McLennan Community College
Application for Sabbatical Leave

Each applicant must have completed a minimum of three consecutive years of full-time employment as faculty member, administrator, or professional staff prior to the current academic year (2023-2024) to be eligible for Sabbatical Leave in 2024-2025. Persons wishing to apply must complete an application package including the following:

1. This completed form.

2. A project proposal including:

   a. A statement of the applicant's educational objectives and description of how the proposal contributes to his/her professional development plan. Progress toward these objectives (i.e., coursework and/or research completed or in progress, etc.) should be discussed.

   b. A detailed description of proposed Sabbatical Leave activities and projected product of their work.

   c. A discussion of benefits expected for the applicant, the applicant's area or department, and the institution in general if this Sabbatical Leave were to be awarded.

   d. A description on how the applicant will share their experience and new insights gained during the Sabbatical Leave with the college community after their return.

3. A letter of endorsement from the applicant's immediate supervisor.

The application package must be submitted electronically to bprice@mclennan.edu by 5:00 p.m. on Thursday, February 1, 2024.

NAME: Paulina Sidwell

DEPT. OR OFFICE: Engineering

MAJOR RESPONSIBILITIES: Teaching

List degrees earned and granting institutions:

Degree	Institution	Date Earned
B.S. in Industrial Engineering	New Mexico State University	May 2009
M.S. in Industrial Engineering	New Mexico State University	Dec 2010

List occupational experience relevant to this application:

Position	Employer	Date Employed
Professor	McLennan Community College	2012 - present

Sabbatical Leave Acceptance Agreement

I understand that a grant recipient must return to McLennan Community College for the contract year following the Sabbatical Leave or, upon completion of the leave, return the entire amount of the grant (including salary and fringe benefits) to MCC. I agree to share my experience and learning with the MCC community within the next long semester upon my return by one of the venues listed in Policies and Procedures: Sabbatical Leave; F-I-d, 1.

Check One:

For eligible full-time faculty on 9-month contacts:

☐ I prefer to take the Sabbatical Leave during one long semester at full salary.

☐ Fall 2024 or ☐ Spring 2025

☐ I prefer to take the Sabbatical Leave over two long semesters at half salary (15 load hours split between two long semesters, as shown below):

_____ Hours for Fall 2024 and _____ Hours for Spring 2025

☑ I have not decided on a leave period at this time.

For eligible full-time faculty on 12-month contracts:

☐ I prefer to take the Sabbatical Leave during one long semester at full salary.

☐ Fall 2024 or ☐ Spring 2025

☐ I prefer to take the Sabbatical Leave over two long semesters at half salary (15 load hours split between two long semesters, as shown below):

_____ Hours for Fall 2024 and _____ Hours for Spring 2025

☐ I prefer to take the Sabbatical Leave during Summer 2025 – 12 semester hours during two summer sessions based on the Salary Schedule: Part-Time, Overload, and Summer.

☐ I have not decided on a leave period at this time.

For eligible full-time administrator or professional staff:

☐ To take 16 consecutive weeks during the fiscal year with administrative approval.

Paulina Z. Sidwell _____ 1/31/2024 _____

Signature Date

McLennan Community College
Application for Sabbatical Leave

Each applicant must have completed a minimum of three consecutive years of full-time employment as faculty member, administrator, or professional staff prior to the current academic year (2023-2024) to be eligible for Sabbatical Leave in 2024-2025. Persons wishing to apply must complete an application package including the following:

1. This completed form.

2. A project proposal including:

   a. A statement of the applicant's educational objectives and description of how the proposal contributes to his/her professional development plan. Progress toward these objectives (i.e., coursework and/or research completed or in progress, etc.) should be discussed.

   b. A detailed description of proposed Sabbatical Leave activities and projected product of their work.

   c. A discussion of benefits expected for the applicant, the applicant's area or department, and the institution in general if this Sabbatical Leave were to be awarded.

   d. A description on how the applicant will share their experience and new insights gained during the Sabbatical Leave with the college community after their return.

3. A letter of endorsement from the applicant's immediate supervisor.

The application package must be submitted electronically to bprice@mclennan.edu by 5:00 p.m. on Thursday, February 1, 2024.

NAME: April K. Andreas

DEPT. OR OFFICE: Engineering

MAJOR RESPONSIBILITIES: Teaching, Advising, Dept Coordinator

List degrees earned and granting institutions:

Degree	Institution	Date Earned
PhD	Univ Arizona	2006
MS	Southern Methodist University	2003
BS	Southern Methodist University	2002

List occupational experience relevant to this application:

Position	Employer	Date Employed
Professor	McLennan Community College	2009-present

Sabbatical Leave Acceptance Agreement

I understand that a grant recipient must return to McLennan Community College for the contract year following the Sabbatical Leave or, upon completion of the leave, return the entire amount of the grant (including salary and fringe benefits) to MCC. I agree to share my experience and learning with the MCC community within the next long semester upon my return by one of the venues listed in Policies and Procedures: Sabbatical Leave; F-I-d, 1.

Check One:

For eligible full-time faculty on 9-month contacts:

☐ I prefer to take the Sabbatical Leave during one long semester at full salary.

☐ Fall 2024 or ☐ Spring 2025

☐ I prefer to take the Sabbatical Leave over two long semesters at half salary (15 load hours split between two long semesters, as shown below):

_____ Hours for Fall 2024 and _____ Hours for Spring 2025

☑ I have not decided on a leave period at this time.

For eligible full-time faculty on 12-month contracts:

☐ I prefer to take the Sabbatical Leave during one long semester at full salary.

☐ Fall 2024 or ☐ Spring 2025

☐ I prefer to take the Sabbatical Leave over two long semesters at half salary (15 load hours split between two long semesters, as shown below):

_____ Hours for Fall 2024 and _____ Hours for Spring 2025

☐ I prefer to take the Sabbatical Leave during Summer 2025 – 12 semester hours during two summer sessions based on the Salary Schedule: Part-Time, Overload, and Summer.

☐ I have not decided on a leave period at this time.

For eligible full-time administrator or professional staff:

☐ To take 16 consecutive weeks during the fiscal year with administrative approval.

April Andreas
Signature

1/31/24
Date

MCLENNAN COMMUNITY COLLEGE

Math and Science

February 1, 2024

RE: Andreas and Sidwell Sabatical Leave Application

This letter is in support of Dr. April Andreas and Paulina Sidwell's Application for Sabatical Leave. While it is unusal to have 2 faculty 'share' sabatical time, this strategy will allow them to balance a significant teachingload while working on the new engineering workshop. They have worked closely together for years, are extremely driven and I have no doubt that they will be able to complete the workshop project with support from the Sabatical Committee.

Sincerely,

Shannon K. Hill, Ph.D.
Division Chair - Math and Science
Science Building Office 110
254-299-8188

Educational objectives and description of how the proposal contributes to our professional development plans

A) Background:

a. **MCC Engineering:** Our program is designed to provide students with the first two years of any four-year Bachelor of Science in Engineering degree. Our students take a wide variety of engineering, math, science, and general education courses, equivalent to those taught at four-year institutions. However, beyond ensuring that students complete all coursework required to transfer as juniors to the program of their choice, we have tasked ourselves to provide similar experiences and opportunities as freshmen and sophomore students at four-year institutions, with the objective of having well-rounded, well-prepared students. Along those lines, we have established an advisory council of local employers, created a lecture series that spotlights alumni and industry leaders, supported opportunities for undergraduate research, and provided spaces for students to find social and academic support.

   One aspect we have identified that needs further attention is that of how students can get more experience with hands-on design activities. Although we have embedded design projects in our courses, students are mostly at the mercy of what they can scrounge in their own spaces. Students living in apartments are at a distinct disadvantage from those living in a detached home with a garage or those living on a ranch with a full welding barn. As such, we must be flexible with expectations in our projects since it cannot be guaranteed that all students have the same access to materials and equipment.

   We envision the development of a fully-stocked dedicated workspace for engineering students to develop prototypes, test materials, and practice necessary skills that will be expected of them when they move into the workforce. This facility will serve as a hub for fostering creativity and promoting hands-on learning experiences by providing a dedicated space for collaborative innovation, prototype development, and skill enhancement. These experiences come standard at a four-year engineering institution, and with our new partnership with Tarleton, we should continue to raise the bar of what we expect of our students.

b. **The Amplify Institute:** We had the privilege of participating in the Amplify Institute in the Fall of 2023. The AMPLIFY Institute is part of an NSF-sponsored research project (grants #1953560 and 1953586) led by engineering education researchers, instructional designers, and engineering instructional faculty from The University of Texas at El Paso, Florida International University, and the University of Miami. You can read more about the project here: https://www.utep.edu/engineering/amplify/. The following is the mission statement found on the Amplify website:

   "Educational innovation and culturally responsive teaching are already happening in engineering at Hispanic-Serving Institutions. These institutions are redefining "servingness" of diverse populations in higher education, particularly Latinx students. We believe that instructional faculty in engineering are central to "servingness", innovation, and culturally responsive teaching at HSIs. Our goal is to amplify and further develop engineering instructional faculty (EIF) as leaders in student-centered educational innovation at the undergraduate level."

Through this program, we were encouraged to develop a project that we believed would greatly impact our specific student population. We came up with the idea of putting together a proper workshop for students to work on their engineering projects, learn and practice their hands-on skills, and build a sense of community, fostering belongingness and providing equity to engineering students from all backgrounds. Through this institute and its subsequent four months of coaching sessions, we really dug deep into our goals, values, and vision for our program. We interviewed students and got them to help us develop a list of materials and machines that an engineering workshop should have. We have been working hard on figuring out how this workshop might be possible and what steps we need to take to get there.

c. **A joint sabbatical?** The engineering program at MCC is different from other programs because we only have three full-time faculty covering 11 different courses, all of which are requirements for graduation for six degrees (Associate of Science in Electrical, Mechanical, Civil, Industrial, Chemical, or Biomedical Engineering). We each specialize in different courses, many of which are scheduled simultaneously. Thus, we cannot easily find someone to cover a class if we take a full Sabbatical Leave. Additionally, as 9-month contract employees, we cannot apply for a Sabbatical over the summer. We passionately want to pursue this project, but it would be impossible for one person to take on, leaving many courses to be taught by the other two engineering faculty. If April and Paulina can split up 15 hours of Leave over two semesters, that really only means adjusting for one or two courses per semester each, which is challenging but doable.

d. **Educational objectives from our PDPs:** We each worked on our PDPs at the beginning of the Fall 2023 semester separately. However, we both mentioned the need for a space for students to collaborate and have access to tools and technology. One of April's goals is to "Help students make the connection between classroom work and work in industry, with a focus on real-world applications." Her list of strategies to achieve this goal included "We should develop the engineering research lab and add useful machines as the need for them develops" and "Also included in this effort is the redevelopment of the engineering workshop." On her PDP, Paulina wrote, "Continue to offer students opportunities to excel and grow inside and outside the classroom," with a strategy of "Continue to improve ways to provide students with easier access and training to use 3D printers." She also aimed to "Find ways to improve retention and the number of students successfully transferring," which had "Support student-led initiatives for students to create a sense of community" as one of its strategies. These goals and strategies align with establishing a proper engineering workshop for our students.

Detailed description of proposed Sabbatical Leave activities and projected product of the work

We are planning on spending our 15 hours of Sabbatical Leave spread between the two of us and split into two semesters working on putting together an engineering workshop. Here is a list of tasks we will need to complete to achieve our goal:

a. Research the different tools and machines needed for the workshop. This includes comparing and pricing out options.
b. Planning the layout of the workshop, including meeting accessibility requirements

c. Working with student leaders to provide the kind of space that would best foster collaboration.
d. Looking for sources of funding, whether through donations or grants.
e. Applying for funding.
f. Purchasing items and transporting them.
g. Installing items in the proposed workshop space.
h. Training ourselves to use all the machines and tools safely
i. Learning how to maintain all tools properly.
j. Putting together training for students.
k. Figuring out the logistics of giving students access to the workshop.
l. Putting together comprehensive safety training.
m. Developing a sustainable plan for workshop maintenance.
n. Researching and developing evaluation techniques that allow us to assess the success of this initiative.
o. Creating a plan for the long-term financial sustainability of the project
p. Gathering feedback from students and using it to improve the workshop

Benefits expected for us, our program, and the institution if this Sabbatical Leave were to be awarded

A) **For our students**: Engineering education has a significant hands-on component, and companies employing engineers often look for those with hands-on skills. New graduates with these skills are at an advantage when looking for jobs. Some of our courses have labs, though not all do. Courses without an official lab time are good candidates for projects with a hands-on component. In courses such as Engineering Graphics, Introduction to Engineering, Statics, and Dynamics, we have assignments that include building prototypes. Given that we have never had a proper workshop for students to work in, and that we have not been able to provide materials, tools, or training, we have had to rely on whatever students can do outside of campus. Some students have access to tools and have experience using them, while others do not. This can create an issue in which the quality range of the prototypes is incredibly wide. Students with less experience can often feel inadequate, feeling like they might not belong in engineering, and thinking that hands-on expertise is expected of them.

As part of the AMPLIFY Institute, Paulina and April conducted extensive interviews among our students, seeking feedback both from students who were doing well in these hands-on classes and from students who were struggling. The responses were eye-opening.

Some students had never had any experience with building anything at all:

> "I honestly have no idea where I would even begin like, I guess, with wood. But, like, what am I gonna do with it? But luckily, I had partners for that. I didn't have an idea of what we're supposed to do… and then they started to explain to me… After listening to them, maybe I could pull it off, but it would take me probably a few months."

Others were considerably more confident:

> "It's surprisingly affordable, like $150, to buy a forge. And then you need anvil. You can get like a cheap anvil for $120, and then, like you can make your own hammers. You just need a simple hammer, and they can make your own tools. And then you make things you want to make."

Some had grown up with a mentor who had been able to teach them from childhood:

> "Me and my dad were nerds. He had a raspberry pi. We always did like programming stuff. RC airplanes, and quadcopters, like fancy ones. He's an engineer, so he likes building stuff himself and like drawing stuff. So I guess he kind of raised me with the mentality of like. How would you do this? Okay. And then we'd actually go do it."

Others had learned everything from Google:

> "If you're learning how to build something that requires a power tool, and if I've never used that before. They usually come with their like own manual. But if you don't have that, you could also just look up on the Internet like what to watch out for, and usually people will be very good at explain, like I'll make sure you don't do this whenever you're using this. So I would, I would learn how to use the tool before I actually start, like, actually working on whatever I'm building."

Beyond the obvious of being able to learn how to use equipment, however, some students commented on how the existence of a workshop could help them feel more like part of the program and be more likely to find mentors among the more experienced students:

> "If we had a workshop that would be accessible for year one, I think that'd be a lot safer environment to go to and actually get help from other students that are years above, because I think a workshop would be a great social place to get help from more experienced engineers, because right now with the year one courses, I don't know any above engineers, basically."

It is clear that the development of a true workshop would benefit our students beyond measure, and would also address issues related to equity, and provide an opportunity for students to feel more "plugged in" to campus.

B) **For us:** Given that we cannot provide the tools or training, we must grade based on effort rather than quality. An engineering workshop would allow us to improve the requirements for our projects and get more specific about our expectations. We can trust that students have what they need to succeed and will acquire more hands-on skills in the process. With a workshop, we could provide basic shop supplies like fasteners, wood, or PVC and not worry that we are expecting our students to have to pay out of pocket to develop their prototypes. We can trust that our students are using equipment that is well-maintained and safe and that they have been properly trained in how to use it.

C) **For MCC**: We are proud of our engineering program and want students to come to us not because they had to or as a backup plan but because it is truly their best choice. We want to ensure our students leave here equally, if not more, prepared than their four-year counterparts. MCC offers our students so much, and we work hard so our courses are of excellent quality. If we can also provide the hands-on experiences that students elsewhere are getting, our hope is that this will translate to improvement in enrollment, retention, and overall satisfaction. Our students have earned top awards through NASA and have presented at multiple conferences, all while having to do a lot of their design and development in their own homes. The kind of work they could do with a dedicated space would be even more phenomenal. Thus, the successful completion of this program will not only facilitate the establishment of the engineering workshop but also elevate MCC's standing, demonstrating our commitment to innovation and

continuous improvement. The workshop will become a valuable asset, fostering collaboration among our students and providing a platform for our continued growth and partnership with Tarleton and other four-year institutions.

How we will share our experience and new insights gained during the Sabbatical Leave with the college community after completion

We will be happy to share our experience in any way we can. When we complete the sabbatical, we will present a Lessons Learned at PD Day and are also willing to develop a PD course or even a certificate plan for others who might want to do a similar funding activity, but perhaps smaller in scope. We also plan to present our experience at a conference such as ASEE (American Society for Engineering Education) or FYEE (First Year Engineering Experience).

Dr. April K. Andreas
Professional Development Plan
Engineering & Mathematics
2023 – 2024

Assessment of Previous PDP

Goals	Outcome
1. Continue work with the Engineering Advisory Council.	1. We added several new members to the advisory. This year we held a Career Mixer and Paulina took professional photos taken of the students.
2. Continue to pursue 2+2 articulation agreements, and ensure our students are aware of their rights insofar as automatic transfer.	2. We have updated our engineering website with detailed information about the guaranteed transferability of courses. We are working to educate our students so they know their rights and hosted a workshop specifically on transfer. We also got the coordinating board to keep Engr 1307 in the ACGM, at least temporarily, until the committee actually meets.
3. Continue moderate growth in the engineering enrollment, as well as retention.	3. Paulina was able to visit some high schools.
4. Help students make the connection between classroom work and work in industry, with a focus on real-world applications.	4. We continue to have excellent feedback from our Advisory Council on the kind of work that we're doing to help the students master skills that will help them be successful not only in the classroom, but in the workforce as well. Our students are finding regular employment with our partners
5. Develop opportunities for undergraduate research, encouraging both opportunities at MCC and elsewhere.	5. We had a few research students this year, and one student went back to the Mars Desert Research Station and also the Artemis team. We worked very hard to bring this back after getting hit by Covid.
6. Help students develop the skills they will need to succeed academically and professionally as engineers.	6. We continue to communicate with our industry partners and academic cohorts. We have been successful with our "Boot camp" program. We continue to see that students completing the linked Intro/Learning Framework combo are considerably more likely to be both successful and persistent in follow-on courses in engineering.

Professional Development Goals for 2023-2024

Goals	Strategy	MCC's Role
1. Continue work with the Engineering Advisory Council.	1. Paulina continues to work with the advisory council. We plan to continue to offer the Career Mixer.	1. We will need money to support buying a small breakfast.
2. Continue to pursue 2+2 articulation agreements, and ensure our students are aware of their rights insofar as automatic transfer.	2. Several of our students were able to successfully argue for transferability of their coursework. Having a "Know your rights as a transfer student" info session had a big impact, so we should do that again. We expect that the THECB will be hosting meetings for redoing the different engineering Fields of Study, so there looks to be a lot of work there. Working with Tarleton on bringing something to the University Center is also a huge part of this effort.	2. As faculty are serving on the THECB committees, we may need flexibility in working the meetings into our schedule, and possibly funding for meetings in Austin, if they go back to face-to-face. We will need support and funding to purchase the necessary lab equipment and find the space.
3. Continue moderate growth in the engineering enrollment, as well as retention.	3. Visiting high schools clearly pays off. We will continue to look for opportunities to engage students and will finish this year's newsletter.	3. Having financial support to purchase small items, swag, etc., for recruiting is helpful.
4. Help students make the connection between classroom work and work in industry, with a focus on real-world applications.	4. We have our "in" back with the Mars Desert Research Station as well as with NASA. We want to capitalize on these opportunities for sure. We should develop the engineering research lab and add useful machines as the need for them develops. Also included in this effort is the redevelopment of the engineering workshop.	4. HURI funding helps these students immensely. Once we know what our engineering department budget is, we may begin earmarking certain funds for equipment, and developing a grant.

Goals	Strategy	MCC's Role
5. Develop opportunities for undergraduate research, encouraging both opportunities at MCC and elsewhere.	5. I have several avenues I'm pursuing here. a. I continue to look for talented engineering students for the Honors College so they can participate in that program's research requirement. b. I'm continuing to emphasize project-based learning and embedded research in the Introduction to Engineering, Programming, Statics, and Dynamics courses. c. I'm also encouraging non-Honors students to sign up for research in the spring, as we have in the fall d. I will continue to encourage students to participate in the Engineering International Experience study tour and the Marine Biology in Honduras programs.	5. No specific support required, aside from support with the travel study courses.
6. Help students develop the skills they will need to succeed academically and professionally as engineers.	6. I have several strategies here as well: a. I have continued to push "names quizzes" and other collaboration-based strategies in the classroom. b. Pairing the Intro class with Learning Frameworks has helped considerably. c. I created an advising database, and have been emailing all students self-identified as engineering students once per quarter to check up on them, invite them to the club meetings, and that kind of thing. d. It has been a few years since our last ASEE conference. This particular conference has been incredibly valuable to the department, and we need to look for either that or a similar conference to attend this year. e. We are offering an evening class for Intro to Engineering, building on the fact that this has had strong registration. There are many more students in that class than we expected, so I believe that continuing to look at creative ways to offer classes will pay off.	6. We need to consider putting ASEE attendance into the full budget for our engineering faculty. This is too valuable a conference to send just one person to each year, and I know that some faculty are spending their own money to attend.

Paulina Z. Sidwell
Professional Development Plan
Engineering
2023 - 2024

Assessment of Previous PDP

I have just completed my eleventh year as full-time faculty. This past year I was given Tenure and I won the NISOD Award to Teaching Excellence. I feel very proud of myself but I also know there is still a lot I want to accomplish. My goals for 2022 – 2023 were:

1. Continue to improve my courses
    a. Apply lessons learned from PD and graduate courses
        i. I am very happy with my progress here. I can list several specific changes I have made thanks to thing I learned from ASEE and the courses in my Masters, for example:
            1. New spatial visualization exercises for Engr Graphics
            2. Conflict resolution ideas for teamwork
            3. Adding a team debrief at the end of projects
            4. Better use of online tools in online courses, such as using Google Keep for Meeting Minutes
    b. Teach Engineering Economics HYFLEX for the first time and note ways to improve it.
        i. This class was rough because I had a small group of students and many of them dropped for reasons that have nothing to do with this course being taught hyflex. I think there are ways to improve this but I need a larger sample size.
    c. Redesign Introduction to Engineering (alongside April and Laura) and note ways to improve it.
        i. We made a major redesign that took a lot of work and effort
        ii. There are many things I like about it, though there were a few that need improvement
        iii. In general I am very happy with the result
    d. Reflect upon what is working and what needs to be improved in all my courses.
        i. This is something I am constantly thinking about. I am very happy with the improvements I have made in Intro and Engr Graphics. I need time to look more closely at Circuits and Surveying. I know those can be improved but in the Spring is always hard to make changes because of how many preps I have and the small amount of time between semesters.

2. Work with April and Laura to have a long-term plan for our growing department
    a. Continue monitoring our enrollment and class offerings.
        i. Our numbers improved but I believe we have a larger than expected number of students dropping or failing classes, so there are fewer students transferring in two years. This is not necessarily a bad thing but something worth keeping track of.
    b. Do more recruiting.
        i. This year I went to Midway, University High, and Rapoport Academy (twice, once to talk to middle schoolers and another one to speak to high school students). I wish I had more time to do this but I truly do not.

c. Meet with April and Laura on a regular basis to discuss department needs and strategies.
    i. We met weekly during the Fall semester to talk about Intro because of all the changes. Thanks to this we were able to make timely changes and improvements. We met less often in the Spring but we are always in touch via Whatsapp so we all know what it going on.

3. Continue to participate in excellent professional development opportunities to improve my courses
    a. Attend ASEE 2023 or some other conference, and hopefully April and Laura can go as well.
        i. April and I attended ASEE 2023. It is such a great conference! We got a lot of ideas and made a lot of great contacts!
    b. Participate in as many virtual ZPOD sessions as I can.
        i. I completed several ZPOD sessions that were very valuable. I particularly got a lot out of the Peer Review course. It was a lot of work but it helped me make some specific improvements to my online courses.
    c. Continue to take classes for my Master's degree.
        I took four courses this past year: Intro to Higher Education, Agentic Learning, Teacher and Learning in Higher Education, and Online Learning Systems. To be honest I did not get much out of Intro to Higher Education. I found Agentic Learning was interesting. Teaching and Learning in Higher Ed and Online Learning were great because they gave me specific things to look at and improve in my courses.

4. Continue to offer students opportunities to excel and grow inside and outside the classroom
    a. Continue working on developing our Industry relationships to help students find jobs.
        i. I worked on this but I am struggling a bit. It seems like often my contacts at specific companies move and then I have to start over. We had a successful Engineering Career Mixer, and we did find out a few students got hired from that event and from employers that we know through the Advisory Council.
    b. Set-up industry tours, guest speakers with E&P Club.
        i. I set up three guest speakers which were well-liked and informative. However, I never set up a tour. I am going to let this be a little more student-led in the future. If students want to plan this, I will facilitate but at this time I am not sure I can take this on. Scheduling things around everyone’s schedule is so hard.
    c. Participate in outreach/networking opportunities.
        i. I was invited to speak to Rapoport Middle School and while it was a big time commitment, I got a lot out of it and I think the kids did too. I went recruiting this year at Midway High School, University High School, and Rapoport HS. I want to do more of this but my time constraints make it very challenging to do so.
    d. Look for opportunities for students to do research.
        i. I was able to facilitate an industry collaboration research project with FreeFlight Systems. The student, Ollie Wess, was involved in a project that required learning a lot of new stuff about airplane black boxes.
    e. Continue to improve ways to provide students with easier access and training to use 3D printers.
        i. The Artemis students showed me that students can independently use 3D printers safely, and some of the more experienced one can even trouble shoot them through significant issues. I have incorporating more information about 3D printing into my

Engineering Graphics class. Also, the library has been letting students print with our printer there and that was made it so much simpler for students to 3D printer their projects. I still hope that one day we can have the kind of workshop all students can 3D print with minor supervision.

5. Find ways to improve retention and the number of students successfully transferring
    a. Support student-led initiatives for students to create a sense of community.
        i. This was the first year since the pandemic in which I felt an improvement in the community-building in the engineering program. The Artemis students led the way, being an almost constant presence on campus. We saw more students on campus in general, and I hope we can keep getting students engaged in outside-the-classroom types of activities.
    b. Continue to work with transfer partners, set up new articulation agreements, and update the ones we have (as needed).
        i. This year was a frustrating one in this regard. Our agreement with UTA needed to be renewed and in spite of our insistence, it seems to be going nowhere. We started the work to create a new agreement with UTD but it is still not finalized. The good news is that Londa Carriveau is not stepping a position in which she will the central figure in terms of keeping and updating all agreements, which is great because I have not been able to keep up. I am working with her and reviewing our current agreements.
    c. Promote extra-curricular events for engineering students.
        i. I brought four guest speakers last year, and also participated in Extra Life, our gaming marathon for charity. We will continue to work on getting guest speakers and doing this event. I am hoping that the Engineering & Physics Clubs gets brought back and that student lead the effort in creating events for students to participate, because I really don't have enough time to do this properly.

Professional Development Goals for 2023 - 2024

Goals	Strategy	MCC's Role
1. Continue to improve my courses	1. Apply lessons learned from PD and graduate courses 2. Continue to make small improvements in Intro to Engineering 3. Work on improving Surveying, which could use a bit of a revamp 4. Learn Multisim (LabView) and incorporate into my Circuits class	1. Continued technology support to help my classes run smoothly
2. Work with April and Laura to have a long-term plan for our growing department	1. Continue monitoring our enrollment and class offerings. 2. Do more recruiting and outreach. 3. Meet with April and Laura on a regular basis to discuss department needs and strategies.	1. Present us with opportunities to participate in our department's long-term planning and budgeting.

3. Continue to participate in excellent professional development opportunities to improve my courses	1. Attend 3DExperience World (Solidworks conference) 2. Attend ASEE 2024 or some other conference, and hopefully, April and Laura can go as well. 3. Get trained to be able to teach Learning Frameworks in the future 4. Continue to take classes for my Master's degree	1. I hope MCC continues to offer great PD opportunities. 2. Funding to go to ASEE/conference, 3. Provide step credit for the graduate courses I am taking.
4. Continue to offer students opportunities to excel and grow inside and outside the classroom	1. Continue bringing guest speakers such as Industry Spotlight and Alumni. 2. Find a better way to run the Advisory Council in a sustainable way and make the most of our network connections. 3. Participate in outreach/networking opportunities. 4. Look for opportunities for students to do research. 5. Continue to improve ways to provide students with easier access and training to use 3D printers.	1. Continued support on Advisory Council activities 2. Continued support for Engineering & Physics Club
5. Find ways to improve retention and the number of students successfully transferring	1. Support student-led initiatives for students to create a sense of community. 2. Work with Londa to collaborate with transfer partners, set up new articulation agreements, and update the ones we have (as needed). 3. Find a way to keep track of the experiences our graduates are having with transferring.	1. Support running events or setting up opportunities for students to connect. 2. Continued support in setting up articulation agreements.

April K. Andreas

1400 College Drive
Waco, TX 76708

aandreas@mclennan.edu
(254) 299-8130

EDUCATION

Texas A&M Commerce, in progress **Commerce, Texas**
Master of Education in Higher Education (GPA: 4.0)
Emphasis on teaching, educational technology, physics

University of Arizona, 2006 **Tucson, Arizona**
Doctor of Philosophy in Systems and Industrial Engineering (GPA: 4.0)
Dissertation: *Mathematical Programming Algorithms for Reliable Routing and Robust Evacuation Problems* with Dr. J. Cole Smith

Southern Methodist University, 2002, 2003 **Dallas, Texas**
Master of Science in Applied Mathematics (GPA: 3.9)
Bachelor of Science in Pure Mathematics (GPA: 3.9), Minors in Physics, Computer Science, Art History

SELECTED TEACHING EXPERIENCE

McLennan Community College	Dept Coordinator	*August 2022 – Present*
	Professor	*August 2016 – Present*
	Associate Professor	*August 2009 – August 2016*
	Adjunct Instructor	*January 2009 – June 2009*
Collin County Community College	Adjunct Professor	*Fall 2007*
Southern Methodist University	Instructor for Summer Gifted Institute	*Summer 2009, 2010*

ACADEMIC RESPONSIBILITIES AND SPECIAL PROJECTS at McLennan Community College

Engineering Department *2009 – Present*
- Create, develop, and grow the engineering department
- Advise all engineering students, including through the transfer process
- Maintain relationships with high schools and recruit new students
- Work as needed with the Texas Higher Education Coordinating Board (THECB)
- Mentor and collaborate with new and existing faculty
- Coordinate student opportunities outside the classroom for research and career development

International Engineering Economics Experience *2016 – Present*
- Work with a team to develop a travel course for students to learn engineering economics as part of a travel-study course
- Coordinate international travel arrangements, including schedule and logistics, for 12-14 students and 2-3 faculty
- Plan and conduct travel meetings
- Work with students on developing chapters for publication in *When Nerds Travel in Packs*

Mars 101 Program Director, 2013 – 2016
- Developed a program to allow MCC students and faculty to conduct research at the Mars Desert Research Station (MDRS)
- Developed curriculum and learning materials for training
- Coordinated 8 student researchers and faculty advisors across multiple disciplines each year

Additional responsibilities: Undergraduate Research Advisor, Highlander Undergraduate Research Institute Committee, Various Committees as Requested

OTHER RELEVANT WORK EXPERIENCE AND SKILLS

Raytheon, Space and Airborne Systems

Senior Systems Engineer *2003 –2008*

- Employed Life Cycle Cost analysis to create tools to determine optimal logistics support concepts, including spares calculations and total operating cost, for Raytheon products.
- Worked with team members to develop a 3D simulation tool to test terrain following / terrain avoidance algorithms. Used object-oriented Matlab programming and GUI tools.
- Supported efforts on winning proposal teams.

Southern Methodist University

University Honors Program Coordinator *2002 –2003*

- Administered Richter International Fellowship Program, which provides funding for students to do independent research.
- Organized a lecture series
- Recruited freshmen for the Honors Program
- Worked with the General Education Council to help determine curriculum.

Computer Languages and Tools: C++, C, Python, Visual Basic, MATLAB, HTML
Certifications: Certified SolidWorks Associate (CSWA), Ham Radio General Certification (KG5ADC)

RECENT PROFESSIONAL AND COMMUNITY INVOLVEMENT

Council on Undergraduate Research

Councilor, Engineering Division *7/2021 – 6/2024*
Course-based Research Experience (CURE) Subcommittee

Texas Higher Education Coordinating Board (THECB) Committees

Civil Engineering Field of Study Subcommittee Co-Chair *2015*
Engineering Field of Study Committee *2014-2015*
Engineering Tuning Mechanical Engineering Subcommittee *2010-2011*

The Mars Society *2002 – 2017*

Steering Committee, 2010 – 2017
Crew Director, Crews 128, 139, 152, Mars Desert Research Station
Commander, Crew 110B, MDRS, 2011 – 2012 Season
Vice President, Dallas Chapter, 2002 – 2008

ADDITIONAL HONORS AND AWARDS at McLennan Community College

Special recognition:

- Highlander Extra Mile Award, MCC, 2020
- Minnie Stevens Piper Foundation, Piper Professor Nomination, 2014
- National Institute for Staff and Organizational Development (NISOD) Excellence Award, 2013

MCC Professional Development Certifications:

- Emotional Intelligence
- Learning Theories and Practices
- Technology
- Diversity, Equity, and Inclusion

Paulina Z. Sidwell

psidwell@mclennan.edu **254-709-7483**

Education

Master of Science in Higher Education with focus on College Teaching
Texas A&M University Commerce Commerce, TX. Current GPA: 4.0 (Expected completion 2024)

Master of Science in Industrial Engineering
New Mexico State University Las Cruces, NM. GPA: 4.0 (Dec 2010)

Bachelor of Science in Industrial Engineering Minor: Environmental Management
New Mexico State University Las Cruces, NM. GPA: 3.83 (May 2009)

Teaching Experience

Professor of Engineering McLennan Community College, Waco, TX (Aug 2012 – present)

- Courses Taught
  - Introduction to Engineering
  - Engineering Graphics
  - Engineering Economics*
  - Plane Surveying*
  - Digital Systems with Lab*
  - Electrical Circuits
  - Electrical Circuits Lab
  - Pre-Algebra
  - Elementary Algebra
  - Intermediate Algebra
  - Phys2389: Academic Cooperative
  - Great Works (2013, 2016)

  *New courses developed for MCC

- Additional responsibilities include:
  - Advising Engineering students
  - Recruiting/Outreach
  - Establishing and maintaining transfer agreements with four-year colleges
  - Engineering Advisory Council
  - Organizing the yearly Engineering Career Mixer
  - Setting up guest speakers for Engineering & Physics Club
  - Planning the Engineering Overseas Experience trip
  - Student research advisor

- Committees/Activities
  - PASS (Peer-Assisted Student Success) Advisory Council (Fall 2021 – present)
  - Engineering Economics International Experience (Spring 2015 - present)
  - Engineering Advisory Council (Fall 2013 – present)
  - Engineering & Physics Club advisor (Fall 2012 – present)
  - Professional Development Committee (Fall 2016 – Spring 2019)
  - Online Excellence Committee (2016-2017), Peer Review team leader (Fall 2017)
  - STEM Pathways Committee Co-Chair (Spring 2016 – Spring 2017)
  - Mentor/Mentee program: Mentee (2015), Mentor (2016-2017)
  - Mars 101 crew member (2013), commander (2014), recruiter (2015), coordinator (2016, 2017)
  - Strategic Planning Committee (Fall 2013 – Spring 2015)
  - Geology Field Course sponsor (Spring 2014)

Tennis Instructor Waco Regional Tennis and Fitness Center, Waco, TX (Sept 2011 – Aug 2012)

Teaching Assistant New Mexico State University, Las Cruces, NM (Aug 2009 – Dec 2010)

- Teaching Assistant for the following Industrial Engineering courses:
  - Quality Control
  - Manufacturing Systems
  - Evaluation of Engineering Data
- Responsible for giving comprehensive reviews, grading assignments & tests, holding office hours for students.
- Assisted in research projects about developing policies that minimize the impact of no-shows in healthcare.

Professional Associations & Honors

- American Society for Engineering Education (Jan 2015 – present)
- Texas Community College Teachers Association (Aug 2012 – present)
- Engineers Without Borders – Heart of Texas Professional Chapter (Feb 2015 – Jun 2017)
- New Mexico State University Tennis team (Aug 2005 – May 2009)

Awards

- NISOD Excellence Award (2022 – 2023)
- Minnie Piper Stevens Pre-Nomination (2016)
- Outstanding Senior Award for International and Border Programs (May 2009)
- Joe and Van Bullock Athletic Director Medal of Honor for Female Student-Athlete (May 2009)

Publications

- Huang, Y. L., & Zuniga, P. (2013). Effective cancellation policy to reduce the negative impact of patient no-show. *Journal of the Operational Research Society*.
- Huang, Y. L., Zuniga, P., & Marcak, J. (2013). A cost-effective urgent care policy to improve patient access in a dynamic scheduled clinic setting. *Journal of the Operational Research Society*.
- Huang, Y. L., & Zuniga, P. (2011). Dynamic overbooking scheduling system to improve patient access. *Journal of the Operational Research Society*.
- Zuniga Elizondo, P. (2010). Reducing the Negative Effects of Patient No-Show in Healthcare through Efficient Overbooking and Cancellation Policies. Las Cruces, NM: New Mexico State University.

Conferences

- Sidwell, P. Z. (2016) Engineering Economics International Experience for Community College Students. *American Society for Engineering Education Annual Conference 2016*.
- Andreas, A. K., Sidwell, P. Z. (2015) Orientation EVA: Helping Crews Get a Jump Start on Sim. *Mars Society Convention 2015*.
- Andreas, A. K., Sidwell, P. Z. (2015) Incoporating Research and Design in a Community College Engineering Program. *American Society for Engineering Education Annual Conference 2015*.
- Sidwell, P. Z. (2015) Interdepartmental Collaboration for Student Success. *TCCTA Convention 2015*.
- Sidwell, P. Z., & Andreas, A. K. (2014). Open Admissions and the Community College Pathway to Engineering. *First Year Engineering Experience Conference*.

Research Advising

McLennan Community College, Student Research Advisor

- Ollie Wess, "Flight Data Recording: Past, Present, and Future" (2022)
- Sierra Sullwold, "Traffic Engineering: Minimizing Construction's Impact on Traffic" (2020)
- Cade Pledger, "Makers Kits: Promoting Interest in STEM" (2019)
- Chenguang Li, "LED Digital Wall Clock for Mars Desert Research Simulation" (2017)
- Esteban Ramirez, "Martian Energy" (2017)
- Chris Snyder, "A study of variations within slicing software across multiple fused deposition modeling machines and settings" (2016)
- Victoria LaBarre, "Development of an Emergency Medical Service Rover (EMSR): Phase 1" (2016)
- Joshua MacFie, "Temperature Controlled Environment for Mars using FPGA" (2014)

Additional Work Experience

Production Assistant Plasticos y Alambres S.A. Monterrey, MX (June 2010 – Aug 2010 & Jan 2011 – May 2011)

- Led and managed "Project Delta", aimed to improve the workflow in the packing area of the factory
- Presented recommendations on how to improve resource utilization and overall material flow
- Summer 2010 Project (May 10 – Jul 10)
    - Initiated "Project Onyx", which provided guidelines for better control work in process (WIP)