



UNIVERSITY OF NEBRASKA-LINCOLN COLLEGE OF ENGINEERING



FACULTY DEVELOPMENT AND MENTORING TASK FORCE

FINAL REPORT

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EXECUTIVE SUMMARY

The College of Engineering plays a critical role in the development of Nebraska's most important resource: its people. To better fulfill its role, it is necessary to optimize the talent and expertise of its faculty. It is through the faculty that students are inspired to be lifelong learners, know how to develop creative solutions to serve humanity and are motivated to identify opportunities that improve the standard of living in the state and worldwide. A strong, vibrant faculty development and mentoring program is key to faculty optimization.

Our report recommends an integrated faculty development and mentoring program be developed that employs a "family style" approach, including a mentoring network. The "family style" approach can deliver individualized mentoring and faculty development to all faculty members across a wide spectrum of needs, expectations and career goals.

INTRODUCTION AND SCOPE

The College of Engineering has recently embarked on an aggressive program of elevating the stature and influence of the college. In the last three years, the college has added 56 new faculty, including tenure-track professors, Professors of Practice (PoP), and research faculty. It is anticipated that another nine new faculty will be added in the current academic year. Roughly 25% of our faculty will be new to the college within the last four years, thus making faculty development and mentoring critical to the success of the college.

Moreover, the State of Nebraska is investing \$70 million into the construction of a new engineering building on the City Campus. With an additional \$80+ million from industry, alumni and supporters of the college, a new state-of-the-art facility will be yet another resource that can be used to elevate the stature and influence of the college and thus improve the quality of life, expand the economy of the state and create a more sustainable world.

The infusion of resources into the college will require a similar infusion of resources into faculty development to take full advantage of the opportunities made available to our college.

Task Force Goal

This renaissance within the college has prompted Dean Pérez to create a Task Force with the stated goal to “evaluate the need for faculty mentoring and professional development within the College of Engineering,” with the following outcomes:

- Recommend best practices to support faculty throughout all stages of their career
- Identify areas of programming and structural need based upon existing best practices
- Provide suggestions for connecting faculty to available programs

This renaissance will necessitate the creation of a new culture in our college to ensure that all faculty, including tenure-track and tenured professors, professors of practice and research faculty, are highly valued and have the same opportunities to excel. To create this culture, the task force will mirror and adapt best practices from other colleges, Big Ten universities, and universities worldwide that fit into the culture of our own college.

Creating a Culture of Faculty Development and Mentoring

Faculty development and mentoring are two separate programs, although they are related. It is possible to have a faculty development program without mentoring. However, faculty development is greatly magnified if mentoring is integrated into a faculty development program¹. Accordingly, we recommend that an integrated faculty development and mentoring program be developed and implemented.

¹Thorndyke, L.E., Gusic, M.E., George, J.H., Quillen, D.A. & Milner, R.J. (2006). Empowering Junior Faculty, Penn State’s faculty development and mentoring program. *Academic Medicine*, 81(7), 666-673

For the purposes of this report, mentoring is defined as follows:

*“a reciprocal learning relationship characterized by trust, respect, and commitment in which a mentor supports the professional and personal development of another (the mentee) by sharing his or her life experiences, influence, and expertise”.*²

Faculty development is defined as follows:

*Faculty development is a process by which faculty “work systematically to improve their skills in the following areas: (1) educational skills, (2) leadership skills, (3) skills necessary to engage in scholarly activities, (4) personal development, and (5) skills in designing and implementing a professional development plan”.*³

The importance of an integrated faculty development and mentoring program to our college is clear. A strong, compelling program allows the college to better leverage the new investments and to extend the benefits throughout the entire college, most importantly to the students. It stands to reason that if a faculty member is a product of a quality faculty development and mentoring program, that process of continuous improvement is bound to be replicated in their relationship with colleagues, students and future mentees.

It has been said that if strategy is the engine, then culture is the fuel. We are proposing that the college embark on a strategy where faculty development and mentoring is an integral part of the fabric of our college and is highly valued. For this culture to extend throughout the college, it must be a “family style” culture that includes socioemotional, personal, and interpersonal support throughout their academic careers. The “family style” approach is a transition from an individually centered approach to a more team-oriented approach. After all, people attain their academic rank through the work and support of many people. This fact generates a duty to give back to those that are following behind, as occurs in any strong family.

To create a “family style” culture, a foundation must first be constructed where everyone is treated as a resource that we invest in personally. We value the individual and what they bring to the team: teacher or researcher, tenure-track or non-tenure track, fully promoted or striving for full promotion. When they succeed, we succeed. The silos and barriers that have historically separated teachers and researchers must be removed if a holistic approach to faculty development and mentoring is to succeed in our college. In the same vein, if we lose a member of the family, we should ask ourselves what we could have done to retain that family member.

² Zellers, Howard, & Barcic, 2008, p.555

³ Florida State University, College of Medicine
(<https://med.fsu.edu/index.cfm?page=facultyDevelopment.about>)

The first step in creating a “family style” culture requires us to adopt a model of mentoring that is based upon building networks, both inside and outside of the college. Inside the college, we are recommending that a mentoring network be developed that would apply to all faculty throughout their academic career. Full professors can benefit from mentoring in the same way that assistant professors benefit. Mentoring should be a long-term collegial relationship that evolves over time to focus on needs depending upon the career stage of the mentee.⁴ Newly hired faculty have much different needs and expectations than a faculty member working towards tenure or one working towards full professorship. For example, Kerry Ann Rockquemore, in her article on ‘Why Mentors Matches Fail’, stated:

“The typical new faculty member has a wide and predictable set of needs, including: 1) professional development (how to do things), 2) emotional support, 3) intellectual community, 4) role models, 5) a safe space, 6) accountability, 7) sponsorship, 8) access to opportunities, and 9) substantive feedback on the areas of your work where you will be evaluated for tenure and promotion. That’s a long list, and that means that one person (or even three people) will not be able to meet this wide range of needs.”⁵

Additionally, a Professor of Practice (PoP) is likely to have much different needs and expectations than a Professor of Research. The culture needs to accommodate and value all faculty, if it is truly to become a part of the fabric of the college.

Having noted the differences among faculty members, there are also many similarities that need to be incorporated into a faculty development and mentoring program. Striving for excellence, whether it is teaching or research, is a common thread that ties us all together. All faculty also struggle with time-management issues, work/life balance, goal-setting and developing professional networks outside of our campus. Addressing these needs requires “soft skills” that need to be addressed by a holistic faculty development and mentoring program. Teaching soft skills is not something many engineers are comfortable with and, thus, will need to be incorporated into a mentoring training program.

Because of these vastly different needs and expectations, it is envisioned that in a holistic faculty development and mentoring network, a mentee would often have more than one mentor. Mentors have a wide spectrum of skills and experiences and would be able to help some more than others. Moreover, it is clear that not everyone makes a good mentor, as we all have unique strengths and weaknesses. The matching of mentor and mentee needs to be a carefully considered process based upon input from the mentor, the mentee and, of course, the “family”. A process of matching mentors and mentees must be carefully crafted and should be a part of the mentoring training program instituted by the college.

Retrieved from:

⁴ http://facultydiversity.columbia.edu/files/viceprovost/mentoring_best_practices_1.pdf

⁵ Retrieved from <https://www.insidehighered.com/advice/2016/02/03/most-mentoring-today-based-outdated-model-essay>)

Successfully matching mentoring relationships requires active and committed engagement on the part of both mentor and mentee. Long-time relationships evolve over time and is the foundation of a “family” culture. Matching mentor and mentee is critical to the success of the program and should take into consideration a number of variables, not the least of which is the personal relationship between the mentor and mentee. That relationship is bound to be unique and specific between individuals, as it is in any family, and should also provide the emotional and psychological support found in any successful family to help build confidence and collaboration skills within the mentee.

A vibrant “family” culture of faculty development and mentoring will still require the faculty to be motivated to participate, either as a mentor or a mentee. The strongest, most powerful motivators are intrinsic, found within the individual. Intrinsic motivators that may be channeled to produce faculty engagement and buy-in include:

- Preserving a legacy for your work
- Creating a stronger department
- Developing a future collaborator
- Giving back (to academia, the industry, the State of Nebraska, etc.)
- Making a difference - creating a better future for your children/grandchildren, etc.

Putting these powerful intrinsic motivators into play is the secret to creating a culture of faculty development and mentoring. Other rewards should not be ignored, however. Extrinsic rewards that include time, stipends, awards and other recognition, if properly applied, can amplify the intrinsic motivators. These same extrinsic motivators, if improperly or unfairly applied, can also demotivate an individual.

One critical structural change that needs to be addressed involves time. All faculty live in an environment of time poverty. There are always far more tasks that could be done than there is time to do them. Thus, faculty are in a position of choosing which tasks to perform based upon their internal priorities. Research has shown that the mentor trait most important in facilitating effective mentoring is a mentor’s available time.⁶ It will be necessary to structurally change the apportionment system to separately recognize faculty development and mentoring, which also serves to increase its importance in the college and is also a very visible example of administration buy-in.

All of the changes recommended above must have strong support from the Dean’s office, the department chair and, of course, from the faculty itself. This will require buy-in from the faculty, which in turn means that the implementation of the faculty development and mentoring process cannot be a “top down” process. Rather, the faculty must be fully engaged in its development and implementation, as well as being rewarded appropriately for their involvement.

⁶ Fountain, J. and Newcomer, K, Journal of Public Affairs Education, Developing and Sustaining Effective Faculty Mentoring Programs, p. 497

Implementing Faculty Development and Mentoring

Decisive steps will be required by the college to implement the recommendations listed above.

1. Creating a culture of faculty development and mentoring within the college will also require a number of structural changes. Structural changes include institutional changes brought about by the college to change current practices. The structural changes start with the hiring of faculty that expect, and have the opportunity, to be fully promoted. Full promotion should be considered a natural and expected outcome of the faculty development process and attainable by all, teacher and researcher alike. Accordingly, hiring practices need to be reviewed to ensure that all facets of the recruitment and hiring process results in new hires that align with this expectation. It stands to reason that faculty that want and expect to be fully promoted are the most likely to become engaged in a faculty development and mentoring network.
2. Another structural change includes an early, mandatory orientation into the family-style approach of mentoring and faculty development. Through this extended one or two-year orientation, we can gain constructive feedback, identification of barriers and other needed information to help the new hires adapt and thrive in this new environment. The college can also use the orientation to introduce the new hires to the faculty development and mentoring process.
 - We recommend that an Excellence in Teaching professional development program be implemented as part of the new faculty orientation. The program would be introduced within the first or second semester of the hire and would cover topics that are core skills to excellent teaching, including the following:
 - Effective Course Design: Faculty would work on designing their course following Wiggins and McTigue's Backwards Design recommendations. In this model, there are three stages of evidence-based course design that fall within the three cognitive domains identified in Bloom's taxonomy: (a) What do you want students to be able to do?) b) Assessments that align with the learning objectives (Assessments, Rubrics, Performance tasks) and c) learning activities
 - Professional development tools and strategies - team building, networking and continuous improvement techniques
 - University-supported technologies that can engage students
 - Classroom teaching techniques (this can be based off one or two books on classroom teaching and lectures
 - Special topics program could include development of Scholarship of Teaching and Learning research
 - Teaching a distance-learning course between Scott and City campus. We currently do not have a program that supports faculty that teach between both campuses. As such, many of our faculty rely on lecturing only, removing the benefits of active learning

- Once a faculty member has completed the program over a course of three to four academic semesters, they can become mentors to new faculty as they are hired.
3. To address the issue of “time poverty”, the college needs to change the apportionment process to include faculty development and mentoring as a separate item that is populated with “time” for both the mentor and the mentee. Too often faculty development and mentoring are lost in the apportionment process and thus credit is not given to the faculty for this important work. The faculty then get the sense that faculty development and mentoring is a free service, which often disengages the faculty. The faculty development and mentoring apportionment can be contained within either the Teaching or Service apportionment categories but must be separately identified. This also serves to highlight the commitment of the Dean’s office and the department to this process. A separate Task Force is investigating the apportionment process and may produce some specific ideas on how to best address this recommendation within our college.
 4. A mentoring network will require a formal mentor training program. The training program will be developed, funded and operated by the college. There are many different initiatives and practices available in academia that currently assist faculty in building a roadmap towards continuous improvement that can successfully be adapted to a faculty development and mentoring program. Additionally, many universities and colleges offer some form of faculty development and mentor training. The question is which of these many “best practices” fit at our college and simultaneously support the family culture we are striving to build.

The faculty development and mentoring training program should include the following topics:

- **Soft skills**
 - Time management
 - Building external networks
 - Goal setting
- **Interpersonal relationships between mentor and mentee.** Mentoring is not a “one size fits all” process⁷.
 - Different people have different needs and challenges and will view success in different ways. Finding a mentor should be a two-way decision.
 - Be careful about putting mentors in a position of power over the person who is being mentored
 - Create small group events/panels/socials for special interest groups to provide additional facets of mentoring
 - Mentors may change over time

⁷ Recommendations taken from:

D. J. Dean, “Getting the Most out of your mentoring relationships, A handbook for women in STEM”.

- Create a mentor “pool” that will be cross-disciplinary and cross-departmental
- **Teaching skills**
 - Course design
 - Technology tools that can support teaching (for example, Screen Capture, Video Conferencing. There is also a Summer institute of Online Teaching offered through Online and Distance Education for those teaching online courses.
 - Class management
 - Development of learning objectives, assembling lectures and assignments
- **Research skills**
 - Effective grant writing
 - Proposal preparation
 - Writing articles
 - Appropriate direction of scholarly work (new faculty, mid-career and beyond)
 - Which types of grants to go after?
 - Who to team up with?
 - Measurement of progress
 - Facilitating collaboration on proposals
 - Maintaining collaboration with research team
- **Academic service requirements**
 - What should we do?
 - When should we do it?
 - How much should we do?
 - How is this best reflected in the service apportionment credit?
- **Accountability program**
 - Developed for both mentor and mentee

Best Practices for Faculty Development and Training Programs

- Peer Observation of Teaching program based on the COPUS tool by Smith et. al (2013)⁸. The Dean’s office is currently completing a beta program with six faculty observers and six faculty instructors and has just completed gathering data. The intent is that first faculty get trained on using the protocol, then those faculty observe instructors teaching and provide feedback.
- Summer institute of Online Teaching offered through Online and Distance Education for teaching online courses
- Mentoring network social mixer for mentees with a few mentors added at each mixer
- Consider designing spaces in the new engineering building specifically for mentoring and faculty development activities
- American Society of Civil Engineers ExCEED six-day teaching improvement program

⁸ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3846513/>

- Emeritus/retired faculty serving as mentors to younger faculty has produced some significant results in other engineering colleges
- A 'Teaching Excellence Reception' is one way to create a community and inspires faculty to 'raise the bar' by sharing innovations and technologies that improved the learning environment
- Create a Teaching Academy, similar to the one developed by the College of Arts and Sciences (<https://cas.unl.edu/teaching-academy>)

CONCLUSION

The integrated faculty development and mentoring approach described in this report will result in cultural change in our college. The new culture ties everyone together in our shared mission based on a commitment to lifelong learning and excellence.

The “family style” approach advocated in this report is very flexible and produces a highly individualized process for faculty development, capable of serving all faculty, from the newly hired to the fully promoted. Like any family, the culture depends on mutually developed performance goals and accountability to accomplish the mission of our college and where we can celebrate the success of each individual and, ultimately, our college.

Additional Resources

One example of external mentoring service/best practices is introduced at the following institute: National Center for Faculty Development and Diversity (NCFDD)- (<http://facultydiversity.site-ym.com>). The example of services provided are listed here:

- <https://www.facultydiversity.org/services>
- <https://www.facultydiversity.org/membership>

These are the list of current institutional members (<https://www.facultydiversity.org/institutions>). We recommend that the college have an institutional membership so the entire faculty would have access to this resource.