An Anonymous Electronic Journal System –
Program Assessment Tool and Monday Morning Quarterback

**Richard J. Freuler, Matthew S. Gates, John A. Merrill,
Mary M. Lamont, and John T. Demel**
The Ohio State University

Abstract

During the past ten years, The Ohio State University's College of Engineering has moved from a series of separate freshman courses for engineering orientation, engineering graphics, and engineering problem solving with computer programming to a dual offering of course sequences in the Introduction to Engineering (IE) Program and the Freshman Engineering Honors (FEH) Program. Ongoing assessment and regular evaluations of these programs are essential to maintain quality, ensure uniformity across sections, provide for feedback, and supply freshness. A key component of the assessments are the answers by students to evaluation inquiries collected frequently, regularly, and anonymously along with their comments, suggestions, and opinions. The constant cycle of self-assessment has enabled the Freshman Engineering Honors Program to continually evolve to quickly meet the needs of students. This present work describes an anonymous electronic journal system as it implemented and employed in the FEH Program as a near real time assessment tool.

1. Introduction and Background

In response to a national concern in the early 1990s about poor retention of students in engineering combined with a real, or some would say critical, need for more engineers, The Ohio State University (OSU) worked with nine other schools to form the Gateway Engineering Education Coalition. This need for engineers was and currently is driven by society's ever-increasing consumption of technology. The Coalition, led by Drexel University, was established as a result of the creation of an Engineering Education Coalitions program by the National Science Foundation. These schools agreed to adopt or adapt Drexel's E4 program[1-2] for freshmen and sophomores which put engineering "up-front" and specifically included hands-on labs and incorporated design projects. The Gateway pilot program, as OSU's adaptation was then called, consisted of three 3-course sequences taken concurrently, one in engineering graphics and fundamentals, one in physics & engineering mechanics, and one in mathematics.

The OSU Gateway pilot was first offered in the 1993-94 school year to new first quarter freshmen who had calculus in high school and who placed into advanced calculus by the University's math placement test. Over the course of the first few Gateway pilots, both the course content and range of offerings were varied to determine which of several approaches might prove most effective in meeting the goals outlined by the Gateway Coalition. By 1996 the

course content and offerings had optimally stabilized to the point where it was proposed to the College to approve "Gateway" for all students. The proposal was approved "for honors students only" beginning with the 1997-98 school year, and the program became the Freshman Engineering Honors (FEH) Program. Since 1997-98 the FEH Program has grown in demand by honors students from about one-fifth of those eligible (or about 70 students) to three-quarters of those eligible (or approximately 250 students in Autumn 2001).

Somewhat after the FEH Program was established, a plan was developed to implement a first year three-course sequence of engineering fundamentals for all students (i.e., all those not in FEH) but it was substantially modified according to much input from the College faculty. A two-quarter course sequence consisting of instruction in basic skills and hands-on laboratory experiences involving product dissection and real time data acquisition and centered around one or two engineered products resulted. This approach, the Introduction to Engineering (IE) Program, was piloted in small scale in 1998-99 with 100 students and again the next year on a somewhat larger scale with 300 students. Full-scale implementation of the IE program for approximately 850 freshman engineering students occurred in 2000-01.

2. The Current State of OSU Freshman Engineering Programs

Over the last ten years, The Ohio State University's College of Engineering has moved from a series of separate freshman courses for engineering orientation, engineering graphics, and engineering problem solving with computer programming to a dual offering of course sequences in the Introduction to Engineering (IE) and the Freshman Engineering Honors (FEH) Programs[3-6]. The IE Program has been scaled to handle approximately 850 first year students per year while the FEH Program was planned to accommodate approximately 250 students in 2001-02, or roughly three-quarters of those incoming engineering freshmen who are designated as honors.

These new programs retain essential parts of the traditional first-year engineering course material but add in hands-on laboratory experiences that lead to design/build projects[3]. Although somewhat different laboratory exercises are used in the course sequences of the two programs, both have the goal of providing hands-on experimentation, reverse engineering projects in small groups, and small-team design projects. Engineering is now "up-front" and "hands-on". Teamwork, project management, report writing, and oral presentations have assumed important roles in these programs. ABET criteria are introduced early, listed in the course syllabi, and highlighted as to which will be addressed in each particular course of the sequence.

One may be tempted to inquire how this evolution of freshman engineering programs was and is effectively guided. Proper assessment was and is foundational[6]. Ongoing assessment and regular evaluations of these programs are essential to maintain high quality, ensure reasonable uniformity across multiple sections, provide for critical feedback, and supply needed freshness. A key component of the assessments are the answers by students to evaluation inquiries collected frequently, regularly, and anonymously along with their comments, suggestions, complaints,

compliments, and opinions. This present work describes an anonymous electronic journal system as it implemented and employed in the FEH Program as a near real time assessment tool.

3. A Real-Time Program Assessment Tool

Vital to the effective administration of any organization is the ability to quickly identify and address potential operational issues. Unfortunately, even though the technologies are readily available to construct tools to facilitate quick-response assessment, many educational institutions (including The Ohio State University community at large) still rely heavily on paper-and-pencil course evaluation surveys given at the end of the academic term to assess course or program effectiveness. This approach can be ineffective for several reasons. Perhaps most importantly, the administering of the survey is often removed a great deal in time from the actual occurrence of relevant events in the course. This keeps many issues and concerns from being recognized and addressed in a timely manner, results in general frustration for students and instructors, and often leads to the loss of the opportunity to deal with the problem issues at all until the "next time around." The "next time around" might be the next term or even the next year. Obviously, the sooner a problematic issue can be identified and addressed, the better for both the student, the instructor, and the program.

The anonymous journaling system developed for use in the Freshman Engineering Honors Program addresses this time-lag issue and provides almost immediate feedback to course instructors, teaching assistants, and program directors. The purpose of the frequent (i.e., weekly) anonymous journals is to evaluate the courses and assess the program on a regular basis with both short-term and long-term goals in mind. In the short term, the journal responses are used in weekly instructional team meetings to uncover and address current concerns and questions. When a journal prompt is sent out in mid-week, the feedback is able to be received and acted upon only a few days later, while the topics in question and the issues in play are still fresh on the minds of the students and instructors alike. Journal responses are sent to course instructors via e-mail immediately after the submission window is closed. Along with pointed questions about current activities, students are asked for constructive criticism about the program, but they may not just complain. They are asked to propose a solution to their perceived problem. Some of the concerns can be immediately addressed in the next class session—what was broken last week in class can be fixed on the following Monday. Instructors are able to immediately identify and address questions about course content that may not have been presented clearly, make any necessary adjustments to their teaching methods or instructional materials, and so forth.

The constant cycle of self-assessment has enabled the Freshman Engineering Honors Program to evolve quickly to meet the needs of its students. Some practical examples from the past are: adjusting the placement and content of hands-on lab exercises to relate more closely to material current in students' minds; identifying material not clearly conveyed in lecture; intervening with students who are having academic problems; and, uncovering misconceptions about course, College, or University polices. Clearly, if evaluations and comments were collected only at the end of the course, most, if not all, of these kinds of issues would either not come up or would

have ceased to be relevant altogether. However, when addressed in near real time, the overall educational experience is enhanced on many levels.

In the long term, the journal responses are also used to improve future course materials, content, and teaching styles. In addition, a number of journal prompts are constructed to allow the evaluation of the courses and the program with respect to ABET criteria. Information gleaned from the journals has proved invaluable in adjusting the focus of the program and keeping it fresh and exciting. The results of these journal-based assessments are used for continuous program improvement. The students' participation in the program improvement process is important in making them feel part of the College of Engineering. This connection to the College and the students' subsequent realization that the faculty and indeed, the "system", are concerned for them, both as students and as individuals, are just two of the keys to measured improvement in retention of students in engineering. These and other keys to improved retention are described in a companion paper[7] appearing elsewhere in these proceedings. The sum of the effects of these keys has been double-digit percentage improvement in retention in engineering at OSU.

4. The FEH Anonymous Electronic Journal System

The mechanism behind the Freshman Engineering Honor Program's online journaling system is relatively simple. On a weekly basis during each academic term, students in the FEH program are sent an email message that supplies current information, tips, and announcements. Included in the weekly mailing is a topic or two, often posed as a question, about which the students are asked to comment. The prompt for electronic journal topic is prefaced with the explanation:

"Each week during each quarter this year, you will be asked to respond to one or more questions or be given a topic on which the Freshman Engineering Honors staff would like your input. During any week after you have answered the question(s), you may also comment on any other topics you feel are important. If there are issues of concern, we ask for your constructive comments and suggestions. These journal entries are your opportunity to have a more direct effect on the FEH program. And while we cannot guarantee that all concerns or problems can be immediately addressed, the opportunity for changes and improvements to the program is significantly enhanced by this weekly interchange."

Each student then has a few days to respond to the journal prompt by visiting a secure web site, logging in with his or her university ID, and entering a response. The responses are archived electronically by the web site software. The web site also allows students to review past responses and view the course credit they have received for submitting their responses. The FEH program has found that assigning weight of perhaps three to five percent of the course grade for submitting journals is judged as both fair and reasonable by the students and, at the same time, encourages participation. In recent academic terms, over 90% of the students submit weekly journals, and many journal responses are quite well thought out and well written. Certainly the anonymity contributes to the frankness of many responses.

When a response is submitted, the journal system separates identifying information about the student from the actual text of the response. The student's information is stored in order to keep a record of which students have submitted a response, and the text of the response is kept for later review by course instructors. If necessary, the student's information may be matched up with the text of his or her entry by an appropriately privileged system administrator in the very rarely occurring warranted or emergent situation. An example of such a situation would be the threat of harm to others or self. In the normal situation, the responses remain completely anonymous unless a student "signs" his or her submission. In practice, only a small percentage of students elect to "sign" their journal submissions.

Responses are collected during a designated time period or "submission window." After this window has closed, the web site stops allowing submissions, and the journal system then assembles lists of responses submitted for each section of the several courses in the Freshman Engineering Honors Program. In a typical week during the 2001-2002 academic year, the system processed responses from the approximately 250 students who are enrolled in one of seven sections of FEH Engineering, one of eight sections of FEH Math, and one of nine sections of FEH Physics. Each list contains the responses sent in by the students in the particular section of a particular course being processed by the journal system. A master list of all student responses is also assembled. The web site software is able to automatically access the university's enrollment database to download the current rosters for all the sections of the courses being managed by the journal system. When these lists of anonymous responses are complete, a copy of each one is sent via a separate e-mail message to the course instructors, teaching associates, and any other faculty or staff with a need-to-know. In this way, all students can each submit a single response, and each instructor receives only the responses from students in his or her course(s), sorted by section. This helps faculty and teaching assistants quickly identify any issues that are occurring in certain lecture, recitation, or laboratory sections, and address them quickly.

It should be noted that the use of custom web site software for the FEH anonymous electronic journal was only recently implemented. Prior to January 2002, the student responses were collected by an email-based electronic journal system. The process logic for the earlier email-based system was identical to the custom web site software. The email based-system used specialized PERL scripts to accomplish the nearly all of the same tasks now handled by the web-based journal software. One notable difference was that the course section rosters had to be manually loaded into the email-based journal system. For another comparison, the electronic journal system used by the IE Program, based on an anonymous web-based survey tool called Course Sorcerer, is briefly described in a companion paper[8] elsewhere in these proceedings.

The web-based journal system has been implemented in PHP. PHP (recursive acronym for "PHP: Hypertext Preprocessor") is a widely used Open Source general-purpose scripting language that is especially suited for Web development and can be embedded into HTML. The flavor of the FEH web-based journal submission system is illustrated in the several figures that follow. The "main menu" for the journal system administrator is shown in Figure 1. The journal

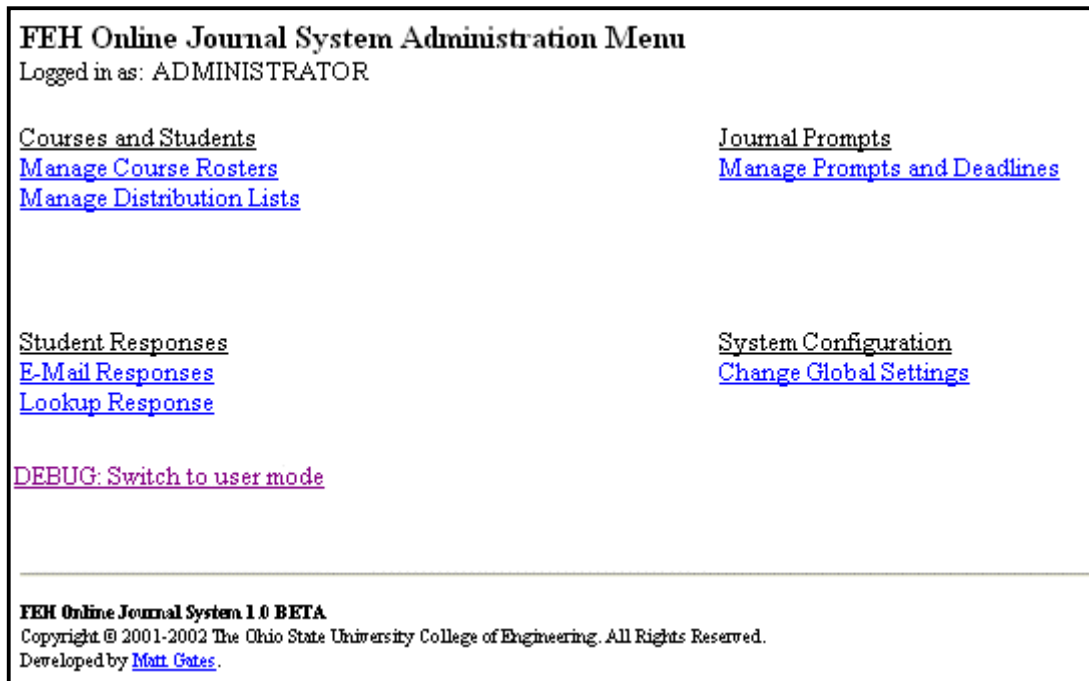system's various configuration, setup, and maintenance operations may be selected from this menu.

Figure 1. FEH Online Journal System Administration Menu

The journal system administrator may easily create a new journal prompt by selecting "Manage Journal Prompts and Deadlines". An example of creating a journal prompt is shown below in Figure 2. It is a simple matter to specify the journal prompt text and definition of the corresponding submission window. The view seen by a student who has logged into the secure journal submission site is shown below in Figure 3. In this window, a student may submit a response to any currently open journal submission window and optionally review his or her previous journal responses.

5. Lessons Learned

The anonymous journal system is a tool for the teaching team and administration to observe students' attitudes towards specific issues throughout the quarter. The written results are compiled by some instructors and are shared with the students in order to address their questions and concerns and close the feedback loop. Oftentimes journal entry feedback results contain much-needed answers to questions about the class or projects that students feel they cannot ask in class or to which they have not yet received a satisfactory answer.

Figure 2. Journal Prompt Creation and Management Screen.

As an example of the richness of student responses, the journal prompts and some excerpts from the anonymous responses submitted by students in the Winter 2002 term are provided in Appendix A. These student response excerpts have been provided here with only minor editing changes so as to better capture both the style and tone of the individuals. When comparing the student responses gathered by the electronic journal system with responses collected by paper-and-pencil methods, students are likely to be considerably more thorough and complete in their electronically collected evaluations and comments. In addition, the instructional staff has judged that the electronic journal responses contain more constructive suggestions, but this may have been influenced by the instructions accompanying the journal prompts. Certainly, there are fewer resources required for collecting the electronic journals, and the students appreciate the flexibility afforded by a "submission window" which remains open for three or four days.

Welcome to the FEH Online Journal System
Logged in as: STUDENT

This online system is used to submit responses to the Electronic Journals sent to you each week by the FEH staff. Your responses will always remain anonymous unless you sign your name. Your OSU ID will be recorded by the server for the sole purpose of giving you course credit for your submission.

___

The following journal prompts are currently available:
You may submit a response or modify your existing response to a prompt until its submission window closes.

    [No prompts available.]

The following journal prompts were previously available:
You may review your responses to these prompts, but may not modify them because the submission windows have closed.

🟩	Journal #1	(Jan 09 2002 12:00 - Jan 13 2002 23:59)
🟥	Journal #2	(Jan 17 2002 11:00 - Jan 21 2002 23:59)
🟩	Journal #3	(Jan 24 2002 11:00 - Jan 27 2002 23:59)
🟩	Journal #4	(Jan 31 2002 11:00 - Feb 03 2002 23:59)
🟩	Journal #5	(Feb 08 2002 09:00 - Feb 10 2002 23:59)
🟩	Journal #6	(Feb 15 2002 11:00 - Feb 17 2002 23:59)
🟩	Journal #7	(Feb 21 2002 20:00 - Feb 24 2002 23:59)
🟥	Journal #8	(Mar 01 2002 15:00 - Mar 03 2002 23:59)
🟥	Journal #9	(Mar 08 2002 09:00 - Mar 10 2002 23:59)

FEH Online Journal System 1.0 BETA
Copyright © 2001-2002 The Ohio State University College of Engineering. All Rights Reserved.
Developed by Matt Gates.

Figure 3. Student View of the FEH Web-Based Electronic Journal Submission System.

5.1 Observed Successes

The instructional team gains a better understanding of the general feeling within their classroom from the responses and can change behavior, or teaching approaches based upon student response. Administratively, responses are read and used to assess course progress and overall student satisfaction.

In the past, responses have been used to assess the use of technology in the classroom, and measure student satisfaction in instructional team, teaching styles, curriculum decisions, policies,

and programs. This assessment has resulted in short and long-term changes in curriculum in all above-mentioned areas. Some examples are:

- When asked about size of lab groups, students responded that some hands-on laboratory exercises should be done in smaller groups of two (rather than the usual size of four) so that all students could be more fully engaged.
- When asked to provide comments on the topics covered in the lab experiences, a re-ordering of the experiences were suggested to better align with topics being covered in physics.
- When asked to suggest changes to the engineering classroom, a number of students would prefer to be able to easily see the computer monitors of the students sitting across from them at the tables shared by four students. Many students would prefer to have a window or two in the classroom.
- When asked about the structure of review sessions for midterm exams, many students indicated a preference for a question-and-answer format with some example problems worked out in the session by the instructor for all students compared to the current format of working on sample problems individually or in small groups with some instructor assistance.
- Some students noted that certain instructors tended to favor speaking from the center aisle when moving about the room while lecturing. They suggested that as much attention be given to the outside aisles as was being given to the center aisle.
- Students have expressed definite views about the type(s) of persons they would like to have as a team member and about the skill levels they feel their team needs, including both interpersonal and technical skills.
- By observing growth in student thinking as it changes over time, instructors are able to adjust difficulty level in material (or work to make material more focused on students' needs).

5.2 Opportunities for Improvement

As is often the case with many systems, there are opportunities for improvement.

One area that will benefit from additional emphasis is the need to "close the feedback loop". At the present, the FEH Journals are reviewed by the instructional team at the weekly team meetings, and some instructors provide feedback to the students in the classroom on a regular basis. But not all instructors regularly close the loop. The processing of journals in the FEH program needs to be enhanced to include the posting of journal feedback results on the program web site as is currently done in the IE program[8].

From an implementation viewpoint, the FEH web-based journal system could be noticeably enhanced by the addition of the capability to have some questions answered in a more quantitative way to permit easier data analysis. Presently, a student's journal response is collected in a text-only web submittal form with no means to extract quantitative data except by reading the text. It would be useful if the system supported having some journal questions with pull-down boxes for selecting quantitative answers. Such results could then be exported to allow analysis by conventional spreadsheet statistics and graphs. This capability already exists in the

IE Program journal system owing chiefly to its use of the Course Sorcerer tool for collecting the student responses. Because Course Sorcerer does not support producing multiple reports of the same set of results sorted by several different class rosters, it could not be used as the basis for the FEH journal system.

6. Summary and Conclusions

Ohio State's use of an anonymous electronic journal system as a near real time program assessment tool for guiding and shaping the evolution of its Freshman Engineering Honors Program and the companion Introduction to Engineering Program has been described. The constant cycle of self-assessment has enabled the Freshman Engineering Honors Program to evolve quickly to meet the needs of its students. The results of these journal-based assessments are used for continuous program improvement. The students' participation in the program improvement process is important in making them feel part of the College of Engineering. This connection to the College and the students' subsequent realization that the faculty and indeed, the "system", are concerned for them, both as students and as individuals, are just two of the keys to measured improvement in retention of students in engineering at Ohio State.

Bibliography

1. Fromm, E. and R.G. Quinn, "An Experiment to Enhance the Educational Experience of Engineering Students", *Engineering Education*, pp. 424-429, April 1989.
2. Quinn, R. G., "Drexel's E^4 Program: A Different Professional Experience for Engineering Students and Faculty", *Journal of Engineering Education*, Vol. 82, No. 4, October 1993.
3. Freuler, R.J., A.W. Fentiman, J.T. Demel, R.J. Gustafson, and J.A. Merrill, "Developing and Implementing Hands-on Laboratory Exercises and Design Projects for First Year Engineering Students", *Proceedings of the 2001 American Society for Engineering Education Annual Conference*, June 2001.
4. Demel, J.T., A.W. Fentiman, R.J. Freuler, R.J. Gustafson, and J.A. Merrill, "Developing and Implementing a Innovative First Year program for 1000 Students", *Proceedings of the 2001 American Society for Engineering Education Annual Conference*, June 2001.
5. Gustafson, R.J., J.A. Merrill, A.W. Fentiman, R.J. Freuler, and J.T. Demel, "Developing and Implementing a Facilities Plan for a Freshman Engineering Course Sequence", *Proceedings of the 2001 American Society for Engineering Education Annual Conference*, June 2001.
6. Merrill, J.A., R.J. Freuler, R.J. Gustafson, A.W. Fentiman, and J.T. Demel, "Assessment and Feedback for a First Year Engineering Program", *Proceedings of the 2001 American Society for Engineering Education Annual Conference*, June 2001.
7. Demel, J.T., R.J. Gustafson, A.W. Fentiman, R.J. Freuler, and J.A. Merrill, "Bringing About Marked Increases in Freshman Engineering Retention", *Proceedings of the 2002 American Society for Engineering Education Annual Conference*, June 2002.
8. Merrill, J.A., R.J. Freuler, and M.M. Lamont, "The Potential & Pitfalls of Online Course Management: Experiences in a Large-Scale Freshman Program", *Proceedings of the 2002 American Society for Engineering Education Annual Conference*, June 2002.

RICHARD J. FREULER
Richard J. Freuler is a Senior Researcher in the Aerospace Engineering and Aviation Department at The Ohio State University. Dr. Freuler is the Faculty Coordinator for the OSU Freshman Engineering Honors (FEH) Program and teaches the three-quarter FEH engineering course sequence. He is also the Associate Director of the Aeronautical and Astronautical Research Laboratory and conducts scale model investigations of gas turbine installations for jet engine test cells and for marine and industrial applications of gas turbines. Dr. Freuler received the B.S. and M.S. degrees in Aeronautical and Astronautical Engineering in 1974, a B.S. in Computer and Information Science in 1974, and a Ph.D. in Aeronautical and Astronautical Engineering in 1991 all from The Ohio State University.

MATTHEW S. GATES
Matthew S. Gates is a recent graduate from the College of Engineering at The Ohio State University and a former participant in the Freshman Engineering Honors (FEH) Program. While working as undergraduate teaching assistant for the FEH program, he designed and implemented the electronic journal systems used in FEH. The systems employed specialized PERL scripts to handle incoming journal email messages and custom web-based on-line forms to accept on-line journal submission via the web. Mr. Gates received his B.S. in Computer Science and Engineering from The Ohio State University in June 2002.

JOHN A. MERRILL
John A. Merrill is the Program Manager for the Introduction to Engineering (IE) Program at The Ohio State University. His current responsibilities include management and assessment for the IEP, including the use of web-based instruments. He also collaborates with the Associate Dean for Academic Affairs and Student Services, and with key faculty, in the establishment of outcome-based assessment processes. He has an extensive background in public education, corporate training, and contract research. Dr. Merrill received his Ph.D. in Instructional Design and Technology from The Ohio State University in 1985.

MARY M. LAMONT
Mary M. Lamont received her B.A. from the College of Arts and Sciences at The Ohio State University in December 2000. She is currently working with the Freshman Programs at the College of Engineering as an Information Associate, where she is involved in the creation, summary, and response to student's electronic journal entries. Her duties also involve curriculum development, the use of WebCT for course management, and program assessment.

JOHN T. DEMEL
John T. Demel is a Professor of Engineering Graphics in the Department of Civil & Environmental Engineering and Geodetic Science. Dr. Demel is a registered professional engineer in Texas and is involved in engineering education research. He is a co-author on four textbooks. Dr. Demel serves as the Faculty Coordinator for the Introduction to Engineering (IE) Program and teaches in both the IE and the Freshman Engineering Honors (FEH) programs. He helped create and develop the FEH program. Dr. Demel earned his B.S.M.E. at the University of Nebraska-Lincoln in 1965 and his M.S. and Ph.D. degrees in Metallurgy from Iowa State University in 1968 and 1973 respectively. He taught at Savannah State College and Texas A&M University prior to joining the faculty at Ohio State in 1980.

Appendix A – Journal Excerpts
Examples of Journal Prompts and Student Responses for Winter 2002

The Journal prompts sent to all students each week are prefaced with the following:

"Each week during each quarter this year, you will be asked to respond to one or more questions or be given a topic on which the Freshman Engineering Honors staff would like your input. During any week after you have answered the question(s), you may also comment on any other topics you feel are important. If there are issues of concern, we ask for your constructive comments and suggestions. These journal entries are your opportunity to have a more direct effect on the FEH program. And while we cannot guarantee that all concerns or problems can be immediately addressed, the opportunity for changes and improvements to the program is significantly enhanced by this weekly interchange."

"You are encouraged in any week to comment about any other aspect in the FEH program, something in Engineering or at OSU, your own situation, or college life in general."

"If you have a specific question, you may wish to send the question directly to one of us. We are not able to respond to a direct question from an anonymous journal entry."

Journal #1

1. What would you want to have done differently last quarter / will you do differently this quarter, either from a personal or FEH program point of view?
2. What things would / will you keep the same?

A quote from this week — I want to do better. I'm not good at the whole school thing, but I'm supposed to be smart, so I should be able to do this. I need to go to all my classes, do all my work, etc., but knowing what to do and consistently doing it are two different things. I've sort of figured out ways to study, maybe. I've never had to study before, but this group thing seems to be working out ok, maybe. I dunno. After a quarter of being beaten with a large stick, I'm rather unsure of my status and abilities at the moment. I'm supposed to be smart. Why isn't this working?
And from another — I would like to thank you for providing me an outlet to ventilate my frustrations toward Fall quarter. I did bad last quarter, so there are several things I would want to have done differently. Also, there are some ways the program could have been different to suit me better, but the job of the program is doing the greatest good for the greatest number, not the greatest good for me alone, so there aren't quite as many ways the program could've been different to do its job better as there are it could have to have served me better. Nonetheless, I think there are some improvements between the program and its potential, and I'll try to point them out based on my opinions.
    First things first, I got an A-, B-, and a B in my 3 classes. I could have gotten an A, an A, and an A, had I done things differently. In physics class, I basically never studied hard because I thought it was easy, which it actually was for me during the first half of the quarter. I had learned the material in high school, and it was pretty simple anyway, requiring little more than solid algebra and trigonometry skills to do everything successfully. I coasted my way through the first midterm, and I thought I was some hot stuff. I coasted my way to the second midterm, where I lost a close battle. I thought I had just gotten unlucky on the second midterm, so I slacked my way even to December 3rd, date of the Final Exam. There, the enemy surprised me, routing my army and burying my morale beneath a wave of realized failure.

In math, my situation was shaky from the start. I thought I was going to have an easy time because as one of the best students in the advanced math class in grade school for the past 12 years, I had become accustomed to success, and for that matter, success without spending much time working at it. Moreover, I had taken an AP Calculus course in high school which covered material identical to that my math class last quarter, 161G, was supposed to cover. I was so confident, in fact, that the only classes I attended the first few weeks were the one recitation per week during which the weekly quizzes were scheduled. Believing that I would overwhelm the enemy in every engagement, I strode gallantly into Independence Hall, site of the first midterm, planning my victory celebration. I walked out speechless two hours later staring at the ground, shocked, and wondering how the enemy had grown so strong in two months.

Engineering graphics was a different story. I began the quarter with high aspirations, but as I got my hands dirty with Cadkey and graphics communications theory and practices, I started slipping. It was weird. I can't really explain it. You would have to have been in my shoes to truly know what it was like. I felt sluggish in class and my brain just didn't operate sharply. I began fooling around instead of concentrating, something I hadn't done in class since 9th grade. Maybe I have attention deficit disorder. I lost self-control. I began disturbing those around me. I repeatedly asked my trademark question, "How do you know guys how to do that stuff?" to people around me. Maybe I have attention deficit hyperactivity disorder. I put assignments off until the 11th hour. I just couldn't learn the material with the time I spending and the extent I was concentrating. Getting a B was no surprise.

Identifying the problem is the easy part. Manufacturing a solution is the difficult part. My best guess as to what I could have done better is simply to have spent more time and made better use of the time I spent. As for how I would have successfully executed those strategies, I don't know, and I don't have a chance to try. Basically, this quarter I intend to spend more time and try my best to concentrate while I'm spending time.

Otto von Bismarck once said that the wise man learns from other people's mistakes, the average man learns from his own mistakes, and the fool makes the same mistakes twice.

And now, the highlight of this journal, the rant section. This is where I get to blame my problems on the system. This is where every failure can find comfort. Okay, first of all, I want to make a few comments about the facilities. OSU is overcrowded and/or underprovided. It was a challenge every day to find an unoccupied desk to study at in the Science/Engineering Library. And the computer lab at Baker-let me just say I had to wait 20 minutes in line once. It's a damn good thing we engineering majors have our own personal computer lab in HI 324. And oh yeah, parking sucks.

Journal #2

1. With regard to your Engineering Graphics classrooms (Rooms 206 and 346 Hitchcock), do you feel that the room promotes group learning adequately? Why or why not?
2. If you were going to remodel another classroom to be similar to Rooms 206/346, what things would you change about the way these rooms are laid out? What would you keep the same?

A quote from this week — The engineering classrooms, quite frankly, are my favorite classrooms that I've ever had a class in. The table layout makes for easy discussion without the need to move chairs or other furniture around, and the tables and *rolley desk chairs!* are great. If I were to remodel a room, I would probably follow the layout of the Engineering Graphics rooms pretty closely. The desks work well, and the computer monitors don't block views of anything. Quite frankly, I love that classroom.
And from another — If I were to remodel my current classroom I wouldn't change much. The only thing I would change would be to have the lecturer's desk in the middle of the classroom. I think this would make it more like a discussion and then everybody would probably be able to hear without the lecturer using a microphone. Oh, and a window or two would be nice.

Journal #3

What is your intended engineering major going to be, or are you undecided? Please include a brief comment or two that address(es) the following two questions.
a. Have you changed your mind about your major since you started last Autumn? If so, from what to what?
b. If you have changed your major, what factors were involved in your decision?

A quote from this week — This is my first quarter in FEH, because I originally intended to be a math major. Right now I am thinking about being a mechanical engineer or an electrical and computer engineer. I don't know the specifics about either profession, really, but I have heard that electric is a lot of math, and I do love math!
And from another — Other comments: I was disgusted with a group of FEH students sitting in the back of my Physics 132E class this week. They made loud and frequent comments about the instructor's lack of knowledge and teaching ability. I find this behavior immature, inappropriate, distracting, and unfounded. If these students think the course and the instructor are so worthless, then why do they come to class??? I wish they wouldn't.
And from yet another — I am currently a Computer Science & Engineering major, but the main reasons that I am enrolled in that major is because it is the most difficult to be accepted (minimum of 3.2 GPA). If I can be accepted in CSE, then I know that I can be any of the others that have less difficult admission standards. However, I am still considering Aerospace, Biomedical, Chemical, Electrical/Computer, and Eng. Physics. In addition, I have still not completely ruled out some other majors outside of the College of Engineering. All of these non-engineering major considerations include physics (astrophysics), mathematics, biochemistry (specifically neuroscience), molecular biology, genetics, and even architecture. Darn it! Why can't I major in everything? There are so many subjects upon which I seek enlightenment. If only I could live forever. But that's not possible...yet! Although I still haven't made a completely final decision regarding my major, I do have some idea of what I wish to pursue in life. My dilemma consists not in determining what I want to do, but instead in what I DON'T want to do.

Journal #4

1. How many hours outside of the classroom are you spending on average per week on the Engineering, Physics, and Math courses?
2. Are you reading the textbook or assigned readings for your courses? Which ones? Why or why not?
3. Have you visited any of your instructors or teaching assistants this quarter? For which courses?

A quote from this week — 1) I spend about 2-3 hours outside of class each week on Engineering and Physics. I know this might seem low but my motto is don't fix what isn't broke. 2) For the most part I am reading the text books for my courses but it's hard to read all the assigned readings in english because I hate english and the readings are worse than listening to country music so sometimes I have to stop not out of want but out need for my sanity. 3) Yes for english because I can do about any math problem you give me but I couldn't write a paper to save my life.
And from another — Yeah, I read. To quote the illustrious [Prof X], "Reading is fundamental." I haven't visited any of my instructors, with the exception of my conference with [Prof. X] at the beginning of the quarter. As for TAs, I know quite a few former FEH students, and some of them *are* TAs, tho in physics, which I'm not taking. Craig lives in my building, and is friends with one of my close pals, so I see him a lot outside of class, tho not usually for class-type reasons. I'm excited about my progress in my math class... I took off my shoes and played in the rain puddles today. That has nothing to do with FEH, but it was fun, so I thought I'd share.
And from yet another — 3. heck yeah man...i hit em all up :) ive visited w/ my math ta and my physics professor... graphics is a bonding experience all of its own... you kinda do that the last hour of class anyhow... but

more so because i had surgery and missed three days of class and my math ta conveniently tutors at study tables which i am required to go to... so it's not because i'm up on things... let's be honest now

Journal #5

The FEH staff would like to receive your brief comments on anything you'd like to write about this week. Send us your praises about something that is going well, or constructively suggest changes for something that could be better.

A quote from this week — Currently, I am in FEH EG graphics and physics. I really like graphics. The labs are great and the professors really know what they are talking about. Physics on the other hand is frustrating. There is a lot of emphasis on "problem-posing", questioning, and the scientific process that I think comes naturally to anybody that is seeking a career in engineering. I think we could learn a lot more if we focused more on the concepts and how they apply in every-day situations.

And from another — I went to a talk about fractals recently, and the visual representations of them--for example, Koch's snowflake and the Maltese Cross. I think it would be interesting to show an example of this to the engineers in [our class]. It's confusing to explain, but I imagine programming a computer to draw fractals is very involved and applicable to our class--I'm sure there are for and do while loops, or such involved. Also, the final results are more interesting than a computer printout of the estimated values of sine between 0 and 90 degrees (no offense!). Why don't we ever do or at least see applications of programming that is more visually oriented? (Or am I missing out, and all this happened in [a previous course]?)

Journal #6

If you could change one thing about your current situation, your college life, your FEH experience, your study habits, your living conditions, or anything else impacting your day-to-day activities, what is the one thing you would change?

A quote from this week — I would expand the day to at least 48 hours since there's always stuff to do but everything interesting conflicts with each other. Also, there just doesn't seem like there's enough time in the day to enjoy being here and doing very well academically.

And from another — To totally honest though, that actually ties with my one pet peeve about the FEH program: honors students. I think sometimes we're a necessary evil. I'm well aware that I am more a face in the crowd than a standout in this environment, but people who gripe about missing three points on a midterm are an annoyance to all. Now I realize that to those two or three people that aced the midterm, I seem like all their classmates in high school that complained when they did what they do now. I guess the thing that really bothers me is that these people seem surprised to find out that they aren't perfect (something I managed to find out in high school). So if I could change one thing about my experience, I'd get rid of those perfectionists and replace them with real people.

And from yet another — Gripe #9) When you call the campus repair guys, they take forever to get there. However, when you don't call, they show up unexpectedly to fix your shower, you let them, and then you aren't allowed to use it for 48 hours!

Journal #7

1. What characteristics do you want in your team members for the H168 [spring quarter design/build] project?
2. What characteristic or trait do you value the most?

A quote from this week — important characteristics include the ability to work well with others (obviously), they have to be able to compromise, they cant be overly anal retentive because those kind of people irritate me, people who can communicate well are necessity also because i have noticed that there are more than a few people in FEH who have a communication problem they like to do things their way and then go on without discussing it with the group), and for the guys.... they need to be able to handle the fact that some girls will cry for no apparent reason and they need to be sensitive to this fact rather than telling her to "suck it up and deal with it" cause that will get you in big trouble right quick.

And from another — first and foremost i want my teammates to be humans who speak and understand English or at least american sign language. it would also be nice if they weren't idiots. seriously though, the foremost trait is diligence in working and learning; none of us really know exactly how this is going to go and the tortoise always wins. another trait that is perhaps also tied for number one is a certain dedication to doing a good job without cutting corners because that type of small lapses in concentration can build up over the term and fubar the entire project.

And from yet another — I do not plan on taking the H168 course, however, if I were to go about a task such as building a robot, I know what type of person I would want in my group. First and foremost is someone who is willing to pull their weight in the project. Also, I would try to find someone who's strengths were my weaknesses, that way, what one person may not be good at, the other could be a leader and help the group through that part. Also, it is important that the person in your group is someone you can get along with, because the groups are going to be spending a lot of time with each other. However, this trait is sort of an added bonus, as we should all be old enough by now to realize that we are not always going to like the people we are working with.

And from yet another — I'm disappointed that I'm not in the [same] EnGraph (EnRobot? EngLab?) section with my pals. I knit a few of them into sort of a security blanket, and now I'm going to be running naked. Oh well. A little exposure never hurt anyone. I'll just slather on a layer of Self-Confidence so I don't get sunburned. Wow, look at the quality of that metaphor. I should be an English major, what am I doing with all this 'robot' mumbo-jumbo?

Journal #8

During Autumn and Winter Quarters you have participated in a number of laboratory exercises. Would you provide some feedback about the topics of the labs, the make-up of the teams (changing each week or kept together for five weeks), individual vs. team lab reports (as appropriate) and whether teams of four are the right size for the labs? If you have some ideas for new labs, labs that should be combined, or labs that should be split into two sessions, please let us know. We will use your input to plan for next year. Please comment on both the Physics and Engineering Labs.

A quote from this week — The other comment I would like to make about labs in EGH166 and so forth, is that at the beginning of the year, I really didn't like them. I think it was because I felt like the material wasn't being explained well enough before we actually started working on it. I think though that I had the wrong idea of how the EnGraph labs were supposed to work. I think that the labs are intended to be that way, so that you're almost thrown into a sea of new information and you have to learn how to swim yourself. Once that realization came, I began to become more comfortable with jumping right into labs and asking the TAs if I had trouble.... I will say though that the lab write-ups are notoriously unclear.

And from another — A lot of people have complained about physics labs. I can't really say I have any major complaints. Sure my TA is foreign and hardly speaks louder than a whisper, but if I could understand her, I'm pretty sure she would know what she is talking about. Sometimes the physics labs were overly simple, but then if they were more difficult then people would complain that they were too much so. I suppose, then, that the poor physics

people will just have to deal with their criticism. Don't worry about it, you're doing a good job over there...except for those weekly report things....

Journal #9

How have your experiences this year at Ohio State, in the College of Engineering, and/or in the Freshman Engineering Honors program affected your desire to be an engineer? Have your experiences changed the way you look at things? Briefly explain.

A quote from this week — I'm still thinking I like engineering; it's going well so far. I think I'd be pretty happy with just about anything, at least I can get a job if I have an engineering degree. There are a lot of cool kids in engineering, and a few cool whacked kids, but there are a whole lot uptight kids too, which sometimes makes me wonder if I'll be happy having classes with the same group for four or five years...

And from another — My experiences this quarter have definitely influenced my opinion of engineering. I realize now how practical engineering is contrasted to how theoretical calculus and physics are. I think the word engineering is synonymous with the words practical problem solving. I am also now much better informed as to what engineers actually do and what the difference is between the different disciplines of engineering. I also realize now some of the differences between design engineers and engineering consultants and managers. I realize also that I would like to broaden my horizons and try to earn a double major. From helping write lab reports in graphics class, I realize that I can write better and read better than most of the aspiring engineers in the FEH program, and I think I can use that to my advantage to earn a second degree.

And from yet another — yeah sometimes i wonder why i have to be ambitious when i see my friends taking cupcake classes like sport for spectators and contemporary issues of competitive athletes, but then i realize that a degree in sports and leisure studies will most likely put me on a fast track to nowhere…