

Sample 1

Faculty Development Plan

Technology & Engineering Studies

2021

Teaching:

A. Self-assessment: My situation is perhaps a bit unique compared to my colleagues in that I have been teaching at an R1 University (Purdue University) for the past four years before coming to Brigham Young University. In addition to three years of experience as a middle school teacher, four years as an MTC teacher, the university teaching experience has shaped my teaching philosophy and helped to prepare me for the opportunity I have now. Specifically, I have developed a teaching “style” centered on 1) open-ended design-based learning, 2) hands-on education, and 3) mentoring. Real learning happens as students are taught just enough to get them started and then sent on their way to collaboratively solve real-world problems. I relish the opportunity to mentor my students in these types of environments and watch as they design, build, automate, test, and refine their ideas. Aside from these content-centric experiences, my own experience as a classroom teacher at the middle school level has been invaluable when training aspiring teachers – the opportunity to share “what it’s really like,” to bring examples from the classroom, and to relate all aspects of learning to future employment has been both engaging and useful for my students. In every activity we do I try to explicitly tie students back to their future classrooms to solidify those connections.

B. Professional Goals:

- a. Short term:** I would like to propose, develop, and integrate a new course into our existing program of study. A meeting with our advisory board revealed that we need an adjustment to include a course specifically centered on training aspiring middle school teachers for the *College and Career Awareness (CCA)* class. As a required course for all middle school students CCA is the most taught course by our undergraduates and presents a unique challenge for many of them given the breadth of content included in the course. I plan to offer this course beginning Winter 2023 (I will be in the Philippines for Winter 2022 semester on a Fulbright).
- b. Long term:** Both of my colleagues in the department have well-established courses, teaching styles, expectations, and classrooms. My classroom was recently finished (under construction since August 2020) and I am excited for the opportunity to establish my own presence and teaching style within our department. Utilizing mid-course and end-of-course evaluations I plan to make at least one modification (e.g., assignment) to my courses each year to continually improving as a teacher.

C. Department & University Needs/Aspirations:

- a.** As a department we are in a unique situation as one of my colleagues will be retiring in the next five years. In our faculty meetings we have discussed this upcoming change and the plan is for me to assume his course load. I am excited and daunted by this prospect – I enjoy the content, but he has taught these classes for more than 35 years and I will need to increase my own content-knowledge to ensure I am prepared to teach these courses.

D. Accomplishments:

- a.** While I have successfully taught TES 476 for the past two semesters, TECH 112 during the Winter, and assisted with TES 330 during the winter semester, I have not yet had a full course load (2/2/1). I am looking forward to the chance to teacher more and pursue excellence in teaching. As a professor at Purdue University, I consistently averaged more than 4.5/5 on end-of-course evaluations. However, at Brigham Young University I have struggled to get students to “buy in” and complete the course evaluations – finding ways to motivate students to complete these is another goal I have for my courses moving forward.

Scholarship:

A. Self-assessment: Scholarship is an area that I feel I have done well in. In my first five years as an academic I have published more than 50 peer-reviewed articles; many of these have been in top-tier journals as well as others in more teacher-practitioner focused venues. Leveraging graduate and undergraduate students has been an effective model for me to spread the workload while also mentoring students towards their own future goals. In addition to the many articles, I have delivered multiple keynote presentations and many conference presentations, workshops, and trainings. Further, I was recently awarded an NSF DRK12 grant (1.2 million) to conduct research with teachers in Georgia over the next four years.

B. Professional Goals:

- a. Short term:** Leaving Purdue University (R1) and coming to BYU has been a learning experience as the culture, expectations, and especially the resources/focus are vastly different. Without the large cohort of graduate students, at my disposal at Purdue, I have had to adjust my approach. My immediate goal is to recruit, hire, and train at least 2 undergraduate researchers each semester who can assist on projects. While undergraduate training and mentoring can be laborious and time-consuming, I enjoy the mentoring opportunity and believe this will be a pathway to continued publishing success. Additionally, I will leverage my connections with my Co-PIs on the DRK12 grant to publish several papers from our grant.
- b. Long term:** I want to use my research to become a recognized expert in the following areas: open-ended design assessment and STEM teacher professional development. I plan to do this through continued research, publishing, and undergraduate mentoring. Pursuing additional grant opportunities and continuing to collaborate with a wide range of co-authors will help with these efforts.

C. Department & University Needs/Aspirations:

- a.** Our program area is currently working to discover the roles we best play; one of the faculty has tenure (professorial), one is switching over to professional and pursuing tenure, and I have not yet received CFS. I feel that I can leverage my background, experience, and interest in research to fill that specific role within our program area. Further, the college and university have stressed undergraduate mentoring and research and I feel that this aligns well with my goals and focus.

D. Accomplishments:

- a.** Successful external (NSF) funding, more than 25 peer-reviewed articles in competitive research journals, and more than 20 peer-reviewed articles appearing in teacher-practitioner journals, have all been successes so far. Additionally, I recently received a mentored-research grant (MRG; \$50,000) from the college to conduct a project with our undergraduate teaching majors in local schools.

Citizenship:

A. Self-assessment: While I am not widely involved with citizenship efforts at BYU (given my status as new faculty), I am very active in my larger professional community. I am on the advisory board for the International Technology & Engineering Education Association, I am a reviewer for 10 journals in our field, and I assist in the planning and deployment of student competition events at our national conference each year (2013-present).

B. Professional Goals:

- a. Short term:** Immediate goals include more involvement at the program and department level including committees, student recruitment, our student club (TEECA), and collaborations with colleagues. While I have many collaborators from Purdue University (due to my four years there), I do not have as many at BYU – something made even more difficult by the pandemic.
- b. Long term:** I want to become a recognized leader in our field (TEE) by providing service, mentoring, and direction. Specifically, I plan to pursue international involvement opportunities (in addition to my scheduled Fulbright) to broaden my understanding while also assisting and developing relationships with many individuals in my field. Being actively involved locally at BYU and with the local schools is also important and I will leverage my role as the student teaching coordinator to further this aspiration.

C. Department & University Needs/Aspirations:

- a.** With the retirement of my colleague (in four years) our program area will change significantly. I will need to assume more programmatic responsibilities as well as committee assignments.

D. Accomplishments:

- a.** I was invited to deliver multiple presentations and a keynote presentation to international audiences this year. These invitations speak to a growing citizenship presence internationally – something I plan to continue to foster and pursue. Additionally, I was named a Fulbright scholar recipient in February (Jan 2022-June 2022, Philippines) – an exciting citizenship opportunity to represent BYU and USA as a visiting professor for a semester in the Philippines.

Teaching Development Project Proposal

Technology & Engineering Studies

Teaching Experiences:

- A. Beginning with missionary service and MTC employment, to public education (3 years in Alpine School District at the middle school level) and undergraduate education (3 years at USU, 4 years at Purdue), I have many years of experience in the classroom and developing curriculum.

Teaching Goals:

- B. Incorporate the Gospel of Jesus Christ into each class (no matter how small)
- C. Prepare students for future employment as middle school teachers; specifically, provide students with examples of potential activities, approaches, and pathways for instruction in the *College and Career Awareness (CCA)* CTE course.
 - a. Model best practices in pedagogy (problem-based learning, design-based learning, project-based learning)
 - b. Provide necessary content knowledge for students to effectively teach CCA
 - i. Agriculture, Food & Natural Resources
 - ii. Architecture & Construction
 - iii. Arts, Audio/Visual Technology & Communication
 - iv. Business, Finance, & Marketing
 - v. Computer Science & Information Technology
 - vi. Education Training
 - vii. Engineering & Technology
 - viii. Health Science
 - ix. Hospitality & Tourism
 - x. Human Services
 - xi. Law, Public Safety, Correction & Security
 - xii. Manufacturing
 - xiii. Transportation, Distribution & Logistics

Teaching Project Plan:

Goal	Mechanism for measuring success
Strengthen the testimony of each student by incorporating the Gospel of Jesus Christ into each class <ul style="list-style-type: none">• Share 5-minute “life lessons with Dr. B” each Monday• Provide 5-minutes for “thankful moments” at the beginning of class on Wednesdays	Exit interview notes Teacher evaluations
Model best practices in pedagogy (middle school, DBL, PBL, PBL, CCA course)	Teacher evaluations Colleague observations (to be made by Steve Shumway, Maeser teaching award recipient)
Provide necessary content knowledge for students to effectively teach CCA	Syllabus & assignment review by Deborah Spielmaker (state CCA coordinator and USU professor) Student Praxis exam scores (before graduation and prior to licensure)

TECHNOLOGY AND ENGINEERING STUDIES 360
Design-based Learning in Technology and Engineering Studies
Course Syllabus, Winter Semester 2022

Course Description

This course is a hands-on experience centered on preparing students to teach middle school Technology & Engineering Education courses. During this course, students will be exposed to a wide breadth of topics, assignments, teaching styles, and activities within Technology & Engineering Education. Students will explore different pedagogical approaches in the context of career and technology education employment clusters and engage in iterative design, build, automate, test, and refine cycles.

Faculty

Dr. [REDACTED] 230-F SNLB, 801-422-6310, [REDACTED]byu.edu

Textbooks

No textbooks will be required for this course. However, several course readings (provided on canvas) will be required for participation in the course.

Objectives:

Upon completion of this course students will:

1. Have a strengthened testimony of the Gospel of Jesus Christ.
2. Identify learning theories that support effective approaches to teaching including situated learning, community of practice, pedagogical context knowledge, and so forth.
3. Identify and describe the features of project-based, problem-based, design-based, and inquiry-based approaches to teaching and learning.
4. Critique and develop a lesson plan that addresses TEE subjects and aligns with state and national standards (specifically those for CCA).
 - a. *CCA: A course designed to increase awareness of college and career pathways through simulations and project-based experiences. The College and Career Awareness course explores high school, college, and career options based on individual student interests, abilities, and skills. Students will investigate high-skill and/or in-demand jobs in the Utah labor market while developing workplace skills.*
5. Demonstrate the ability to effectively work in teams and solve complex problems.

Grade	Numeric	Points	Definition
A	93 100	4.0	Superior
A-	90 92.99	3.7	
B+	87 89.99	3.3	Above Average
B	83 86.99	3.0	
B-	80 82.99	2.7	
C+	77 79.99	2.3	Average
C	75 76.99	2.0	
F	74.99 0		Failure

Overview of Assignments

CCA Standard	Class Assignment
1.3: Explore the current Utah career clusters and pathways associated with each cluster and analyze the overlapping academic content and skills. 1. Agriculture, Food & Natural Resources 2. Architecture & Construction 3. Arts, Audio/Visual Technology & Communication 4. Business, Finance, & Marketing 5. Computer Science & Information Technology 6. Education Training 7. Engineering & Technology 8. Health Science 9. Hospitality & Tourism 10. Human Services 11. Law, Public Safety, Correction & Security 12. Manufacturing 13. Transportation, Distribution & Logistics	State/National Park promo SMART tiny home SMART tiny home State/National Park promo MicroKarts Lesson plan critique and development SMART tiny home; MicroKarts VexIQ State/National Park promo Children's toy VexIQ Children's toy VEXIQ
2.4: Apply critical thinking and problem-solving techniques.	all
2.5: Identify and demonstrate effective collaboration and teamwork skills.	State/National Park Promo; MicroKarts; VexIQ; Children's toy
4.1: Students will participate in multiple College and Career Awareness opportunities to develop a plan of study which aligns to personal education and career interests.	all

"Major" Assignments	Points
State/National Park Promo (G)	100
SMART Tiny Home (G/I)	150
MicroKarts (G)	125
Lesson plan critique and development (I)	100
VexIQ (G)	150
Children's toy (G)	100
Participation (I; 32 days * 10 pts/day)	320
<i>Sub-total</i>	<i>1045</i>

"In-Class" Assignments	Points
Promo storyboard	25
Promo marketing plan	25
Community outreach + reflection	25
Manufacturing workflow	25
Traffic light	25
Laser tag vest	25
Health Science in-class	25
Public Safety in-class	25
SMART house plans	25
SMART house framing	50
SMART house automation	25
<i>Sub-total</i>	<i>300</i>

Student Dress and Professional Standards

Students are representatives of BYU, TES, and the teaching profession and should always display a commitment to teaching. Regardless of how others act, it is the departmental requirement that we be represented in a professional manner. When visiting schools, male students typically wear a shirt buttoned to the collar and dress slacks, female student teachers typically wear dress slacks, a skirt (with appropriate blouse), or a dress. It is better to be overdressed than underdressed (no jeans). Students should address visiting teacher education students as Mr./Mrs./Ms., rather than by your first name or a nickname. Please make sure to wear your photo ID card when in the public school. These are available at 120 MCKB (Fingerprint and background check are required but you should already have these).

Attendance and Punctuality

You will receive participation pts each day for class (up to 10). Arriving for class tardy will result in a loss of 5 of your daily participation points and failure to attend class will result in the loss of all 10. Not participating in any class activity or being distracted (e.g., social media, texting, phone calls, etc.) will also result in a loss of participation points. Please be respectful and *present* – like most things in life: what you get out of this class will directly correlate with what you put in. If you know you will not make it to class, please contact the course instructor.

Utah Effective Teachings Standards

The Utah Effective Teaching Standards are a description of highly effective teaching as adopted by the Utah State Board of Education (R277-530). They also represent the knowledge and skills necessary to teach the Utah Core Standards. They align with national teaching standards (INTASC, 2011; ITEEA, 2021) and current research on effective teaching practice. The categories indicated on the rubrics describe phases of the development of teaching skills from the most basic to the highest levels of attainment and form a continuum of teaching practice.

Standard 1: Learner Development. The teacher understands cognitive, linguistic, social, emotional and physical areas of student development.

Standard 2: Learning Differences. The teacher understands individual learner differences and cultural and linguistic diversity.

Standard 3: Learner Environments. The teacher works with learners to create environments that support individual and collaborative learning, social interactions, active engagement in learning, and self-motivation.

Standard 4: Content Knowledge. The teacher understands the central concepts, tools of inquiry, and structures of the discipline.

Standard 5: Assessment. The teacher uses multiple methods of assessment to engage learners in their own growth, monitor learner progress, guide planning and instruction, and determine whether the outcomes described in content standards have been met.

Standard 6: Instructional Planning. The teacher plans instruction to support students in meeting rigorous learning goals by drawing upon knowledge of content areas, Utah Core Standards, instructional best practices and the community context.

Standard 7: Instructional Strategies. The teacher uses various instructional strategies to ensure that all learners develop a deep understanding of content areas and their connections and build skills to apply and extend knowledge in meaningful ways.

Standard 8: Reflection and Continuous Growth. The teacher is a reflective practitioner who uses evidence to continually evaluate and adapt practice to meet the needs of each learner.

Standard 9: Leadership and Collaboration. The teacher is a leader who engages collaboratively with learners, families, colleagues, and community members to build a shared vision and supportive professional culture focused on student growth and success.

Standard 10: Professional and Ethical Behavior. The teacher demonstrates the highest standard of legal, moral, and ethical conduct as specified in Utah State Board Rule R277-515.

Academic Honesty

The first injunction of the BYU Honor Code is the call to be honest. Students come to the university not only to improve their minds, gain knowledge, and develop skills that will assist them in their life's work, but also to build character. President David O. McKay taught that "character is the highest aim

of education” (The Aims of a BYU Education, p. 6). It is the purpose of the BYU Academic Honesty Policy to assist in fulfilling that aim. BYU students should seek to be totally honest in their dealings with others. They should complete their own work and be evaluated based upon that work. They should avoid academic dishonesty and misconduct in all its forms, including but not limited to plagiarism, fabrication or falsification, cheating, and other academic misconduct.

Honor Code

In keeping with the principles of the BYU Honor Code, students are expected to be honest in all of their academic work. Academic honesty means, most fundamentally, that any work you present as your own must in fact be your own work and not that of another. Violations of this principle may result in a failing grade in the course and additional disciplinary action by the university. Students are also expected to adhere to the Dress and Grooming Standards. Adherence demonstrates respect for yourself and others and ensures an effective learning and working environment. It is the university’s expectation, and my own expectation in class, that each student will abide by all Honor Code standards. Please call the Honor Code Office at 422-2847 if you have questions about those standards.

I sustain the University Honor Code, including the standards for dress and grooming, and would appreciate the support of each student in honoring these standards we have all agreed to uphold.

Preventing Sexual Harassment

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education. Title IX covers discrimination in programs, admissions, activities, and student-to-student sexual harassment. BYU’s policy against sexual harassment extends not only to employees of the university, but to students as well. If you encounter unlawful sexual harassment or gender-based discrimination, please talk to your professor; contact the Equal Employment Office at 422-5895 or 367-5689 (24-hours); or contact the Honor Code Office at 422-2847.

Students with Disabilities

Brigham Young University is committed to providing a working and learning atmosphere that reasonably accommodates qualified persons with disabilities. If you have any disability which may impair your ability to complete this course successfully, please contact the Services for Students with Disabilities Office (422-2767). Reasonable academic accommodations are reviewed for all students who have qualified, documented disabilities. Services are coordinated with the student and instructor by the SSD Office. If you need assistance or if you feel you have been unlawfully discriminated against on the basis of disability, you may seek resolution through established grievance policy and procedures by contacting the Equal Employment Office at 422-5895, D-285 ASB.

Course Calendar (tentative)

Class	Topic	Class Schedule	Readings (read <i>before</i> class)	Due Saturday (of the week listed) by 11:59 pm
1	Welcome, course expectations Agriculture, Food & Natural Resources	Syllabus, course calendar BYU State/National Park promo		
2	Business, Finance, & Marketing Hospitality & tourism	State/National Park promo		Promo storyboard Promo marketing plan
3	Human Services	Children's toy	PCK: Frykholm, & Glasson, (2005) PCK: Roth, W. M. (1996)	
4	Human Services	Children's toy		Community outreach reflection
5	Manufacturing	Workday – Children's toy	Situated learning: Brown, et al. (1989) Transfer: Perkins and Salomon (1989)	
6	Manufacturing	Workday – Children's toy		Children's Toy Manufacturing workflow
7	Computer Science & Information Technology	MicroKarts	PBL: Savin-Baden, M. & Major, C. H. (2004). PBL: Krajcik, et al. (1998) Buck Institute: https://www.pblworks.org/what-is-pbl	
8	Computer Science & Information Technology	MicroKarts		Traffic Light
9	Engineering & Technology	Workday – MicroKarts	PBL: Kirschner, Sweller, & Clark (2008)	
10	Engineering & Technology	Workday – MicroKarts		Laser Tag Vest
11	Computer Science & Information Technology	Workday – MicroKarts	DBL: Puente, van Eijck, and Jochems (2011) https://www.dblresources.org/	
12	Computer Science & Information Technology	MicroKarts Raceday		MicroKart Portfolio
13	Education training	Lesson plan critique & development	5e: Duran & Duran (2004)	
14	Education training	Lesson plan critique & development		
15	Health Science	VEX IQ		
16	Health Science	VEX IQ		Health Science in-class assignment

17	Law, Public Safety, Correction & Security	VEX IQ		
18	Law, Public Safety, Correction & Security	VEX IQ		Public safety in-class assignment
19	Transportation, Distribution & Logistics	VEX IQ		
20	Transportation, Distribution & Logistics	VEX IQ		Lesson plan critique & development
21	Transportation, Distribution & Logistics	VEX IQ		
22	Architecture & Construction	SMART Tiny Home		VEX IQ Challenge State/National Park Promo
23	Architecture & Construction	SMART Tiny Home		
24	Architecture & Construction	SMART Tiny Home		SMART Tiny home plans
25	Engineering	SMART Tiny Home		
26	Engineering	SMART Tiny Home		
27	Engineering	SMART Tiny Home		
28	Engineering	SMART Tiny Home		SMART tiny home framing
29	Arts, Audio/Visual Technology & Communication	SMART Tiny Home		
30	Arts, Audio/Visual Technology & Communication	SMART Tiny Home		SMART tiny home automation
31	Arts, Audio/Visual Technology & Communication	SMART Tiny Home		
32	Final	Parade of Tiny Homes Exit interviews with Dr. B		SMART Tiny Home portfolio

Scholarship Project Proposal

Technology & Engineering Studies

Scholarship Experiences:

- A.** I feel comfortable with academic publishing in both peer-reviewed and practitioner-journals; however, with limited graduate students at BYU it has been more difficult to publish as prolifically. Further, top-tier journals are difficult to get articles accepted into.
- B.** Since starting at BYU, I have received both external (NSF DRK12, 1.2 million) and internal (College of Engineering Mentored Research Grant, \$50K) funding. I would like to continue this pathway and pursue additional funding.

Scholarship Goals:

- A.** Successfully carry out all aspects (teacher professional development, data collection, analysis, dissemination, etc.) of the recently funded (Feb 2021) NSF DRK12 grant.
- B.** Successfully carry out all aspects (teacher professional development, data collection, analysis, dissemination, etc.) of the recently funded (March 2021) COE MRG.
- C.** Continue to publish in both academic and practitioner journals
 - a.** 2+ Tier 1 peer-reviewed journal articles each year
 - b.** 4+ teacher practitioner journal articles each year

Scholarship Project Plan:

Goal	Specific steps
Successfully carry out all aspects (teacher professional development, data collection, analysis, dissemination, etc.) of the recently funded (Feb 2021) NSF DRK12 grant.	<p>Hire one graduate student (10 hrs/week) as per the grant funding</p> <p>Hire one undergraduate student (10 hrs/week) as per the grant funding</p> <p>Lead teacher professional development (July 2021)</p> <p>Oversee all ACJ LBE sessions in tandem with student employees (Aug-Dec 2021)</p>
Successfully carry out all aspects (teacher professional development, data collection, analysis, dissemination, etc.) of the recently funded (March 2021) COE MRG.	<p>Hire one graduate student employee (Fall 2022) to oversee teacher PD</p> <p>Hire 5 undergraduate teaching majors (Fall 2022)</p> <p>Train all employees on the project and data collection (Aug 2022)</p>
<p>Continue to publish in both academic and practitioner journals</p> <ul style="list-style-type: none"> • 2+ Tier 1 peer-reviewed journal articles each year 	<p>Collaborate with DRK12 grant team on publishing efforts</p>
<p>Continue to publish in both academic and practitioner journals</p> <ul style="list-style-type: none"> • 4+ teacher practitioner journal articles each year 	<p>Oversee efforts by each of the COE MRG undergraduate employees to present and publish their experiences</p>

Citizen Project Proposal
[REDACTED]
Technology & Engineering Studies

Citizenship Experiences:

- A. I am actively involved in my professional organization and serve as an advisory board member for the International Technology & Engineering Education Association.
- B. I am the Council for Technology & Engineering Teacher Education Curriculum Committee Chair
- C. I was recently selected as a Fulbright Scholar and will be working in the Philippines during the 2022 Winter Semester

Citizenship Goal:

- A. Actively contribute to program and department initiatives.
- B. Form collaborative partnerships with fellow BYU faculty
- C. Assist with the TES student club (TEECA)
- D. Explore the potential for a study abroad as part of the Fulbright experience in the Philippines

Citizenship Project Plan:

Goal	Specific steps
Actively contribute to program and department initiatives.	Manage student teaching placements and observations
Form collaborative partnerships with fellow BYU faculty	Reach out to 2 faculty in the College of Engineering and 1 faculty in the Computer Science department to discuss current projects (DRK12 and MRG) and potential collaboration opportunities
Assist with the TES student club (TEECA)	Attend seminar weekly Assist with planning and logistics for student conference travel (ITEEA, 2022)
Explore the potential for a study abroad as part of the Fulbright experience in the Philippines	Research study abroad requirements prior to departure and facilitate conversations between universities

Sample 2

Faculty Development Plan

May 2021

Assistant Professor
Civil and Construction Engineering
College of Engineering
Brigham Young University

INTRODUCTION

The purpose of this faculty development plan is to align the University's goals for faculty development generally, with my personal goals for performance and progress as a new faculty member at BYU. Then to identify objectives and actions that when planned and executed will accomplish those goals. Through the BYU New Faculty Series (NFS) and department faculty mentoring it is clear that there are three distinct categories for efficiently organizing these goals and objectives, namely; research, teaching, and citizenship. This faculty development plan is therefore outlined along those areas.

The time horizon for this plan mainly emphasizes the next three academic years (2021-2024). However, additional milestones include CFS-review, and full-professorship review in their turn. It is also understood that regular plan updates will occur at or near department annual stewardship reviews; and personally at quarterly intervals (the first week at the start of each quarter), when I update my faculty profile and review my Research Agenda Matrix (example in the appendix).

SCHOLARSHIP

Clearly a primary purpose of my employment is the production of high quality scholarship. Scholarship can fulfill many purposes, including:

1. an opportunity to genuinely and positively contribute to society
2. building the good name of the University and of the Church
3. providing opportunities for students to learn deeply through participation in the research process
4. intellectual stimulation and personal fulfillment and satisfaction

Given that these independently significant purposes all exist within “scholarship,” it will be a primary priority in my employment at BYU.

Scholarship Goals:

- Be known through my academic community as an expert in “*Complicated human development problems at the intersection of the built environment, society, and the natural environment. In particular, sustainable solutions to housing and infrastructure challenges with multiple stakeholder interests across long time horizons.*” Recognizing this as a broad goal area, it is expected that over the course of my tenure it will narrow and be deepened in specific areas.
- Be a trusted and dependable collaborator that seeks to elevate students and others through my scholarship endeavors.
- Operate with integrity in my work, representing material truthfully (accurately and comprehensively as appropriate).
- Build the kingdom of God through my work

While I have trained in research and research methods from my doctoral studies, my non-traditional career path has been heavily professionally focused. I therefore need to work hard to continue to learn from others with respect to successful research practices, specifically in identifying topics within my research interests that align with specific types of funding. I also need to establish a pattern of continued reading and learning to stay current with the work of others and the broader context. Lastly, I need to find collaborators with whom I can establish productive relationships.

Objectives and Actions

To succeed in achieving my scholarship goals, I will undertake the following objectives and actions:

Reading

- 3 articles per week
 - Active reading - annotating w/ summary memos
 - File readings in EndNote
 - Share key takeaways from each article with anyone who will listen :-)
 - Read in the mornings of non teaching days
- Keep a book in my bag, which I read during my Tue./Thur. family reading hour from 7p-8p (and at other times as they occur) to continually expand my knowledge and understanding outside my specific field of research, but contributes to my wider project(s) boundaries

- Request papers from potential collaborators and others that I hope to engage with in my projects

Writing

- Keep a potential research project log on my technology devices, to capture ideas for new projects and iterations or variations of current projects.
- Write a project problem statement each month from my research log, as a way to think critically about how to structure projects in a clear and concise manner. Share project ideas with others for feedback and with potential collaborators.
- Share project problem statements with my research group
- Publish 3 journal papers each year in areas that I feel strongly will benefit humanity

Mentoring/Recruiting

- Invite each of the students (blanket invitation) in my classes for a one-on-one office hours meeting throughout the semester to identify potential candidates for RAs/TAs
- Hold a pizza / info session in the fall to advertise my research group and look for potential students to involve in projects
- Include a research-centric component to each of the undergraduate classes I teach, and look for individuals who excel in those assignments
- Hold a once weekly formal research meeting with my student researchers to allow them opportunities to present and receive feedback

Collaborating

- Participate (and at times hosts) local (department, college, and campus) research meetings at least 4 times per year, to expand my network while looking for mutually beneficial scholarship relationships
- Attend and present at two conferences per year
- Share my work with peers outside my research group, looking for connections and opportunities to engage in meaningful research projects

Funding

- Write a funding grant once each year as PI, to a core funding institution (e.g. NSF, etc.)
- Be a Co-PI on another grant each year, or write a second grant as PI
- Write a funding request/grant to a new organization each year (perhaps a private organization for alternate sources of funding).
- Maintain an average of 100k per year in funding for the first 6 years
- Work toward a large public grant request by the end of year 3
- Attempt an NSF Career grant in 2022, and if not awarded, attempt again until all opportunities are exhausted

TEACHING

Teaching is an area where I believe I have been blessed with some level of talent. I have had a number of positive teaching experiences, and get excited in the process of sharing (and learning) with students. Understanding the mission and aims of BYU, it is clear that teaching the next generation of leaders for society and God's kingdom is of paramount import, and as such is another primary priority.

Teaching Goals:

- Teach following the Savior's example, with love and genuine concern for the students and their learning/progression
- Help students help themselves - be conscious and conscientious about teaching students **How** to think and solve problems, rather than what to think
- Leverage teaching with scholarship - be expert at using my research to teach, and my teaching to further my research
- Teach well in the classroom - consistently receive high student ratings for my teaching, and outside teaching ratings (eg university CTL, etc.)
- Teach with outcomes! - Be clear with myself and my students about course purposes, and the associated course (and individual class/unit/assignment) outcomes
- Teach and exemplify my teachings outside the classroom - in addition to course subject matter, be an example and teach truth at all times in my formal and informal interactions with students and others

Objectives and Actions

To accomplish my teaching goals, I will need to be **consistent** in a cyclical approach of teach→ evaluate→ adjust → teach. Thus, the following teaching objectives and actions share the theme of continuous improvement!

- To an appropriate degree, annually request to teach courses that closely align with my research interests
- Maintain a graduate research course that is closely centered in my research domain
- In the two weeks prior to each teaching semester, consciously:
 - review the course purpose and associated learning outcomes for necessary adjustments
 - review the culminating experience the course points to and evaluate past courses to ensure the course outline/schedule are appropriately and adequately calibrated to that outcome
 - review my course outline and look for ways to include and improve assignments toward data generation and/or data analysis such that:
 - Well performing students can be identified for future RA positions

- Undergraduate students get an introduction in the research process and experience
- The assignment output can contribute in some way to current research projects in my lab
- Invite each of the students (blanket invitation) in my classes for a one-on-one office hours meeting throughout the semester to get to know the students personally and share, model, and inspire one-on-one as appropriate
- Incorporate my life and life path (decisions, blessings, challenges, family) into the classroom as an example of one who is trying to be a disciple of Jesus Christ
- Incorporate prayer and spiritual thoughts as a regular element in classes
- Bear direct testimony in each class at least once per semester

Citizenship

Citizenship is a great opportunity to take the blessings, resources and talents I have been given, and use them to build a greater whole (department, university, community, society). It also provides yet another opportunity to grow personally, have new experiences, and make new relationships. Citizenship within the university and outside the university is an important priority of my employment.

Citizenship Goals

- Be a contributor - problem solver - and a team member that others want to work with
- Identify professional and academic organizations that my experience and academic interests align with and then make a long-term commitment of service
- Volunteer - (appropriately and in balance with work/family/gospel priorities) offer to serve (not just when asked) when people are clearly needed at any level in the university, and personally with students, peers, and others
- Accept assignments when asked by leaders (sharing appropriate and honest concerns and limitations of time and other preceding priorities), and deliver on commitments
- Seek out students who can benefit from counseling and mentoring

Objectives and Actions

While some of the aspects of citizenship are understandable in the abstract, my short tenure suggests that there is yet much I need to understand to develop clear objectives and actions. Thus, for the time being, the following will be sufficient as the living nature of this faculty development plan will “fill-out” parallel to my experience and learning.

- Serve actively in the CCE graduate committee as appointed - attending all non-conflicting meetings
- Serve actively in the undergraduate curriculum committee for the undergraduate CFM degree as invited - contributing as requested
- Serve actively in the ACI (American Concrete Institute) 334 committee, attending at least one of the two meetings every year
- Participate in the IASS (International Association of Shell and Spatial Structures) work group 5, and attend the annual conference at least every other year
- Find out where I best belong in the ASCE landscape and contribute (likely the CRC - Construction Research Congress)

Other

In addition to the three priorities outlined above, there are a host of areas and opportunities as a result of my previous professional experience and as a benefit from my connection to the university. In the coming years I will evaluate how these can and should be balanced with my current position. They are acknowledged here (and others will no doubt be added over time) and they will be addressed as appropriate.

Study Abroad

My international experience, coupled with current research interests, would suggest that participating in study abroad activities would be a natural fit for students and my work. I aspire to be in a position to participate in experiential learning opportunities that will help students see and think broadly about human development, while also capturing data in a meaningful way. I need to evaluate how this has been successfully done by others, and how it might work for my situation.

Consulting

Once again, my professional experience affords me opportunities to get involved in projects that I am well suited to assist. Naturally there are financial benefits as well. I aspire to be in a position where I can appropriately bring together opportunities that are interesting, useful in my research, helpful for my students, and financially rewarding. A tall order to be sure! I need to develop a way to weigh opportunities that balance those aspects with my primary employment and expectations, as those occasions may become an option in the future.

Conclusion

I desire to fulfill my appointment as a new faculty member in the Civil and Construction Engineering College with my full capacity. This plan is an outline and a guide that will help me as I work toward that end. I recognize that that Lord will help me as I 'seek first His kingdom,' then go to work 'keeping an eye single to His glory.' I intend to implement this plan beginning with the fall 2021-2022 semester, building on these first dynamic months of my employment at BYU.

Research Agenda Evaluation Matrix

Broad Trajectory	Key Area	Sub Area	WHY (motivation)	Potential Research ?(s)	Data Sources	Research Methods	Potential Collaborators	Outcomes	Publication Venues	Funding Sources	Student Involvement	Resources Needed	Notes
Sustainable Community Development <i>Integrating Social, Economic, Political, and Environmental Factors on Infrastructure and the Built Environment</i>	Multi dimensional Complexities of Large Projects and Interdisciplinary Problems	PPPs for Transportation	Outgrowth of dissertation Broad application of some principles to "complexity"	Effect of Institutional Maturity on PPP contract and network structure	Full length interviews / Analysis of full media corpus	Deep-dive comparative case analysis w/ SNA	Ray Levitt - Stanford	Journal Paper - initial draft complete	EPOJ / Public Admin?	N/A			
		Stakeholder Construct	Foundational to the notion of how to understand & engage in CEM processes High lights the need for continued interdisciplinary engagement and study		Bibliographic Citation Indices / Full abstracts	Content and Citation analysis	Geert DeWulf - Twente University	Journal Paper - initial draft complete	???	N/A	Grad Student for updating?		
	Concrete Domes	Thermal performance of high mass / thin shell concrete domes with seamlessly insulated exteriors	Sustainable structures require definitive data-driven evidence to evaluate and facilitate adoption of new innovative modes of construction	How do various use cases of monolithically insulated concrete shell structures perform when benchmarked against current energy standards?	Longitudinal collection of energy consumption data from various building envelopes	Comparative statistical analysis	???	Journal Papers, energy consumption models	???	???	Undergraduate and Graduate Experiential learning	Data Collection Instruments (\$k-10k); Structure access - verbally granted	
		Commercial Success of or Radically New Building Concepts	Innovative ideas and concepts often gain in tail support, but there are surprisingly few models of how successful concepts become commercially viable	How has the concept of air-supported concrete dome structures made it from multiple failed approaches to a commercially successful industry? In what industries?	Company project databases	Case Study and Archival Analysis	Industry - MDI / DT / DTI / SI / ES2 Philippe Block ETH - Zurich	Journal Papers / Comprehensive Data set (2000+ specialty building envelopes / multiple markets)	IASS / ACI?	???	Undergraduate and Graduate RAs and students - data collection and organization	Industry support	
		High resilience, low cost housing in low developing economies	Housing in emerging markets is often low grade. With the addition of new technologies and techniques, similar and lower cost but better options may be available. Safe, clean, sustainable, resilient	How have existing new technology introductions performed over time? What are the impacts and unintended consequences that have borne out as a result of such instances? After 10+ years, have the path of progress continued? What are barriers of replication?	Existing projects - Survey and "light" ethnographic data collection	Ethnographic case studies	Local universities / Sociology?	Journal Papers Case Studies Early typology of sustainability factors	???	NSF USAID	Field Studies Lit review Network data	Travel Permission Travel Funds Prep work on networks	
	Low cost housing development (US centric)	Exploratory research in the perceptions of low cost housing stakeholders	Issues of poverty and inequality are necessarily affected by the disparity between low-wage earners income and the cost of housing options, yet market forces incentivize private sector housing developers to optimize ROI, and civil society largely supports the additive perspective								CFM 426 student survey assignments		
		Understanding the Stratification of Housing Stakeholders											
	Integrated Sustainability in the Built Environment	Evaluating "Comprehensive" Sustainability in Developing Economies	Silo-ed approaches to understanding sustainability lack the informative "punch" in building theory and best practices for development implementation	What cases exemplify aspects of integrated best practices in full-scope sustainability?	Case studies in field	Case research Comparative analysis	Bishnu Arikari	Datasets Explanatory Models Journal Papers Conference Presentations Funding - Basework		NSF USAID			
Other	Declining US Construction Labor Market	Exploratory research to understand and define the skilled construction labor deficit problem, who is working on it, and what we do next	Construction jobs are expected to be added at twice the rate of the average of all other industries, however skilled construction labor is aging and employers are often (80%) suggesting this is the largest problem the industry faces.	Who are the stakeholders in the construction labor deficit problem, and what are their interests, abilities, and current actions to understand and solve this problem?	Literature Review Government Reports Survey Data - to be collected	Basic Statistics		Conference presentation	Conference papers Journal papers	DOL - ?	Undergrad / Grad survey collection and interviews	Informants - students	