lot of information that will help me live my life happier. My favorite quote of his is "Hold up that, that is Whack". I love this quote because when you say it, it makes you stop and laugh for a minute and forget the bad things.

My favorite part of the National Center for Student Leadership Conference was the workshops. I went to a lot of different workshops at the conference where I learned things like communication, negotiation, networking, storytelling, and just overall advice on life. I never expected the workshops to be as fun and engaging as they were. All of the people presenting the workshops were phenomenal. They all had real life experience that they shared to help us succeed not only in college, but for our adult lives too. I will never forget what they taught me, and I am applying what I learned at the conference to campus. As an officer of Chi Epsilon, the civil engineering honor society, I have the opportunity to become a more effective leader with the skills I have gained. Hopefully I can share with others what I learned at the conference because it is worth learning.

One other part of the conference that I enjoyed was seeing a new place. New Orleans is a beautiful city that I have never been to before the conference. After the conference activities were done for the night, we explored New Orleans. My favorite food there was the beignets and I also loved walking down Bourbon Street and seeing the interesting people.

My experience at the National Center for Student Leadership Conference was exceptional. I would recommend going to everyone. Not only did I learn a tremendous amount of information that I will never forget, but I also got to experience a new place and see new things.

Here is a picture from the conference:

Carie Fantl – NCSL Fall Conference Reflection

I am extremely fortunate to have been selected by the College of Engineering to attend the National Center for Student Leadership Fall Conference in New Orleans, Louisiana. The experience enlightened me in so many different ways—a visit to an unfamiliar place, the chance to network with student leaders from throughout the nation and beyond, and a conference that encouraged me to develop as a leader and a person. It was featured keynote speakers and workshop facilitators with incredible, engaging messages that I will carry with me for the rest of my life. The opportunity could not have occurred at a better time in my life.

The main reason this conference initially sparked my interested was to find strategies to encourage leadership within my organization. As president of BMES, I recognize that my officer team and core members are largely upperclassmen. I aspire to elevate underclassmen to this status—so that the organization does not diminish with the graduation of these key players. A workshop devoted entirely to this topic provided plenty of insight as to how to accomplish this: through empowering, challenging, and motivating members. It stressed the value in pushing members, not pulling them. It suggested creating positions for members who "get it", to increase their investment in the organization and remind them their value. And, it reminded me that as a student leader, I am partially responsible for their success. I am excited to implement strategies discussed at the conference, and excited to leave the organization better than I found it.

As I approach the end of my undergraduate career, much thought is devoted to succeeding outside of college. This conference included workshops targeted to upperclassmen, to specifically address the transition between college and "the real world". One workshop reminded attendees that "recalculation" is common for both GPSs and people…and it's a good thing! Another provided simple, valuable strategies to really connect with people—encouraging people to stop asking boring questions, and create meaningful and genuine relationships. A keynote speaker discussed personal branding, highlighting the positive impact of good posture, handshake and overall energy and attitude. One more was devoted to negotiation strategies—how to seek out mutually beneficial, win-win situations through breaking down the "glass wall" barriers that are mistakenly restricting us.

These are just a few examples of the variety that I was exposed to at my time at the NSCL Fall 2013 Conference. None of these statements are rocket science, but they are all messages people oftentimes forget. As one workshop said, life looks better when you're seeing through the right tinted glass—a positive, optimistic mindset. This conference reminded myself to do just that.

I would again like to thank the Pieper Family Foundation for this generous donation and incredible opportunity. I look forward to continuing to share the knowledge I have gained with my organizations and my University, and channel the quality leadership NSCL teaches in all future endeavors.

5-December-2013

Pieper Family Foundation,

I just wanted to take the time to send a sincere thanks and appreciation for the generous scholarship you provided myself and my fellow engineering students, enabling us to attend the National Center for Student Leadership Fall Conference in New Orleans, Louisiana this past November. I am extremely humbled to have been selected to represent the College of Engineering, and have this valuable opportunity.

The four UW College of Engineering Students, arriving at the Hyatt Conference Center in New Orleans. From left to right: Kyle Koehler, Carie Fantl, Ivan Hartanto, and Tia Endres.

The experience enlightened me in so many different ways—a visit to an unfamiliar place, the chance to network with student leaders from throughout the nation and beyond, and a conference that encouraged me to develop as a leader and a person. It was featured keynote speakers and workshop facilitators with incredible, engaging messages that I will carry with me for the rest of my life.

I look forward to continuing to share the knowledge I have gained with my organizations and my University, and channel the quality leadership NSCL teaches in all future endeavors.

Thank you again,

Carie Fantl
Biomedical Engineering
University of Wisconsin-Madison
President - BMES
fantl@wisc.edu

Ivan Hartanto Reflection from NCSL Conference

To begin with, I am speechless for just being able to make it to the event, which by far was the greatest leadership conference that I have ever been to. Leaders from all over the country gathered in one place to learn from countless brilliant and attested speakers and to connect with other leaders. The fact that it was held in New Orleans, furthermore, brought the conference to a greater level as the city provides a composed yet flamboyant atmosphere, making it perfect for a conference location. To sum it up, the conference was remarkable and I personally obtained a collection of experience as well as learned numerous skills throughout the 4 days spent there.

` Overall, I absorbed a number of experiences from the speakers, such as being gritty, forbearing, charismatic and praiseful as a leader. Listening to stories that were brought up by the speakers, I also learned to always ask whether we have pushed ourselves to the limit in doing work or whether we have given our best to our people. Furthermore, I determined being leaders mean we genuinely share the credit to our followers, have the passion & perseverance towards long term goal, empower our people instead of spoon-feed them. Another important thing that I found enlightening was that, as a leader, our desire to succeed has to be bigger than our fear of failure meaning that we can never worry about what lies in our future nor our past and concern about other people's judgment.

There are also a various practical skills sets, including negotiation, listening and networking skills that I picked up through the workshops given in the conference. To magnify our importance as leader, I am certain that such skill sets are extremely important especially once I start diving in life after college. For example, in the negotiation session, we were taught several tricks to start off a negotiation or when there is a deadlock in the diplomacy. Furthermore, there were sessions on how to start a conversation with a complete stranger in our daily life or in a networking event and sessions on how to behave in aristocracy manner to enhance our confidence towards our self, which will translate to other people's perception of us. Another interesting skill that I grasped was listening aptitude, where it turns out that listening is simply all about creating an interaction by asking questions and caring about the people instead of the contain of the conversation.

On another note, I am lucky enough to be able to create a friendship with Kyle, Carie & Tia, 3 other UW engineering students that went to New Orleans representing UW Madison College of Engineering, and hopefully we would be able to maintain and more importantly grow as a leader in UW campus as well as later in our career.

Lastly, I am truly grateful for the experience to represent College of Engineering UW Madison at such tremendous event and I would like to express my sincerest thank you to the CoE for choosing me as well as to the sponsor who paid for us to come to the event. I promise that one day, through my development as a leader, I will make UW Madison, especially CoE, proud of having me as one of their alumni.

Kyle Koehler National Conference for Student Leadership Reflection

I would first like to the thank the University of Wisconsin-Madison for selecting me to represent the College of Engineering as a student leader. I would also like to thank the family for donating this trip that allowed for me to go. After a weekend at the conference in New Orleans, LA I learned a lot of how to become a leader but also had some unique speakers that also worked on bettering my professional development. For me, I have always listened to leadership speakers and well they tell the same stories and give the same advice. Be determined, driven, and passionate: describes the attributes of a leader. I actually am taking something more than that away from the leadership conference I learned more on personal finance, negotiation as well as listening tactics that I can apply to Biomedical Engineering Society today. As an officer, every organization has to deal with funds to keep the organization going but I learned how to properly handle and what the society can do with their savings. Also I learned negotiation, which was not something I thought would apply. Every officer meeting I am amongst leaders and these negotiation or persuasion skills are needed so that I can get my point across. Lastly, listening skills are undervalued in leaders and in my eyes this was the most eye opening presentation. Most things leaders are taught is to lead more but this one gave the different idea to let others lead and you sit out and listen to everyone and then go from there. This I think can be very useful and I will apply this to my future leadership roles because it has a lot of merit to it. You cannot always talk and control the group so it can be beneficial for the organization to let others also input and share ideas. Just from this conference I am now heading a fundraising committee that is made up of general members that give me ideas on how to get new fundraising ideas in and I sit and listen and gain insight on what the members want or desire to help with. So this conference taught me a lot about leadership but the most important thing I learned was to listen.

So again thank you for this experience and I cannot wait to follow this conference and see how they are improving year to year. On Wisconsin!

Appendix H
Announcement for Student Awards for Pieper Servant Leadership Projects

STUDENT LEADERSHIP CENTER
COLLEGE OF ENGINEERING UNIVERSITY OF WISCONSIN-MADISON

Pieper Servant Leadership Project Fund
Proposal Cover Sheet

Date: _____

Primary Contact _____ **Title/Position** _____

Student Organization/Group Name _____

Email Address _____ **Phone Number** _____

Advisor Name _____

College of Engineering Department/Affiliation _____

Email Address _____ **Phone Number** _____

Name of the Proposed Program: _____

Date of the Proposed Program: _____ **Amount Requested:** _____

Brief summary (200 words max) of proposed project:

STUDENT LEADERSHIP CENTER
COLLEGE OF ENGINEERING UNIVERSITY OF WISCONSIN-MADISON

Pieper Servant Leadership Project Funds

Overview

The Pieper Servant Leadership Fund is offering financial support for UW-Madison College of Engineering students to engage in service-learning or community outreach projects aligned with The Pieper Family Foundation belief that human goodness is not simply innate; it requires action and service to others; and that character is inspired and facilitated in cultures, organizations, and families by and through the example of enlightened leadership. A total of $10,000 is available and will be distributed among projects to maximize the overall impact of the funds.

In partnership with the Student Leadership Center, the Pieper Family Foundation encourages full time students and registered student organizations to apply for funds by completing the attached proposal application form by January 24th, 2014. Grants will be awarded and winners will be notified on Monday, February 3rd, 2014.

Criteria for Selection

A successful proposal will clearly articulate responses to the questions below.

1. In what ways does your proposal put into action and support the 12 Principles of Servant Leadership (see attached)? Minimally, it must specifically address Awareness, Stewardship, Growth, and Building Community.
2. In what ways does your proposal engage yourself and others in leadership activities that extend beyond simply participation in an event or organization that is led by someone else?
3. To what extent does your proposal build on existing partnerships with other individuals and organizations to maximize the impact of your work (e.g. shared funding, combined resources, build on existing program or infrastructure).
4. Is your proposal consistent with University Rules and Regulations, and SLC policies and procedures? (It is advised that you meet with SLC staff prior to your submission to discuss applicable rules and restrictions around university funding prior to submitting a final application. Contact the SLC at slc@engr.wisc.edu or 608-263-2899 to schedule the appointment.)
5. If a proposal is accepted, the contact person listed will need to schedule an appointment with the SLC Director and Financial Specialist to discuss the program expenses, necessary paperwork that may need to be filled out, and how monies will be disbursed. This meeting must occur within two weeks being awarded the funds.

Budget Summary and Allocation of Funds

You must include a detailed budget for how you propose to spend the requested amount.

In order to support as many proposals as possible, the review committee may elect to fund portions of a proposal and encourage applicants to seek supplemental funding for the remainder.

Post-Award Requirements

Recipients of Pieper Funds must agree to complete the following. An additional 10% of the overall award amount will be dispersed to the winners following successful completion of all items listed below.

1. Successful completion of project as defined in proposal.
2. Submit 2-3 page project progress report (if project is still active), or project summary (if project is completed) to Student Leadership Center by December 31 of each year until the project is completed. Details to be included in these reports to be determined.
3. Complete a Servant Leadership Survey upon initial award of funds and at the conclusion of the project.
4. Respond to other requests for information, updates, presentations, etc. as requested by the award committee.
5. All printed materials generated for your project must include the SLC logo along with written acknowledgement that "This program is partially funded through the Pieper Servant Leadership Fund at UW-Madison".

Submission Information

To apply for funding, please submit an application cover sheet, along with a proposal that includes the following:

1. A detailed description of the project purpose, objectives, and intended outcomes.
2. Specific and thoughtful plans for how your project will address the basic principles of Servant Leadership, minimally including Awareness, Stewardship, Growth, and Building Community.
3. A list of all stakeholders involved with, and impacted by, the project.
4. A detailed action plan for how the project will be accomplished (timeline, major milestones, deliverables, coordination with other stakeholders, etc.)
5. An explanation of how this program helps to support student leadership development.
6. Justification for the funding request and how the grant money will be used specifically to support the proposal.

Please submit completed materials to:

Student Leadership Center
Attn: Pieper Servant Leadership Fund
M1080B Engineering Centers Building
1550 Engineering Drive
Madison, WI 53706
Fax: 608-261-1439
Email: slc@engr.wisc.edu

For more information about the Student Leadership Center and the Pieper Servant Leadership Program, visit http://slc.engr.wisc.edu.

Appendix I – College of Engineering Student Leadership Center Activities

STUDENT LEADERSHIP CENTER 2013-14 LEADERSHIP PROGRAMMING/WORKSHOPS

TOPIC	GOALS/OBJECTIVES	PRESENTER	AUDIENCE	DATE(s)
New Student Leader Orientation	• Communicate campus and college policy and procedure related to student organizations • Communicate expectations and college values • Discuss disciplinary procedures to ensure we all start the semester on the same page	1. Alicia Hazen, Student Leadership Center Director 2. Steve Cramer, Associate Dean 3. Eve Ferguson, Engineering Student Development Financial Specialist	All registered engineering student organization Presidents and Vice Presidents (required)	Three different days/times, with one scheduled make up session: Friday, Sept. 6th, 1:30-2:30 p.m.: **42** Monday, Sept. 9th, 3:30-4:30 p.m.: **26** Tuesday, Sept. 10th, 12:30-1:30 p.m.: **23** MAKE UP: Friday, Oct. 4th, 8:00-9:00 a.m.: **14** **Total attendees: 105** **Required: 110**
SLC Financial Training	• Go over SLC financial policy and procedures related to student org. finances • Train students on how to use the Procard • Communicate expectations for spending and receiving money through UWF and SLC accounts	1. Eve Ferguson, Engineering Student Development Financial Specialist	All registered engineering student organization Treasurers and two additional Designated Purchasing Agents per org. with a	Three different days/times, no make-up sessions: Friday, Sept. 6th, 3:00-4:00 p.m.: **44** Tuesday, Sept. 10th, 2:00-3:00 p.m.: **15** Wednesday, Sept.

			UW/SLC account (31 total)	11th, 10:30-11:30 a.m.: **15** Friday, Oct. 4th, 9:00-10:00 a.m.: **6** **Total Attendees: 80** **Required: 62**
Leadership Certificate Orientation Session	• To provide a general overview of the campus wide Leadership certificate requirements and application process	1. Donna Freitag, Center for Leadership and Involvement	Open to all students	Held on Tuesday, October 8th, 5:30-6:30 p.m. in Tong. **Total Attendees: 45**
Alternative Breaks Info Session	• To provide an overview of the campus Alternative Breaks service program, including volunteer project locations, the application process, and important dates and deadlines	1. Kelsey McCann, Alternative Breaks 2. Student Panel of past participants	Open to all engineering students	Held on Thursday, October 17th from 5:00-6:00 p.m. in Tong Auditorium **Total Attendees: 10**
Badger Volunteers Info Session	• To provide an overview of the Badger Volunteers program offered through the Morgridge Center for Public Service, including volunteer projects and options and important dates and deadlines	1. Steph Harrill, Morgridge Center 2. Megan Miller, Morgridge Center 3. Student panel of past participants	Open to all engineering students	Scheduled for Tuesday, January 28th, from 4:00-5:00p.m. in Tong Auditorium
MAKERS: Women Who Make America	• Three part screening of the documentary *MAKERS: Women Who Make America*, which captures the impact	1. Alicia Hazen, Student Leadership Center 2. John Archambault, Engineering Career Services 3. Kyana Young, Diversity Affairs Office	Open to all engineering students – targeting female	Scheduled for 1610 Engineering Hall: Friday, Feb. 7th, 5:00–

Film Series	that women from all walks of life have made in the US over the last 50 years. • To educate young women on the history of the women's movement and inspire young women to pursue leadership roles.	4. Sadie Dempsey, Campus Women's Center 5. Madeline Bouche, Society of Women Engineers	students	6:30 p.m. Friday, Feb. 21st, 5:00–6:30 p.m. Friday, March 7th, 5:00–6:30 p.m.
Lead Different: An Intro to Servant Leadership	• Team building activities will be used to illustrate essential practices of exemplary leaders that highlight principles of servant leadership. • The development of servant leaders in an organizational environment will be highlighted as participants learn how servant leadership is providing the framework for the new philosophy of leadership in the 21st Century.	• Kelvin Redd, Center for Servant Leadership , Columbus, GA	Open to all engineering students – Capacity of 25	TBA (Likely March 2014)