Name
Faculty Development Plan
Information Systems

SELF-ASSESSMENT

While growing up, I became passionate about the disparate topics of technology, problem-solving, scientific inquiry, teaching, and the Gospel of Jesus Christ. I have explored these passions in many ways, but nowhere can they be better jointly expressed than as an information systems professor at Brigham Young University. I love what I'm doing and am devoted to the aims of a BYU education to help students achieve their temporal and eternal goals.

Strengths, Skills, and Competencies

One area of particular strength I have is that is that I doggedly seek to learn and stay up-to-date on emergent new technologies and how their use impacts people, organizations, and society. In nearly every class session, I open the first few minutes to discussion of current events related to technology. I often assign student current event presentations. This helps me to keep up with the changes in my field and adjust curriculum to be relevant to students.

I have been trained and mentored extremely well. I was fortunate in my doctoral studies to be taught by world experts in information systems, research methods, statistical analysis, and psychophysiological recording techniques. This has prepared me well to produce high quality research. In research collaborations, my favorite activities are working through the research design of studies, especially experiments, and developing theoretical argumentation to support testable hypotheses. I have a strong background in techniques, measures, and theories associated with "NeuroIS", or the application of neuroscience and cognitive psychology to information systems problems. I try to make my research both rigorous and practical and my research has been well-cited in the media.

My path to BYU has taken me through three other universities, each with their own cultures and unique student bodies. The experiences I have gained through teaching a diversity of students and courses have made me a much better teacher and able to work with students with a variety of skills and backgrounds. I have the ability to take complex topics and communicate them in an organized and understandable way to students. Partially this is due to the fact that I constantly refine and adjust my course content, assessments, and learning activities. Every semester, I make changes, often large changes, to improve the quality of the courses I teach. I also experiment with pedagogy to match my capabilities to the ways my student's best learn. I have had success in balancing difficult academic rigor with fun and enthusiasm in the classroom.

My colleagues have told me that I am collegial and navigate organizational politics well. I try to treat those around me kindly and get to know people. This often takes me out of my comfort zone, because out of the classroom I can be quite shy. I have been in organizations with little collegiality and I know the importance of mutual respect and kindness. Before joining BYU and

in my first year here, I have tried to fulfill my committee and other citizenship assignments promptly and with the goals of the organization and students in mind.

Interests and Opportunities

In scholarship, I am fascinated by the broad impacts of information technologies on individual perceptions and behaviors. My main focus area is on how information technology usage both influences and is impacted by individual cognitive and emotional processing. There is a critical mass of researchers in the department working in similar areas which provides ample opportunities to collaboration on projects. One of my goals is to begin projects with department collaborators so that I can leverage the existing capabilities and expertise already here.

In teaching, I have interest in and have taught a variety of courses. My interest in information security helps to inform the changes being made to IS414 as part of my course development project. I have interest and some experience with analytics and this is an area I would like to explore to develop my teaching capability.

Areas to Develop

I would like to improve in a number of broad and specific areas including the following:

Writing speed and consistency – I think the most important area for me to develop is the ability to write more quickly and to schedule time in to write daily without interruption. I am already working on this goal, but it remains a high priority that will determine future success.
Turnaround time on resubmissions – Whether a manuscript needs to be revised for resubmission or needs to be submitted to a different outlet, I would like to decrease my turnaround time. As is common to many scholars, I sometimes work towards the "perfection" of a manuscript instead of getting it into the review process earlier when is most appropriate.
Better leveraging interactions with students for mutually beneficial goals – I am still learning how to best interact with research and teaching assistants to help all of us reach our goals. This is an ongoing process that is improving. I plan to track tasks more effectively in the future.
Statistical and methodological knowledge – I am strong in some statistical and methodological techniques, but there are others (e.g., collecting and analyzing fMRI data) that I would like to further develop. Fortunately in the department and across the campus, there are excellent colleagues with skills and knowledge that can assist with this development.
Prioritization – This is a broad topic that I would guess almost all in the "messy middle" need to constantly consider. Because so many information systems topics are compelling, I need to better focus on the most promising projects and those closest to completion. I also need to revisit work-life balance decisions to make certain that I am prioritizing that which is most important.
Pipeline – I have a number of current projects, but would like to develop the pipeline so that there are a manageable number of projects at all of the major stages of the research process.

PROFESSIONAL GOALS

SCHOLARSHIP

My goal is to become a prolific scholar in information systems by publishing impactful research in our top journals. To do this, I will need to capitalize on my strengths above, take advantage of my opportunities, and improve myself as a scholar. The goal of each of my projects must be publication in our elite journals (currently MIS Quarterly, Information Systems Research, Journal of Management Information Systems, and the Journal of the Association for Information Systems). Fortunately, I currently have promising projects to be submitted and have begun projects with new collaborators with plans for more.

Research Plan
My primary goal in the next year is to move each promising project along in my pipeline towards submission. This means that the projects with data collected that are already closest to publication such as unpublished sections of my dissertation, a multi-method project on media mental models, meanings, and perceptions, and an information privacy project are submitted to journals. Next, I need to collect data for several projects. First, I was fortunate to receive a mentoring environment grant (MEG) and this project is ready for data collection. Second, I plan to collect data for additional projects related to technology related cognitive scripts, security breaches, and technology defects. Finally, I have a few projects in the early idea/theorizing stage and would like to work on the literature review and research design. These activities will increase the throughput of my pipeline.

To increase the likelihood of publication, I plan to attend more conferences to network with editors and scholars in my research areas. In addition to that, I plan to seek out early feedback from expert researchers to shape and prioritize my work.

Scholarship Goals

- Hold daily, scheduled, uninterrupted writing time
- Prepare at least one manuscript for submission with a BYU student co-author
- Begin a project with a new collaborator
- Read the abstracts from all papers published in our elite IS journals this year to keep up with new research
- Perform two new experimental data collections
- Submit at least three articles to top-tier IS journals
- Submit manuscripts to at least two conferences.
- Meet editors of elite journals at conferences

TEACHING

My overall goal as a teacher is to provide interactive opportunities for students to think—both inside and outside of the classroom—and to engage with technology. From a philosophical perspective, I have always seen my role as a "meddler-in-the middle" where I design learning opportunities and provoke, encourage, and facilitate individual thinking while allowing students to wrestle with difficult content. My aspirational teaching goals are to become a better servant leader and inspire students to become greater disciples.

My main efforts in teaching this year will be to take on IS201 as a somewhat new preparation and to completely overhaul IS414 to become an information security course. The latter is an extensive course development project. To succeed, I will see out advice from fellow colleagues and resources on campus. I have good relationships with colleagues who have taught similar courses. Another great learning experience for me is to receive feedback from experienced colleagues. Our department always assigns a faculty member to provide feedback on teaching and I look forward to that feedback in these courses. I also plan to use the student consultants on teaching to give feedback and help improve the course.

Teaching Goals

- Redesign IS414 to focus on information security by developing new materials, exams, and assignments.
- Prepare for IS201 and improve the course through the semester
- Read one book on academic teaching and apply at least one lesson from it to my teaching.
- Solicit feedback from the student consultants on teaching and make changes based on this feedback.

CITIZENSHIP

My department has given me light, but meaningful service responsibilities. I intend to fulfill those assignments within the department and continue my service to the information systems field.

Citizenship Goals

- In my IS news assignment, we successfully transitioned to the new WordPress site. The next activity is to develop a smoother schedule for posting new content and evaluating the traffic information to determine the most effective avenues for promotion.
- Bring in at least one external guest for a research seminar.
- In terms of collegiality in the department, my goal is to better get to know all the IS faculty members.
- As managing editor of AIS Transactions on Replication Research, my goal is to fully implement DOI numbers for the journal and begin the process of getting the journal indexed.

Relationship Between Goals and Department and University Aspirations and needs

I strongly believe in the mission of the university and believe my goals help to further its aims and our department aspirations. Specifically, my goals support this mission by:

Raising the research profile - In the BYU Marriott School of Business and the Information Systems Department, one of the main goals is to raise the research profile and improve our rankings. My research goals are designed to do that. I seek to publish in our top-tier journals to increase that profile.

Better prepare BYU Marriott and information systems students for careers and service in the kingdom – My new preparation is the information systems content course that all BYU Marriott students are required to take. This class is crucial to students in all of the business disciplines to understand how technology works in their fields and is a strong predictor of success. My other course is one of our IS Core classes and will help all of our students better prepare for the world where information security is an important aspect of nearly all technical jobs. My efforts in these classes are intended to make my courses more spiritually strengthening, intellectually enlarging, character building, and lead to lifelong service. I hope they also contribute to our overarching goal of inspiring learning.

Serve the information systems discipline – My department seeks to strengthen the Association for Information Systems and my efforts as managing editor of one of our association's journals helps that goal.

Resources Needed

I am extremely grateful for the resources I have been given. To succeed, I need research participants and a lab, a research assistant, teaching assistants for my courses, and funds for travel and equipment. Thus far, I have been provided with all of these resources through department, college, and university (e.g., MEG) funds. If possible, a single course preparation per semester is also helpful in freeing up time. I have been fortunate to have this time.

COURSE DEVELOPMENT PROJECT

For my course development project, I am completely redoing IS414 to focus ~75% on information security and 25% on business processes and controls. The previous iteration of the course was ~90% business processes and controls and 10% fraud and information security. This is a large project that is still ongoing because the course switched from fall to winter semester.

I have attended a CTL workshop to revise the learning objectives for the course and have been working with Susan Eliason at CTL on this project. She is aware of the course semester change.

Attached is the current version of the IS414 syllabus.

WINTER 2019

IS 414 SECTIONS 01 & 02
INFORMATION SYSTEMS SECURITY AND CONTROLS

SECTION 01 SCHEDULE: TBD
SECTION 02 SCHEDULE: TBD

DISCLAIMER: *This syllabus and the schedule of readings, assignments, and activities may be changed by the instructor to maximize student learning needs and meet the objectives of the courses.*

INSTRUCTOR & TEACHING ASSISTANT INFORMATION

INSTRUCTOR:	Dr. Name
CONTACT INFORMATION:	Location, Name@byu.edu
OFFICE HOURS:	TBD
COURSE WEBSITE:	https://learningsuite.byu.edu
TEACHING ASSISTANTS:	TBD
	Teaching Assistant Office hours will be posted on Learning Suite

REQUIRED MATERIALS

TBD

COURSE INFORMATION

Course Purpose:

This course is designed to provide information systems professionals with the information, skills, and insights that they will need to secure organization information and apply controls to business processes.

Course Description

This course is a broad introduction to how information flows through an organization and the managerial issues of securing that information. Because security is multifaceted, the topics of the class range widely including technical, managerial, physical, and psychological issues. A key objective of the class is to develop a security mindset, in which one learns to think like an attacker for ways to exploit a system.

The control environment of the business is also discussed. We will look at this environment from both a corporate perspective and from an information systems perspective. Examining control environments necessarily involves assessing the risks that a business faces and the controls set to mitigate those risks.

Prerequisite

Admission to the IS Core

LEARNING OUTCOMES

Develop Understanding of Information Security Principles
Develop an understanding of confidentiality, authentication, availability, authentication, non-repudiation and how these concepts are applied in modern organizations

- Contributes to program outcome *1. Gain a Knowledge of Information Systems and Business*

Identify Information Security Threats and Vulnerabilities
To become familiar with attack vectors that are commonly executed in attempting to access and compromise or steal data

- Contributes to program outcome *1. Gain a Knowledge of Information Systems and Business*

Learn Methods of Attack Prevention and Detection
To learn modern methods of attack prevention and detection

- Contributes to program outcomes *3. Make Informed Business and Technical Decisions* and *4. Develop Lifelong Learning Skills*

Evaluate Internal Controls of Business Processes
Analyze a set of business processes and evaluate the appropriateness and deficiencies of internal controls

- Contributes to program outcome *1. Gain a Knowledge of Information Systems and Business*

I. GRADING CRITERIA, GUIDELINES, AND ASSIGNMENTS

Participation and Professionalism: Learning is not a spectator sport. Students are expected to come prepared with assignments (e.g., readings, homework, quizzes) completed so they are ready to participate in discussions. Participation will also be assessed during class debates, discussions, and activities. Participation is **NOT** the same as attendance. To earn points for participation, students must actively engage in classroom activities and discussions.

Professionalism also impacts your grade. Students may earn points for outstanding professionalism, but may also lose points for unprofessional behavior such as:

- Rudeness to classmates, teaching assistants, staff, and visiting professionals
- Constant tardiness
- Disrupting class
- Harassing TAs and the professor for additional points
- Any other form of unprofessional behavior

Attendance: While points are not assigned for attendance, the class depends heavily upon student attendance. Students who miss significant class time may have their professionalism scored reduced.

Exams: Students always report that my exams are more difficult than they expected; plan accordingly! The format of each exam will be announced in-class prior to the exam. All exam dates are listed in the schedule. The Final Exam will be comprehensive. Makeup exams will only be given for legitimate reasons (e.g., documented illness or university excused absence). Students should notify the instructor as soon as possible about missing an exam. There will be NO makeup exams for undocumented or unexcused absences.

Introduction to Information Security Project: Many students do not have a deep understanding of information security prior to entering this course. This project will help students learn the basics of information security and how understanding "hacking" can fit into a gospel perspective.

Group Current Event Presentation: Information security is a rapidly changing and extensive topic area. To supplement the material in the textbook and familiarize students with additional relevant concepts, each project group is required to give one presentation on a current information security event/topic. These presentations will last a MAXIMUM of 10 minutes and are intended to give students a broader understanding the topic. Groups will be evaluated on whether they adequately introduce the topic and link it to other course material as well as on creativity and entertainment value. Interactive demonstrations, games, etc. are encouraged. Topics need to be approved by the instructor and link to recent news articles.

Group Organizational Security Project: This project is to integrate and apply the knowledge gained through the semester into two deliverables. First, a written report of an organizational security audit or detailed explanation of a security exploit is required. Second, with the increasing use of social media and other forms of electronic communication, it is important for future IT professionals to learn to communicate using these technologies. Each project group will create a "YouTube-style" video (4-12 minutes) to explain the content of the project in an interesting, creative, and engaging way. Please have fun with this. Students may record videos of themselves, capture computer screens, use clips from movies or other videos (educational assignments qualify for fair-use exceptions to copyright laws in the US), animations, etc. when creating their videos. Online video creation websites like PowToon are not prohibited, but student videos made using these sites tend to be poor in quality.

Group Peer Evaluations: At the end of the semester, you will evaluate and be evaluated by all members of your group. The objective of this evaluation is to ensure 100% commitment and performance from each member of the team. An individual's score on the group assignments **will be scaled** based on peer evaluations. Please be a productive group member. If group members inform the instructor that a student did not participate in group work, he or she will **NOT** receive points for the work.

Late Work: Late work is not accepted in this course unless there are extenuating circumstances determined by the instructor.

Grading:

ITEM	POINTS POSSIBLE
Intro to Information Security Project	50
Homework/Labs/Quizzes	200
Group Current Event Presentation	25
Midterm Exam	275
Group Organizational Security Project	150
Final Exam	300
Total	1000

Grade Scale:

GRADE	POINTS
A	93% and higher
A-	90% - 92.9%
B+	87% - 89.9%
B	83% - 86.9%
B-	80% - 82.9%
C+	77% - 79.9%
C	73% - 76.9%
C-	70% - 72.9%
D+	67% - 69.9%
D	63% - 66.9%
D-	60% - 62.9%
F	Below 60%

II. COURSE SCHEDULE*

Week	Date	Topic	Assignment Due
1	*08-Jan*	Introduction to the Course	
	10-Jan	Business Cycles - Revenue	Quiz: Revenue Cycle
2	*15-Jan*	Business Cycles - Revenue	
	17-Jan	Business Cycles - Expenditure	Quiz: Expenditure Cycle Intro to Information Security Project
3	*22-Jan*	Business Cycles - Production and HR	Quiz: Production Cycle
	24-Jan	Business Cycles - Production and HR	Quiz: HR Cycle
4	*29-Jan*	Fraud and Computer Fraud	
	31-Jan	Controls and Frameworks - Intro	HW: Fraud Methods
5	*5-Feb*	Controls and Frameworks - COSO/COBIT	Quiz: Frameworks
	7-Feb	Controls and Frameworks - GDPR, Security	
6	*12-Feb*	Threat modeling	
	13-18 Feb	MIDTERM EXAM in Testing Center	
7	*19-Feb*	Cryptography - Intro	
	21-Feb	Cryptography - Block Ciphers and Hashes	Lab: Threat Modeling
8	*26 -Feb*	Cryptography - Asymmetric	
	28-Feb	Cryptography - Certificates and PKI	Lab: Symmetric Cryptography
9	*5-Mar*	Vulnerability Scanning	Lab: Asymmetric Cryptography
	7-Mar	Vulnerability Exploitation	Lab: Digital Certificates and PKI
10	*12-Mar*	Systems Hardening	Lab: Vulnerability Scanning
	14-Mar	Physical Security	Lab: Exploitation
11	*19-Mar*	Authentication - Passwords, MFA	Lab: Systems Hardening
	21 -Mar	SQL Injection and XSS	
12	*26-Mar*	Social Engineering and the human element	Lab: Password Cracking
	28-Mar	Network Security Monitoring	Lab SQL Injection and XSS
13	*2-Apr*	INTEX	
	4 -Apr	INTEX	
14	*9-Apr*	Information Security in Organizations	
	11-Apr	Information Privacy	Lab: Social Engineering
15	*16-Apr*	Security and Society	Organizational Security Project
16	*19-24 Apr*	FINAL EXAM in Testing Center	

* This schedule may be adjusted as the semester progresses. The current schedule will be posted on Learning Suite.

COURSE DEVELOPMENT PROJECT GRANT PROPOSAL

As IS414 has evolved into a much more technical information security course, there has arisen a need for me to demonstrate security exploits and how security professionals can stop or mitigate the risks of these attacks. Because of this, I would like to purchase hardware used by hackers to perform various attacks. This will enable me to better carefully show the students in our lab the dangers of the attacks and how we stop them. If I am not able to purchase "hacking" items with BYU funds, I would like to purchase multi-factor authentication keys (e.g., Google Titan Key, Yubikey, RSA SecurID key) and demonstrate their use.

Here are the items I am considering for the IS414 revamp (not all of which can be purchased using the grant):

Wi-Fi Pineapple Nano
This is a wireless network auditing tool to demonstrate vulnerabilities in wireless networks.
https://hakshop.com/products/wifi-pineapple?variant=81044992
$100

USB Rubber Ducky
This tool is a USB drive that can perform scripting (key injection) attacks.
https://hakshop.com/collections/physical-access/products/usb-rubber-ducky-deluxe
$45

Bash Bunny
This is a different USB drive tool for penetration testing.
https://hakshop.com/collections/physical-access/products/bash-bunny
$100

LAN Turtle
This device is a USB to Ethernet tool for allowing network attacks.
https://hakshop.com/collections/network-implants/products/lan-turtle
$60

Packet Squirrel
Designed to perform man-in-the-middle attacks in networks
https://hakshop.com/collections/network-implants/products/packet-squirrel
$60

Alpha Network Adapter
Long range Wi-Fi adapter.
https://smile.amazon.com/Alfa-AWUSO36NH-Wireless-Long-Rang-Network/dp/B0035APGP6?sa-no-redirect=1#customerReviews
$35

Ubertooth One
A Bluetooth hacking tool
https://hackerwarehouse.com/product/ubertooth-one-h/
https://store.ryscc.com/collections/all/products/ubertooth-one
$109-155

Key Logger
To demonstrate keylogging attacks.
https://smile.amazon.com/Keyllama-4MB-USB-Value-Keylogger/dp/B004ZGXU48/?tag=inverse03-20&sa-no-redirect=1#customerReviews
$60

Google Titan Key
Multifactor authentication physical key.
https://store.google.com/product/titan_security_key_kit
$50

Yubikey
Multifactor authentication physical key.
https://smile.amazon.com/Yubico-YubiKey-NEO-USB-Authentication/dp/B00LX8KZZ8?sa-no-redirect=1
$50

SCHOLARSHIP STRATEGIES PROJECT

Overall, I want my scholarship to be meaningful and impactful by publishing thoughtful research in our top journals. I plan to target our top-tier journals (currently MIS Quarterly, Information Systems Research, Journal of Management Information Systems, and Journal of the Association for Information Systems) as my research outlets and will consider other outlets if the top four do not work. Fortunately, I currently have promising projects to be submitted and have begun projects with new collaborators with plans for more.

Research Plan
As discussed elsewhere, in my proposal, my goal this year is to move everything in my pipeline along. Projects close to publication need to be published, those with data collected need analysis, several with research questions and hypotheses need data collection, etc. My planned activities discussed above will increase the throughput of my pipeline.

I have expanded upon my scholarship goals below and include strategies that I will follow to help me meet these goals.

Scholarship Goals

- Hold daily, scheduled, uninterrupted writing time
- Prepare at least one manuscript for submission with a BYU student co-author
- Begin a project with a new collaborator
- Read the abstracts from all papers published in our elite IS journals this year to keep up with new research
- Perform two new experimental data collections
    - Data collection for MEG project – by Nov 2018
    - Data collection for scripts – by February 2019
    - Data collection for security breaches – by January 2019 (secondary data)
- Submit at least three articles to top-tier IS journals
    - "Receiving paper to JAIS – June 2018
    - "Sending" paper to JMIS – September 2018
    - Privacy paper – January 2019
    - Meanings paper – February 2019
- Submit manuscripts to at least two conferences. Our main conference season due dates are April – June. I plan to have manuscripts ready for AMCIS, ICIS, and HICSS by the due dates.
- Meet editors of elite journals at conferences

Strategies of Scholarly Productivity

In addition to the activities and goals highlighted above, I will be implementing the following strategies to improve my productivity:

- Attend the SIGHCI meetings associated with AMCIS and join this interest group.

    - This will be assessed as a success if I attend and start one project as a result.
- Associated with my regular writing time, I plan to hold “writing office hours” During the fall semester, these will be in the morning at 9:00 AM. The winter semester hours will be determined after the core schedule is finalized.
    - I will measure this by the percentage of days I successfully write during those hours. These will be tracked in a spreadsheet.
- Use the faculty editing service twice.
- Start writing as soon as I begin a new project instead of waiting until I start the literature review.
    - I will assess whether I did this and also evaluate whether it decreased the overall writing time of the project.
- Report my writing to a writing partner/group.
- Track my RA task progress more carefully to better utilize their time

CITIZENSHIP PROJECT

My colleagues in the information systems department have excellent rapport and collegiality. We often go to lunch together and there is a high level of collaboration on research and teaching activities. Because of the way our curriculum is structured, especially our IS Core, we are required to collaborate on teaching and have assignments and activities that cross course boundaries.

Even with this, there are three activities I plan to introduce this year to contribute to the citizenship in our department. They all will force me to stretch by stepping outside the comfortable bounds of my office.

1. **Writing Group** – The information systems department does not currently have a writing group where colleagues are accountable for the time they place towards writing and have the ability to gain feedback on writing. I plan to implement a writing group and invite my colleagues to participate.
2. **Internal presentations of research** – This year I have been asked to coordinate our research seminar. This has historically been the one or two invited scholars who chat with our department at a single meeting. We do not have a regular research seminar or "brown bag" where faculty can present to gain early feedback on projects. Implementing this would also give our pre-PhD students an opportunity to present their research, helping them in their PhD applications and preparations.
3. **Outside of work interactions** – As I mentioned, our department does socialize through lunches and department socials. But I do not think there is much interaction outside of the work environment, except at conferences. I plan to engage my colleagues in an out-of-work activity to get to know them better. Of necessity, this will need to be tailored to the interaction. For some, I may invite them to dinner. For others, attending a sporting event together would be appropriate.