

Table of contents:

[UAccess New Academic Program Workflow Form](#)

New Academic Program- Graduate Major Additional Information Form

[Major Description](#)
[Need for the Major/Justification](#)
[Major Requirements](#)
[Current Courses](#)
[New Courses Needed](#)
[Faculty Information](#)
[Four-year Plan](#)
[Student Learning Outcomes and Curriculum Map](#)
[Assessment Plan for Student Learning](#)
[Program Assessment Plan](#)
[Anticipated Student Enrollment](#)
[Anticipated Degrees Awarded](#)
[Program Development Timeline](#)
[Diversity and Inclusion](#)
[ABOR New Academic Program Request](#)
[Appendix A. Minor Requirements](#)
[Appendix B. Emphasis Print Information](#)
[Appendix C. Curriculum Map](#)
[Budget Projection Form](#)
[Undergraduate Major Peer Comparison Chart](#)
[Faculty CVs](#)



New Academic Program Workflow Form

General

Proposed Name: Applied Computing

Transaction Nbr: 000000000000026

Plan Type: Major

Academic Career: Undergraduate

Degree Offered: Bachelor of Applied Science

Do you want to offer a minor? Y

Anticipated 1st Admission Term: Fall 2019

Details

Department(s):

UAZS

DEPTMNT ID	DEPARTMENT NAME	HOST
2910	College of Applied Science and Technology	Y

Campus(es):

DIST

LOCATION	DESCRIPTION
CHANDLER	Chandler
YUMA	Yuma

ONLYN

LOCATION	DESCRIPTION
ONLYN	UA Online

SOUTH

LOCATION	DESCRIPTION
PIMACCEAST	Pima Community College East
SIERRAVSTA	Sierra Vista

Admission application terms for this plan: Spring: Y Summer: Y Fall: Y

Plan admission types:

Freshman: N Transfer: Y Readmit: Y Graduate: N

Non Degree Certificate (UCRT only): N

Other (For Community Campus specifics): N

Plan Taxonomy: 11.0104, Informatics.

Program Length Type: Program Length Value: 0.00

Report as NSC Program:

SULA Special Program:

Print Option:

Diploma: Y Applied Computing

Transcript: Y Applied Computing

Conditions for Admission/Declaration for this Major:

The Applied Computing program requires a supplemental program application in addition to admission to The University of Arizona. The entrance requirements include:

Minimum 2.5 GPA in your college coursework

Resume

Goal statement

AAS degree in computer related field (recommended)

Requirements for Accreditation:

n/a

Program Comparisons

University Appropriateness

The Bachelor of Applied Science in Applied Computing (BAS-AC) fulfills the mission of the University in several important ways. The study of Applied Computing is a key element of the Fourth Industrial Revolution and a cutting edge discipline. The proposed BAS-AC also fulfills the land grant mission of the University by offering the program to students beyond the geographical boundaries of the University of Arizona main campus through the College of Applied Science and Technology (CAST) branch campus, Distance Campus locations, and Arizona Online, and does so through innovative learning modalities in face-to-face, hybrid, interactive television (ITV), and fully online formats. The BAS-AC prepares students for immediate employment in the growing field of Applied Computing with specializations in exciting new subfields--a central tenet of the CAST mission.

Arizona University System

NBR	PROGRAM	DEGREE	#STDNTS	LOCATION	ACCRDT
-----	---------	--------	---------	----------	--------

Peer Comparison

There are currently no comparable programs at public institutions that correspond to a Bachelor of Applied Science degree in Applied Computing. Applied Computing is considered the intersection of information technology, computer science, information science and systems. It uses computation as a universal tool to solve problems in other fields, communication, and to express ideas. Applied Computing students develop a strong base of theoretical and practical interdisciplinary experiences. Similar programs include BAS degrees in Computer Information Systems and in Technology and Innovation, but do not provide a similarly strong foundation in both theoretical and practical interdisciplinary experiences. Students who choose this major have career options across a variety of Information Technology fields, including Software Development, Secure Network Architecture Management and Planning, Instructional Design. The four subplans within Applied Computing from which students must choose allow the opportunity to master the breadth of the field and to specialize in an appropriate subfield.

Faculty & Resources

Faculty

Current Faculty:

INSTR ID	NAME	DEPT	RANK	DEGREE	FCLTY/%
00634016	Henry Werchan	UAZS	Adj. Instor.	Master Engineering	25.00
00780017	Edward Taylor	UAZS	Adj. Instor.	Master of Science	25.00
01372460	Michael Milazzo	UAZS	Adj. Instor.	Master of Science	12.50
12006285	Michael Griffith	UAZS	Adj. Instor.	Master of Education	12.50
12104529	Sandra Moore	UAZS	Assit. Prof	Master of Science	87.50
14206933	Li Xu	UAZS	Professor	Doctor of Philosophy	50.00
22056021	Ryan Straight	UAZS	Assit. Prof	Doctor of Philosophy	100.00
22063594	Ynosensio Banuelos	UAZS	Adj. Instor.	Master of Science	25.00
22069177	Fred D'Angelo	UAZS	Adj. Instor.	Master of Accounting	12.50
22073303	Gina	UAZS	Adj. Instor.	Master of	12.50

INSTR ID	NAME	DEPT	RANK	DEGREE	FCLTY/%
	Scaldaferri			Science	
22073305	Juan Cannon	UAZS	Adj. Instor.	Master of Science	37.50
22073306	Robert Danielson	UAZS	Adj. Instor.	Master of Arts	12.50
22075489	Odile Wolf	UAZS	Assit. Prof	Master of Science	50.00
22076052	Terry Keene	UAZS	Adj. Instor.	Master of Science	12.50
23052887	Matthew Holliday	UAZS	Adj. Instor.	Doctor of Philosophy	12.50
23251330	Ture Peken	UAZS	Adj. Instor.	Doctor of Philosophy	12.50

Additional Faculty:

The existing program currently has a grant to provide an additional full time faculty member in Computer Science, for which it is currently engaged in a search. Over the next three years, growth in the program will also be accommodated as necessary by hiring additional adjunct instructors.

Current Student & Faculty FTE

DEPARTMENT	UGRD HEAD COUNT	GRAD HEAD COUNT	FACULTY FTE
UAZS	97	0	5.00

Projected Student & Faculty FTE

	UGRD HEAD COUNT			GRAD HEAD COUNT			FACULTY FTE		
DEPT	YR 1	YR 2	YR 3	YR 1	YR 2	YR 3	YR 1	YR 2	YR 3
UAZS	103	109	116	0	0	0	5.00	5.00	6.00

Library

Acquisitions Needed:

n/a

Physical Facilities & Equipment

Existing Physical Facilities:

Existing facilities are adequate.

Additional Facilities Required & Anticipated:

n/a

Other Support

Other Support Currently Available:

The existing program is currently supported by the CAST Student Services office, which provides advising to students, as well as by general university support staff in scheduling, instructional design, enrollment services, etc.

Other Support Needed over the Next Three Years:

The need for additional support is not anticipated.

Comments During Approval Process

12/19/2019 3:23 PM

JKOSHEL

Comments
Approved.

1/6/2020 1:21 PM

JKOSHEL

Comments
Have requested Prof. Ghosh to hold off on approving this since CAAC has some questions - I approved without considering such. I (John Koshel) will inform Prof. Ghosh when the hold has been removed.

1/24/2020 9:48 AM

MARTINMARQUEZ

Comments
Updated name from Informatics to Applied Computing per Paul Wagner. Updated impacted fields. Will upload updated proposal, when changes have been made. Attaching email request from Paul Wagner to letter of support section.



**NEW ACADEMIC PROGRAM-UNDERGRADUATE MAJOR
ADDITIONAL INFORMATION FORM**

- I. MAJOR DESCRIPTION** -provide a marketing/promotional description for the proposed program. Include the purpose, nature, and highlights of the curriculum, faculty expertise, emphases (sub-plans; if any), etc. The description will be displayed on the advisement report(s), [Degree Search](#), and should match departmental and college websites, handouts, promotional materials, etc.

The Bachelor of Applied Science in Applied Computing introduces students to the core idea of applied computing with an interdisciplinary approach. Students in the Applied Computing program will be prepared for careers in software development, network operations, information management, and digital design. Applied Computing is considered the intersection of information technology, computer science, information science and systems. It uses computation as a universal tool to solve problems in other fields, communication, and to express ideas. Applied Computing students develop a strong base of theoretical and practical interdisciplinary experiences. Applied Computing students choose from four subplans: Software Development, Information Management, Digital Design, or Network Operations.

- II. NEED FOR THE MAJOR/JUSTIFICATION**-describe how the major fulfills the needs of the city, state, region, and nation. Provide market analysis data or other tangible evidence of the need for and interest in the proposed major (and emphases, if applicable). This might include results from surveys of current students, alumni, and/or employers or reference to student enrollments in similar programs in the state or region. Include an assessment of the employment opportunities for graduates of the program for the next three years. Curricular Affairs can provide a job posting/demand report by skills obtained/outcomes/CIP code of the proposed major. Please contact [Martin Marquez](#) to request the report for your proposal.

Since approximately 2002, CAST has offered a Bachelor of Applied Science degree in Applied Sciences, with a number of subplans in a variety of different content areas added over the intervening years. The BAS is overall the largest and fastest-growing area of enrollment at CAST. It is designed as an opportunity for students to complete a bachelor's degree with all of the knowledge and skills necessary to be immediately employable in a professional field. The BAS is structured with a set of core

courses designed to meet certain requirements identified by employers as essential knowledge and skills for success in the workplace. These core requirements are technical writing, critical thinking, research and analysis, applied mathematics, professional ethics, and a capstone experience synthesizing and applying knowledge learned in the content area. Although these core requirements have not changed since the BAS was first implemented, the addition of new subplans in diverse content areas has resulted in different courses being proposed to meet these requirements. For instance, in the BAS subplan of Informatics, the critical thinking requirement is met by INFV 320—Computational Thinking and Doing. This requirement is met by a variety of other courses in other subplans, including, AEDV 310—Transitional Resiliency, HSTV 301—Introduction to the Study of History, and PSYV 489: History and Systems of Psychology. Another example is the applied mathematics requirement, which can be met in different subplans by BASV 314—Mathematics for Applied Sciences, BASV 376—Mathematics for Applied Technology, or MATV 302A—Understanding Elementary Mathematics. While the intent behind requiring specific courses to meet the BAS core requirements was to provide a better alignment of the core requirements to the content of the subplans, the end result has been to cause the BAS degree to be out of compliance with ABOR policy requiring a certain percentage of identical courses within a single major. Accordingly, what are currently subplans within the single BAS degree program are being reorganized into BAS degree programs aligned into appropriate content majors. The CIP Code for this Applied Computing degree program, 11.0104, is defined as “A program that focuses on computer systems from a user-centered perspective and studies the structure, behavior and interactions of natural and artificial systems that store, process and communicate information. Includes instruction in information sciences, human computer interaction, information system analysis and design, telecommunications structure and information architecture and management.” The career prospects for Applied Computing are quite promising. Applied Computing jobs are on the rise as regulatory and business requirements make gathering, managing, and drawing conclusions from specific types of data a strategic imperative.

- III. **MAJOR REQUIREMENTS**— complete the table below to list the major requirements, including minimum number of credit hours, required core, electives, and any special requirements, including sub-plans, theses, internships, etc. Note: information in this section must be consistent throughout the proposal documents (comparison charts, department checklists, curricular/assessment map, etc.). Delete the **EXAMPLE** column before submitting/uploading. Complete table found in Appendix A if requesting a corresponding minor.

Total units required to complete degree	120 units
Upper-division units required to complete degree	45 units for students with AAS degree from an Arizona Community College or CCAF -or- 60 units
Foundation courses	
Second language	2 nd Semester Proficiency
Math	INFV/ETCV 302: Statistics in the Information Age
General education requirements	TIER II GENERAL EDUCATION (21 Units) Natural Sciences (3 Units) Arts and Humanities (6 Units) Individuals and Societies (12 Units) Diversity Requirement
Pre-major? (Yes/No. If yes, provide requirements). Provide email(s)/letter(s) of support from home department head(s) for courses not owned by your department.	No
List any special requirements to declare or gain admission to this major (completion of	The Applied Computing program requires a supplemental program application in addition to admission to The University of Arizona. The entrance requirements include: · Minimum 2.5 GPA in your college coursework · Resume

specific coursework, minimum GPA, interview, application, etc.)	<ul style="list-style-type: none"> · Goal statement · AAS degree in computer related field (recommended)
Major requirements	
Minimum # of units required in major (units counting towards major units and major GPA)	42
Minimum # of upper-division units required in the major (upper division units counting towards major GPA)	39
<u>Minimum # of residency units to be completed in the major</u>	30
Required supporting coursework (courses that do not count towards major units and major GPA, but are required for the major). Courses listed must include subject code, units, and title. Include any limits/restrictions needed (house number limit, etc.). Provide email(s)/letter(s) of support from home department head(s) for courses not owned by your department.	N/A

<p>Major requirements (list all required major coursework including major core, major electives, sub-plan core, and sub-plan electives; courses count towards major units and major GPA) Courses listed must include course prefix, number, units, and title. Mark new coursework (New). Include any limits/restrictions needed (house number limit, etc.). Provide email(s)/letter(s) of support from home department head(s) for courses not owned by your department.</p>	<p><u>BAS Applied Computing CORE (27 Units):</u> CYBV 301--Fundamentals of Cyber Security (3 units) ETCV/INFV 302--Statistics in Information Age (3 units) ENGV 306--Advanced Composition (3 units) INFV 310--Introduction to Informatics (3 units) INFV 320--Computational Thinking and Doing (3 units) CYBV/BASV 326--Introductory Methods of Network Analysis (3 units) CYBV/BASV 329--Cyber Ethics (3 units) ETCV/INFV 401--Intro to Human-Computer Interaction (3 units) INFV 498 or NETV 498--Senior Capstone (3 units)</p> <p><u>Software Development</u> CSCV 335--Object-Oriented Programming and Design (4 units¹) CSCV 352--System Programming and Unix (3 units) INFV 361--Data Analysis and Visualization (3 units) CSCV 337--Web Programming (3 units)</p> <p><i>Choose 1 (3 units)</i> CSCV 381--Mobile Device Programming (3 units) CYBV 473--Violent Python (3 units) CSCV 460--Database Design (3 units)</p> <p><u>Information Management</u> INFV 360--Database Management Fundamentals (3 units) CSCV 337--Web Programming (3 units) INFV 361--Data Analysis and Visualization (3 units) CSCV 460--Database Systems (3 units)</p> <p><i>Choose 1 (3 units)</i></p>
---	--

	<p>ETCV/INFV 403--Principles of Web Design (3 units)</p> <p>NETV 370--Intro to Network Design and Architecture (3 units)</p> <p>NETV/INFV 379--Cloud Computing (3 units)</p> <p><u>Digital Design</u></p> <p>ETCV/INFV 403--Principles of Web Design (3 units)</p> <p>ETCV/INFV 405--Introduction to Serious Game Design (3 units)</p> <p>INFV 361--Data Analysis and Visualization (3 units)</p> <p>ETCV/INFV 406--Introduction to Game Development (3 units)</p> <p><i>Choose 1 (3 units)</i></p> <p>ECTV 301--Interpreting and Presenting Digitally (3 units)</p> <p>NETV/INFV 370--Intro to Network Design and Architecture (3 units)</p> <p>NETV/INFV 379--Cloud Computing (3 units)</p> <p><u>Network Operations</u></p> <p>NETV/INFV 370--Intro to Network Design and Architecture (3 units)</p> <p>NETV 371--Network Security Principles (3 units)</p> <p>NETV 375--Advanced Routing and WAN Technologies (3 units)</p> <p>NETV/INFV 379--Cloud Computing (3 units)</p> <p><i>Choose 1 (3 units)</i></p> <p>NETV/INFV 378--System Administration (3 units)</p> <p>NETV 374--Routing: Theories and Applications (3 units)</p> <p>NETV/CYBV 382--Network Defense, Incident Response & Disaster Recovery (3 units)</p> <p>CYBV/NETV 385--Introduction to Cyber Operations (3 units)</p> <p>NETV/CYBV 477--Advanced Computer Forensics (3 units)</p> <p>CYBV/NETV 479--Wireless Networking and Security (3 units)</p> <p>NETV 493--Internship (1-3 units)</p> <p>CYBV/NETV 496--Special Topics in Cyber Security (3 units)</p>
--	--

Internship, practicum, applied course requirements (Yes/No. If yes, provide description)	Yes. Students must complete INFV/NETV 498, Senior Capstone, with a minimum 45-hours student engagement experience.
Senior thesis or senior project required (Yes/No. If yes, provide description)	Yes. Students engage in a senior project and write a senior project thesis paper as part of the INFV/NETV 498—Senior Capstone.
Additional requirements (provide description)	Students must earn a minimum 2.0 major GPA.
Minor (specify if optional or required)	Optional
Any double-dipping restrictions? (Yes/No. If yes, provide description)	Yes. Major core courses are not permitted to double-dip. Supporting coursework may double dip with other majors.

*Emphases are officially recognized sub-specializations within the discipline. [ABOR Policy 2-221 c. Academic Degree Programs Subspecializations](#) requires all undergraduate emphases within a major to share at least 40% curricular commonality across emphases (known as “major core”). Total units required for each emphasis must be equal. Proposed emphases having similar curriculum with other plans (within department, college, or university) may require completion of an additional comparison chart. Complete the table found in Appendix B to indicate if emphases should be printed on student transcripts and diplomas.

IV. CURRENT COURSES—using the table below, list existing courses included in the proposed major. If the courses listed belong to a department that is not a signed party to this implementation request, upload the department head’s permission to include the courses in the proposed program and information regarding accessibility to and frequency of offerings for the course(s). Upload letters of support/emails from department heads to the “Letter(s) of Support” field on the UAccess workflow. Add rows to the table, as needed.

Course prefix and number (include cross-listings)	Units	Title	Course Description	Pre-requisites	Modes of delivery (online, in-person, hybrid)	Typically Offered (F, W, Sp, Su)	Dept signed party to proposal? (Yes/No)
ENGV 306	3	Advanced Composition	Study of genre and rhetorical situation; advanced practice in expository writing.	None	online/hybrid /in-person	F/SP/SU	Yes
INFV/ETCV 302	3	Statistics in the Information Age	This course provides an introduction to descriptive and inferential statistics. It also presents an introduction to data complexity, uncertainty and variation in information age and discusses techniques for interpreting the data.	None	online	F	Yes
CYBV 301	3	Fundamentals of Cybersecurity	CYBV 301 will provide students with an introduction to Fundamentals of Cybersecurity, which will include an introduction to cyber security policy, doctrine, and operational constraints. A	None	online/hybrid /in-person	F/SP/SU	Yes

			broad survey of cybersecurity concepts, tools, technologies and best practices will be presented. Students will use hands-on activities to become familiar with and practice cybersecurity techniques and procedures.				
CYBV/BASV 326	3	Introductory Methods of Network Analysis	Provides a methodology for analyzing networks by examining the network at its infrastructure, network and applications layers; exploring how they transfer data; investigating how network protocols work to enable communication; and probing and analyzing how the lower-level network layers support the upper ones. Students will use hands-on labs and exercises to investigate and analyze network fundamentals.	None	online/hybrid /in-person	F/SP/SU	Yes
CYBV/BASV 329	3	Cyber Ethics	A sustained study of ethical issues that arise in relation to employment in the public and private sectors, including allocation of resources, corporate and social responsibility, relationships,	None	online/hybrid /in-person	F/SP/SU	Yes

			and discrimination. This course is a designated writing emphasis course. A main focus of this course will be on the ethical and legal standards governing information technology. New technology creates ethical challenges for individuals around the globe, and applies to most persons regardless of whether they are employed in the information technology field or a more traditional occupation.				
INFV 310	3	Introduction to Informatics	This course provides an overview of problem solving with information technology. Topics cover information representation, relational databases, system design, propositional logic, and cutting edge technologies for CPU, operating systems, and networks.	None	online	SP	Yes
INFV 320	3	Computational Thinking and Doing	This course provides an overview of basics of programming and techniques used by computing professionals in a variety of application areas. Topics	None	online/hybrid	F/SP/SU	Yes

			include computation, programs, algorithms, programming languages, and complexity, as well as how these concepts and techniques are used to solve problems in Informatics.				
ETCV/INFV 401	3	Introduction to Human-Computer Interactions	This course is a beginning level exploration of human-computer design, interaction and interfaces. The students will be introduced to the theory of human-computer interaction (HCI) as well as to the principles of effective visual design using user experiences.	None	online/hybrid	F/SP	Yes
INFV 498	3	Senior Capstone	A culminating experience for majors involving a substantive project that demonstrates a synthesis of learning accumulated in the major, including broadly comprehensive knowledge of the discipline and its methodologies.	None	online	SP	Yes
NETV 498	3	Senior Capstone	This course focuses on developing project management skills for graduating seniors in the	None	online	SP	Yes

			<p>Network Administration BAS degree program and other students interested in project management. It supports a better understanding of project management concepts and methodology. Students will apply these concepts by developing a viable project plan for a non-profit organization or small business in the local community. This course is an engaged learning course, it focuses on developing project management skills for graduating seniors in the Network Administration BAS degree program and other students interested in project management. It supports a better understanding of project management concepts and methodology. Students will apply these concepts by developing a viable project plan for a non-profit organization or small business in the local community.</p>				
--	--	--	--	--	--	--	--

CSCV 335	4	Object-Oriented Programming and Design	Fundamentals of object-oriented software development. Includes design principles, inheritance, polymorphism, Unified Modeling Language (UML), testing, event-driven programming with graphical user interfaces, applications of design patterns, and use of existing frameworks. Weekly laboratory.	C SC 127B or CSC 210	online	SP	Yes
CSCV 337	3	Web Programming	Introduction to the techniques and technologies for developing dynamic web sites. Topics include a web server, PHP as the server-side scripting language, the MySQL database, JavaScript and AJAX for enriching web services, and page layout with HTML and CSS. Security concerns will be considered with details for prevention of such vulnerabilities in web applications. This course includes a team project to deploy a dynamic website. Weekly laboratory.	C SC 127A, ISTA 130, ECE 175 or equivalent experience in a high level programming .	online	SP	Yes

CSCV 352	3	System Programming and Unix	Programming in C, including single and multi-dimensional arrays, lists, stacks, queues, trees, and bit manipulation. Unix topics, including debuggers, makefiles, shell programming, and other topics that support systems programming.	Prerequisite or concurrent registration, CSC 252.	online/hybrid /in-person	F	Yes
INFV 360	3	Database Management Fundamentals	This course provides an introduction to database management concepts including definitions of data elements, basic data structures, data modeling, and systems architectures. Topics also cover some of the leading database management products and design tools currently in use.	None	online	F	Yes
INFV 361	3	Data Analysis and Visualization	This course will lay a foundation for students to understand how to process, analyze, and visualize data. Topics include data collection and integration, exploratory data analysis, statistical inference and modeling, machine learning, and data	BASV 302 and INFV 320	online	F	Yes

			visualization. The emphasis of the course topics will be placed on integration and synthesis of concepts and their application to solving problems. Students will explore these topics using software tools.				
CSCV 381	3	Mobile Device Programming	The course involves a careful examination of mobile device programming. Emphases are on developing applications as a community that run on a mobile platform. Students will be able to develop, emulate, and test applications for mobile devices.	C SC 127B	online	SU	Yes
CYBV 473	3	Violent Python	CYBV 473 will provide students with advanced practical applications of Python programming to support offensive and defensive cybersecurity operations. A crosscut of Python concepts, tools, and techniques will be presented. Students will use interactive programming activities to master and create advanced	INFV 320 or Consent of Instructor	online/hybrid /in-person	F/SP	Yes

			Python tools to support common cybersecurity tasks.				
CSCV 460	3	Database Design	Functions of a database system. Data modeling and logical database design. Query languages and query optimization. Efficient data storage and access. Concurrency control and recovery.	C SC 335 and C SC 345	online	SP	Yes
ETCV/INFV 403	3	Principles of Web Design	This course addresses concepts of web design using multimedia, visual, communication and interaction principles. Students will also be introduced to web authoring, design solutions and emerging technologies.	None	online	F/SP	Yes
ETCV/INFV 405	3	Introduction to Serious Game Design	This course is the study and examination of serious digital games with an emphasis on theoretical and conceptual framework for game design. Students will also be exposed to the process of game design using various methods and techniques such as iteration,	None	online	SP	Yes

			rapid prototyping, mechanics, dynamics and user interface.				
ETCV/INFV 406	3	Introduction to Game Development	This course is an introduction to game development. The main focus is the implementation of good design principles. Students will progress through all stages of game development including project management and iterating, initial wire-framing, level design, audio-visual interplay, interface iteration, and quality assurance testing. Knowledge of game and asset design is highly encouraged.	None	online	SP	Yes
ETCV 301	3	Interpreting and Presenting Digitally	Anyone with a digital device can instantly share world views on issues relevant to individuals and societies via video with a global audience within any context, humor, hate, compassion, utilitarian, and love. Applying social action, e-learning, media design, and communication theories and principles students will critically analyze the intended and unintended messages prevalent in public	None	online	F/SP	Yes

			video clips, webcasts, and broadcasts. As an added means to interpret meaning and increase media literacy, students will explore digital presentation concepts by examining and participating in the essential elements of effective digital presentation development including audience, agenda, scriptwriting, storyboarding, viewpoint, presentation, interview, audio and video recording, compositing, special effects, motion, editing, publishing, and criticism.				
NETV/INFV 370	3	Introduction to Network Design and Architecture	An introduction to modern network design and architecture. Students will learn modern network design and network architecture concepts, security in modern networks, the cost of modern networks, software defined networks (SDN), network virtualization framework (NVF), quality of service (QoS) and quality of experience concepts (QoE), Internet of	BASV 326 or CYBV 326	online/hybrid /in-person	F	Yes

			Things (IoT) and Cloud infrastructures.				
NETV 371	3	Network Security Principles	In-depth coverage of current risks and threats to an organization's information including methods of addressing the safeguarding of these critical assets. Coverage includes theoretical and historical background necessary to understand the various risks and hands on techniques for working in the security field.	None	online	SP	Yes
NETV 375	3	Advanced Routing & WAN Technologies	Course focuses on both theoretical and application concepts advanced IP addressing techniques including Network address translation, port address translation, and DHCP. Wan terminology and technology to include: PPP, ISDN, Frame Relay and overall network management.	NETV 374	online/hybrid /in-person	SP	Yes
NETV 379	3	Cloud Computing	Course covers the theory and application of cloud computing, including Cloud	RNCV 372	online	F/SU/SP	Yes

			Computing network design and connectivity, server management, best-practices, security, and provider service level agreements. Case studies of industry examples are used as applications to reinforce the discussed theories.				
NETV 374	3	Routing: Theories & Applications	Course focuses on both theoretical and application concepts of IP addressing techniques, intermediate routing protocols, command line interface configuration of switches, and VLANs.	None	online	F	Yes
NETV/INFV 378	3	System Administration	Course covers the theory and application of system administration from a UNIX and Windows perspective, including installation, management, optimization and security. Case studies of industry examples are used as applications to reinforce the discussed theories.	CYBV 326 or BASV 326	online	SP/SU	Yes

NETV/CYBV 382	3	Network Defense, Incident Response & Disaster Recovery	Provides network defenders with the skills to respond quickly to incidents and recover critical data in the event of a disaster. Students will learn the Active Cyber Defense Cycle (ACDC) and apply the concepts of cyber intelligence and network security monitoring towards the response and defense of networks.	NETV 371 or Consent of Instructor	online	F	Yes
CYBV/NETV 479	3	Wireless Networking & Security	Provides an introduction to wireless networking, mobile device hardware and software architectures as well as the application of security fundamentals for mobile computing systems. Students will be able to describe user associations and routing in a cellular/mobile network, interaction of elements within the cellular/mobile core, and end-to-end delivery of a packet and/or signal and what happens with the hand-off at each step along the communications path. They will be able to explain	(CYBV 326 or BASV 326) and NETV 385	online	SP	Yes

			differences in core architecture between different generations of cellular and mobile network technologies.				
NETV 493	1-3	Internship	Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment.	None	online/hybrid /in-person	F/SP	Yes
NETV/CYBV 496	3	Special Topics in Cyber Security	This course provides a flexible topics seminar for undergraduates in the evolving field of Cyber Security. Students will explore topics across several domains within the broader field of Cyber Security, including public and/or private information security systems and vulnerabilities, cyber threat intelligence, cyber operations, cyber espionage, and geopolitical issues in cyber security. Students will develop and exchange scholarly information in a small group setting and engage in activities	NETV 371 or consent of instructor	online	SP	Yes

			appropriate to the special topic content.				
CYBV/NETV 385	3	Introduction to Cyber Operations	An introduction to the concepts of cyber operations, applying fundamentals of network operations to understanding network attack and defense concepts. Students will recognize common cyber-attacks and the techniques for identifying, detecting and defending against cyber security threats. Students will learn the basics of physical, network and web security as well as standards and laws in cyber security. Legal, ethical, and privacy issues will be discussed. Students will use hands-on labs and exercises to illustrate the workings of information security technologies.	None	online	F/SP	Yes
NETV/CYBV 477	3	Advanced Computer Forensics	An advanced forensics course that provides students an in-depth knowledge of network forensics, network flow analysis, network intrusion detection systems, event	INFV 320 and CYBV 388 or Consent of Instructor	online	SP	Yes

			reconstruction and memory forensics for Windows, Linux and MAC operating systems.				
--	--	--	---	--	--	--	--

- V. **NEW COURSES NEEDED** – using the table below, list any new courses that must be created to initiate the major. If specific course number is undetermined, please provide level, (ie CHEM 4**). Add rows as needed. Is a new prefix needed? If so, provide the subject description so Curricular Affairs can generate proposed prefix options.

Course prefix and number (include cross-listings)	Units	Title	Course Description	Pre-requisites	Modes of delivery (online, in-person, hybrid)	Status*	Anticipated first term offered	Typically Offered (F, W, Sp, Su)	Dept signed party to proposal? (Yes/No)
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

*In development (D); submitted for approval (S); approved (A)

Subject description for new prefix (if requested). Include your requested prefix, if any.

- VI. **FACULTY INFORMATION**- complete the table below. If UA Vitae link is not provided/available, attach a short CV (2-3 pages) to the end of the proposal or upload to the workflow form (in the “Letter(s) of Support” field). UA Vitae profiles can be found in the [UA directory/phonebook](#). Add rows as needed. Delete the **EXAMPLE** rows before submitting/uploading. **NOTE: full proposals are distributed campus-wide, posted on committee agendas and should be considered “publicly visible”.** Contact [Pam Coonan](#) and [Martin Marquez](#) if you have concerns about CV information being “publicly visible”.

Faculty Member	Involvement	UA Vitae link or “CV attached”
Ryan Straight	Teach INFV 302, INFV 401, INFV 405, INFV 406, INFV 411	https://profiles.arizona.edu/person/ryanstraight
Odile Wolf	Teach INFV 320, CSCV 335, CSCV 345, CSCV 352, CSCV 445, INFV 360	https://profiles.arizona.edu/person/owolf
Diana Saldana Jimenez	Teach INFV 320, CSCV 372, CSCV 471	https://profiles.arizona.edu/person/dianasaldana
Li Xu	Program Director, Teach INFV 310, CSCV 372, CSCV 452, CSCV 453, CSCV 460	https://profiles.arizona.edu/person/lxu
Michael Griffin	Teach INFV 403,	CV Attached

Juan Cannon	Teach NETV 371, NETV 374	CV Attached
Ynosensio Banueolos	Teach NETV 375	CV Attached
Henry Werchan	Teach INFV 379	CV Attached
Terry Keene	Teach NETV 375	CV Attached
Gurmindersingh (Gini) J. Khalsa	Teach NETV 375	CV Attached
Fred D'Angelo	Teach INFV 320	CV Attached
Michael Milazzo	Teach CSCV 337	CV Attached
Angela Gunder	Teach INFV 403	CV Attached
Edward Taylor	Teach INFV 370	CV Attached
Paul Wagner	Teach CYBV 326	https://profiles.arizona.edu/person/paulewagner
Tom Jewkes	Teach CYBV 385	https://profiles.arizona.edu/person/tjewkes

- VII. FOUR-YEAR PLAN** – provide a sample four-year degree plan that includes all requirements to graduate with this major and takes into consideration course offerings and sequencing. Refer to [Degree Search](#) for examples. Use generic title/placeholder for requirements with more than one course option (e.g. Upper Division Major Elective, Minor Course, Second Language, GE Tier 1, GE Tier 2). Add rows as needed.

Digital Design Track

Semesters 1		Semester 2		Semester 3		Semester 4	
Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units
ENGL 101	3	ENGL 102	3	Tier II Individuals & Societies	3	Additional Transfer Coursework from Associate's Degree	15
Associates Required Math	3	2nd Semester Second Language	4	Additional Transfer Coursework from Associate's Degree	12		
Additional Transfer Coursework from Associate's Degree	9	Additional Transfer Coursework from Associate's Degree	8				
Total	15	Total	15	Total	15	Total	15
Semester 5		Semester 6		Semester 7		Semester 8	
Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units
ENGV 306: Advanced Composition	3	INFV 403: Principles of Web Design	3	INFV 405: Introduction to Serious Game Design	3	INFV 498: Senior Capstone	3
CYBV 326: Network Analysis	3	INFV 310: Introduction to Informatics	3	INFV 361: Data Analysis & Visualization	3	CYBV 329: Cyber Ethics	3

INFV 320: Computational Thinking & Doing	3	INFV 401: Human- Computer Interaction	3	CYBV 301: Fundamentals of Cybersecurity	3	INFV 406: Intro to Game Development	3
BASV/INFV 302: Statistics in the Information Age	3	Tier II Natural Sciences	3	Tier II Arts/Humanities	3	Digital Design Elective	3
Tier II Arts/Humanities	3	Tier II Individuals & Societies	3	Tier II Individuals & Societies	3	Tier II Individuals & Societies	3
Total	15		15		15	Total	15

Information Management Track

Semesters 1		Semester 2		Semester 3		Semester 4	
Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units
ENGL 101	3	ENGL 102	3	Tier II Individuals & Societies	3	Additional Transfer Coursework from Associate's Degree	15
Associates Required Math	3	2nd Semester Second Language	4	Additional Transfer Coursework from Associate's Degree	12		
Additional Transfer Coursework from Associate's Degree	9	Transfer Programming Course: CSC 110, 127A, ISTA 130, or ECE 175	3-4				

		Additional Transfer Coursework from Associate's Degree	4-5				
Total	15	Total	15	Total	15	Total	15
Semester 5		Semester 6		Semester 7		Semester 8	
Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units
ENGV 306: Advanced Composition	3	INFV 310: Introduction to Informatics	3	INFV 401: Human-Computer Interaction	3	INFV 498: Senior Capstone	3
CYBV 326: Network Analysis	3	CSCV 337: Web Programming	3	INFV 361: Data Analysis & Visualization	3	CSCV 460: Database Design	3
INFV 320: Computational Thinking & Doing	3	CYBV 301: Fundamentals of Cybersecurity	3	INFV 360: Database Management Fundamentals	3	CYBV 329: Cyber Ethics	3
BASV/INFV 302: Statistics in the Information Age	3	Tier II Natural Sciences	3	Information Management Elective	3	Tier II Arts/Humanities	3
Tier II Arts/Humanities	3	Tier II Individuals & Societies	3	Tier II Individuals & Societies	3	Tier II Individuals & Societies	3
Total	15		15		15		15

Network Operations Track

Semesters 1		Semester 2		Semester 3		Semester 4	
Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units
ENGL 101	3	ENGL 102	3	Tier II Individuals & Societies	3	Additional Transfer Coursework from Associate's Degree	15
Associates Required Math	3	2nd Semester Second Language	4	Additional Transfer Coursework from Associate's Degree	12		
Additional Transfer Coursework from Associate's Degree	9	Additional Transfer Coursework from Associate's Degree	8				
Total	15	Total	15	Total	15	Total	15
Semester 5		Semester 6		Semester 7		Semester 8	
Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units
ENGV 306: Advanced Composition	3	NETV 371: Network Security Principles	3	NETV 379: Cloud Computing	3	NETV 498: Senior Capstone	3
CYBV 326: Network Analysis	3	NETV 375: Advanced Routing & WAN Technologies	3	BASV/INFV 302: Statistics in the Information Age	3	CYBV 329: Cyber Ethics	3

CYBV 301: Fundamentals of Cybersecurity	3	INFV 310: Introduction to Informatics	3	INFV 401: Human- Computer Interaction	3	Network Operations Elective	3
NETV 370: Intro to Network Design & Architecture	3	INFV 320: Computational Thinking & Doing	3	Tier II Arts/Humanities	3	Tier II Individuals & Societies	3
Tier II Arts/Humanities	3	Tier II Individuals & Societies	3	Tier II Individuals & Societies	3	Tier II Natural Sciences	3
	15		15		15	Total	15

Software Development Track

Semesters 1-4		Semester 5		Semester 6		Semester 7	
Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units
ENGL 101	3	ENGL 102	3	Tier II Individuals & Societies	3	Additional Transfer Coursework from Associate's Degree	15
Associates Required Math	3	2nd Semester Second Language	4	Additional Transfer Coursework from Associate's Degree	12		
Transfer Programming I Course: CSC 110, 127A, ISTA 130, or ECE 175	3-4	Transfer Programming II Course: CSC 120 or 127B	3-4				

Additional Transfer Coursework from Associate's Degree	5-6	Additional Transfer Coursework from Associate's Degree	4-5				
Total	15	Total	15	Total	15	Total	15
Semester 5		Semester 6		Semester 7		Semester 8	
Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units	Course prefix and number	Units
ENGV 306: Advanced Composition	3	CSCV 337: Web Programming	3	INFV 401: Human-Computer Interaction	3	INFV 498: Senior Capstone	3
CYBV 326: Network Analysis	3	INFV 310: Introduction to Informatics	3	INFV 361: Data Analysis & Visualization	3	CYBV 329: Cyber Ethics	3
INFV 320: Computational Thinking & Doing	3	CSCV 335: Object Oriented Programming	4	CSCV 352: System Programming and Unix	3	CYBV 301: Fundamentals of Cybersecurity	3
BASV/INFV 302: Statistics in the Information Age	3	Tier II Natural Sciences	3	Tier II Arts/Humanities	3	Software Development Elective	3
Tier II Arts/Humanities	3	Tier II Individuals & Societies	3	Tier II Individuals & Societies	3	Tier II Individuals & Societies	3
Total	15		15		15	Total	15

VIII. STUDENT LEARNING OUTCOMES AND CURRICULUM MAP—describe what students should know, understand, and/or be able to do at the conclusion of this major. Work with [Office of Instruction and Assessment](#) to create a curricular map using Taskstream. Include your curricular map in this section (refer to Appendix C for sample Curriculum Map generated using Taskstream).

Upon completion of the Bachelor of Applied Science in Applied Computing program, students will be able to:

Goal 1: Identify and approach problems computationally

- a. Explain and apply fundamental aspects and concepts of applied computing
- b. Select and use relevant analytic and modeling methods
- c. Formulate problems and describe problem solutions in a chosen specialization
- d. Design and conduct practical investigation, to interpret data and draw conclusions

Goal 2: Use and design computer-based systems

- a. Have in-depth knowledge of, and ability to apply and evaluate computer-based systems
- b. Analyze the local and global impact of computing on individuals, organizations, and society
- c. Select and use of appropriate process models and/or programming environments
- d. Apply knowledge and design hardware and/or software to meet requirements

Goal 3: Prepare for continued professional development.

- a. Work effectively in teams to develop solutions to solve problems

- b. Communicate effectively, both orally and in writing
- c. Think critically and creatively, both independently and with others
- d. Be aware of project management business practices.

Curriculum Map:

Required Courses	Identify and approach problems computationally				Use and design computer-based systems				Prepare for continued professional development			
	a	b	c	d	a	b	c	d	a	b	c	d
ENGV 306										P	P	
CYBV 301	P		P									
CYBV 326	I	I	I	I								
CYBV 329										P	P	P
INFV 310										P	P	I
INFV 320					I	I	I	I	I	I	I	
INFV 302		P		P		P	P					
INFV 401					P			P	P			
INFV/NETV 498	A	A	A	A	A	A	A	A	A	A	A	A

The TaskStream exported curriculum map file (.pdf) is also attached as Appendix C.

- IX. ASSESSMENT PLAN FOR STUDENT LEARNING-** using the table below, provide a schedule for program assessment of intended student learning outcomes 1) while students are in the program and 2) after completion of the major. Add rows as needed. Delete EXAMPLE row.

Learning Outcomes	Sources(s) of Evidence	Assessment Measures	Data Collection Points
Identify and approach problems computationally			
a. Explain and apply fundamental aspects and concepts of Applied Computing.	Course-embedded assessments in INFV 498 and NETV 498.	Reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection report.	End of each course
b. Select and use relevant analytic and modeling methods	Course-embedded assessments in INFV 498 and NETV 498.	Reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection report.	End of each course
c. Formulate problems and describe problem solutions in a chosen specialization	Course-embedded assessments in INFV 498 and NETV 498.	Reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection report.	End of each course
d. Design and conduct practical investigation, to interpret data and draw conclusions	Course-embedded assessments in INFV 498 and NETV 498.	Reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection reports.	End of each course

Use and design computer-based systems			
a. Have in-depth knowledge of, and ability to apply and evaluate computer-based systems	Course-embedded assessments in INFV 498 and NETV 498.	Reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection report.	End of each course
b. Analyze the local and global impact of computing on individuals, organizations, and society	Course-embedded assessments in INFV 498 and NETV 498.	Reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection report.	End of each course
c. Select and use of appropriate process models and/or programming environments	Course-embedded assessments in INFV 498 and NETV 498.	Reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection report.	End of each course
d. Apply knowledge and design hardware and/or software to meet requirements	Course-embedded assessments in INFV 498 and NETV 498.	Reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection report.	End of each course
Prepare for continued professional development			
a. Work effectively in teams to design and implement solutions to computational problems	Course-embedded assessments in INFV 498 and NETV 498.	Reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection report.	End of each course

b. Communicate effectively, both orally and in writing	Course-embedded assessments in INFV 498 and NETV 498.	Reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection report.	End of each course
c. Think critically and creatively, both independently and with others	Course-embedded assessments in INFV 498 and NETV 498.	Reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection reports.	End of each course
d. Be aware of project management and business practices	Course-embedded assessments in INFV 498 and NETV 498.	Reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection report.	End of each course

- 1) While students are in the program: at the end of INFV 498 and NETV 498, the capstone courses taken by majors in their senior year use a rubric to be filled out by the instructor(s) for each student based on course works including reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection report.
- 2) After completion of the major: post-program survey including students' self-assessment.

- X. **PROGRAM ASSESSMENT PLAN**- using the table below, provide a schedule for program evaluation 1) while students are in the program and 2) after completion of the major. Add rows as needed. Delete **EXAMPLE** rows.

Assessment Measure	Source(s) of Evidence	Data Collection Point(s)
Evaluation on of student learning performance on project development and management in INFV/NETV 498	Course rubrics and student grades by the course instructor(s)	Every year
Survey Data Review	Program pre- and post-survey	At the beginning when a student enrolls the program (pre-survey). At graduation and as part of alumni survey (post-survey).
Academic program review	Reviewer's responses	Every five years

1. INFV/NETV 498 is the Senior Capstone project all Applied Computing majors will take before they graduate. We use the course to assess whether students in Applied Computing have acquired the central knowledge and skills that comprise the student learning outcomes. Student mastery of the knowledge and skills will be assessed through the evaluations of course embedded assessments including the project development and management according to the standard program analytic rubric.
2. Students at the beginning when they enroll the program will take a program pre-survey about their self-assessment as well as expectations on the knowledge, skills, and competencies they would like to develop in Applied Computing. They will also be asked what is a thing they would like to learn in Applied Computing. At the graduation students will take a program post-survey that asks them to rate the knowledge, skills, and competencies contained in the program learning outcomes. Students will be asked whether the learning outcomes for the program are clear; whether course content, learning and assessment activities in their classes contribute to meeting the student learning outcomes for the program; what are the three most important things they mastered in Applied Computing; and what is a thing they would like to learn in the program. The pre- and post-survey data will be compiled and analyzed to continually improve the program curriculum.

3. We plan to get the program reviewed periodically. The reviewers' feedback notes and evaluations will be analyzed to continually improve the program curriculum.

XI. ANTICIPATED STUDENT ENROLLMENT-complete the table below. What concrete evidence/data was used to arrive at the numbers?

5-YEAR PROJECTED ANNUAL ENROLLMENT					
	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year
Number of Students	103	109	116	125	135

Data/evidence used to determine projected enrollment numbers:

There are currently 97 declared majors in the existing subplans. According to the Bureau of Labor Statistics, the rate of growth for jobs in the field of applied computing is projected to grow at approximately 6% annually from 2012–2022—somewhat faster than the average for all other occupations. Since we started to develop the BAS Informatics subplan in 2012, we have closely collaborated with our community college partners to support transferring students to study at UA. In 2016, the INSTICT2 grant project, which is a **\$5,955,854** five-year collaborative-project between the Arizona Western College (AWC) and the College of Applied Science and Technology, was awarded by the US Department of Education to establish multiple pathways in Informatics for AWC students to transfer to Informatics at UA. We projected the above numbers based on the rate of growth in the existing BAS Informatics subplan as well as the rate of growth data based on the Bureau of Labor Statistics.

XII. ANTICIPATED DEGREES AWARDED- complete the table below, beginning with the first year in which degrees will be awarded. How did you arrive at these numbers? Use [National Center for Education Statistics College Navigator](#) to find program completion information of peer institutions offering a same or similar major.

PROJECTED DEGREES AWARDED ANNUALLY					
	1 st Year	2 nd Year	3 rd Year	4 th Year	5 th Year
Number of Degrees	40	81	86	92	100

Data/evidence used to determine number of anticipated degrees awarded annually:

The first number was projected based on the number of first-year enrolled students, assuming some of them are able to complete the degree after two years. The projections were based on the existing fulltime and part-time student population, CAST 1-year retention rate 75% as well as the existing Informatics subplan's 77% graduate rate (≤ 3 years).

XIII. PROGRAM DEVELOPMENT TIMELINE- describe plans and timelines for 1) marketing the major and 2) student recruitment activities.

1) Marketing the major: The team composed of Student Services, Marketing staff, program directors, and faculty members in Applied Computing conduct meetings with community college students by college campus visits and community visits. Faculty also outreach to local communities to market the Applied Computing program.

2) Recruitment for the BAS in Applied Computing: The team composed of the Department of Applied Technology Faculty and Staff, Academic Advising, Marketing staff, program directors, and faculty members in Applied Computing conduct meetings with community college students by college campus visits and community visits. Faculty members mentor and advise on-campus as well as potential students, and faculty also maintain relationships with community college partners.

XIV. DIVERSITY AND INCLUSION-describe how you will recruit diverse students and faculty to this program.

The BAS in Applied Computing program is committed to achieving excellence through cultural diversity and actively seeks culturally diverse faculty and students. The current BAS subplans In Informatics and Network Operations demonstrates this commitment: 60% of students identify as Non-White; 15% are female, and 68% are first generation college students. The CAST BAS programs are uniquely able to serve non-traditional transfer student populations, and work in a deeply embedded way within local communities due to a variety of factors, including UA South's status as a designated branch campus; and its physical presence within numerous local communities (including in the Army Education Center at Ft. Huachuca).

- VII. **ABOR REQUIREMENT: New Academic Program Request.** This section is required by ABOR. Most of the information can be copied/pasted from completed sections above. Instructions/clarification for completing the table below, from ABOR, can be viewed/downloaded [here](#).

University: University of Arizona

Name of Proposed Academic Program: Bachelor of Applied Science in Applied Computing
Academic Department: Applied Technology
Geographic Site: College of Applied Science and Technology: Sierra Vista, PimaCC, Douglas, Nogales, Yuma
Instructional Modality: Face-to-Face, Hybrid, ITV, Fully Online
Total Credit Hours: 42
Proposed Inception Term: Fall, 2020
Brief Program Description: The Bachelor of Applied Science in Applied Computing introduces students to the core idea of applied computing in a discipline-independent form. Students in the program will be prepared for careers in software development, network management and planning, marketing, or technology management. Applied computing is considered the intersection of information technology, computer science, information science and systems. It uses computation as a universal tool to solve problems in other fields, communication, and to express ideas. Applied Computing students develop a strong base of theoretical and practical interdisciplinary experiences. Applied Computing students choose from four subplans: Software Development, Information Management, Digital Design, or Network Operations.
Learning Outcomes and Assessment Plan: Concepts (Knowledge)

Goal 1: Identify and approach problems computationally

- a. Explain and apply fundamental aspects and concepts of applied computing
- b. Select and use relevant analytic and modeling methods
- c. Formulate problems and describe problem solutions in a chosen specialization
- d. Design and conduct practical investigation, to interpret data and draw conclusions

Competencies (Skills)

Goal 2: Use and design computer-based systems

- a. Have in-depth knowledge of, and ability to apply and evaluate computer-based systems
- b. Analyze the local and global impact of computing on individuals, organizations, and society
- c. Select and use of appropriate process models and/or programming environments
- d. Apply knowledge and design hardware and/or software to meet requirements

Goal 3: Prepare for continued professional development.

- a. Work effectively in teams to design and implement solutions to computational problems
- b. Communicate effectively, both orally and in writing
- c. Think critically and creatively, both independently and with others
- d. Be aware of project management and business practices

Measures

Direct Measures will include course-embedded assessment of samples of student work. At the end of INFV 498 and NETV 498, the capstone courses taken by majors in their senior year will use a rubric to be filled out by the instructor(s) for each student based on course works including reflective discussion posts, project proposal, project progress reports, project presentation, and final reflection report.

Indirected Measures will include pre- and post- program surveys to provide indirect measure of student satisfaction and preparation in Applied Computing as well as professional preparation for employment.

Assessment Method and/or Instrument(s)

1. The program is using curriculum maps to indicate when a specific learning outcome is introduced, practiced, and assessed in the core courses.
2. Taskstream software is used to facilitate the mapping. Specific assignments throughout the program will be used for the program assessment.
3. Embedded course assessment using rubrics will also be used for course projects and reflections.
4. Rubrics will be coded with the following scores: does not meet, meets, exceeds expectations.
5. Student challenges in particular courses will point to changes that need to be made in the curriculum to improve learning.
6. Assess program outcomes related to changes that are made.

Projected Enrollment for the First Three Years:

<u>1st Year</u>	<u>2nd Year</u>	<u>3rd Year</u>
103	109	116

Evidence of Market Demand: There are currently 97 declared majors in the existing subplans. According to the Bureau of Labor Statistics, the rate of growth for jobs in the field of Informatics is projected to grow at approximately 6% annually from 2012–2022—somewhat faster than the average for all other occupations. Since data and computation are ubiquitous, job opportunities for graduates in the proposed Applied Computing program are extensive and cover any aspect of business, government, and industry that involves creating, managing, searching, and processing information as well as designing systems and solving problems computationally from a user-centered perspective.

In addition, all of our current community college partners have students enrolled in AAS computing programs relevant to Applied Computing. To build pathways to transfer students from AAS computing programs at community colleges, the BAS Applied Computing program is needed to support transferring students to successfully complete their Bachelor degree in Applied Sciences at the University of Arizona (UA). Since we started to develop the Informatics subplan in 2012, we have closely collaborated with our community college partners to

<p>support transferring students to study at the University of Arizona. In 2016, the INSTINCT2 grant project, which is a \$5,955,854 five-year collaborative project between the Arizona Western College (AWC) and the CAST, was awarded by the US Department of Education to establish multiple pathways in Informatics for AWC students to transfer to Informatics at UA. We also have been actively seeking and establishing partnerships with other community colleges to establish pathways in Applied Computing.</p>			
<p>Similar Programs Offered at Arizona Public Universities:</p> <p>Arizona State University Informatics Bachelor of Science Focus Areas: Enterprise Informatics, Game Informatics, Geo-Informatics, and Digital Culture Studies</p> <p>Northern Arizona University Informatics Bachelor of Science Emphasis Areas: Astroinformatics, Bioinformatics, and Ecoinformatics,</p>			
<p>New Resources Required? (i.e. faculty and administrative positions; infrastructure, etc.): As this is a conversion of an existing BAS in Applied Science with an emphasis in Informatics degree program to a BAS in Applied Computing degree program, no new resources are required for its implementation.</p>			
<p>Program Fee/Differentiated Tuition Required? Amount:</p> <p>Program Fee Justification: N/A</p>		<p>YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> Estimated</p>	
<p>Specialized Accreditation?</p>		<p>YES <input type="checkbox"/> NO <input checked="" type="checkbox"/></p>	
<p>Accreditor:</p>			

Appendix A. Minor Requirements. Complete if requesting a minor (must have same name). Delete EXAMPLE column before submitting.

Total units required to complete minor	18
Upper-division units required	18
Total transfer units that may apply to minor	0
List any special requirements to declare/admission to this minor (completion of specific coursework, minimum GPA, interview, application, etc.)	N/A
Minor requirements (list all required coursework including core and electives). Courses listed must include course prefix, number, units, and title. Mark new coursework (New). Include any limits/restrictions needed (house number limit, etc.). Provide email(s)/letter(s) of support from home department head(s) for courses not owned by your department.	<p>Complete three of the Applied Computing core courses available below: CYBV 301, ETCV 302, INFV 302, INFV 310, CYBV 326, BASV 326, CYBV 329, BASV 329, INFV 320, INFV 401, ETCV 401.</p> <p>Complete additional three of the Applied Computing courses available below: CYBV 301, ETCV/INFV 302, INFV 310, CYBV/BASV 326, CYBV/BASV 329, INFV 320, ETCV/INFV 401, CSCV 335, CSCV 337, CSCV 352, CSCV 381, CYBV 473, CSCV 460, INFV 360, INFV 361, ETCV 301, ETCV/INFV 403, ETCV/INFV 405, ETCV/INFV 406, NETV/INFV 370, NETV 371, NETV 374, NETV 375, NETV/INFV 378, NETV/INFV 379, NETV/CYBV 382, CYBV/NETV 385, CYBV/NETV 477, CYBV/NETV 479, NETV/CYBV 496.</p>

Internship, practicum, applied course requirements (yes/no). If yes, provide description.	No
Additional requirements (provide description)	N/A
Any <u>double-dipping restrictions</u> (Yes/No)? If yes, provide description.	Yes, minor coursework may not double dip with another minor.

Appendix B. Emphasis Print Information-if applicable, complete the table below to indicate if proposed emphases should be printed on transcript and diploma. Add rows as needed. Note: emphases are displayed on transcript and diplomas as “_____ Emphasis”. Delete **EXAMPLE** row before submitting.

Emphasis	Print on transcript	Print on diploma
Software Development	Yes	Yes
Information Management	Yes	Yes
Digital Design	Yes	Yes
Network Operations	Yes	Yes

Appendix C. Curriculum Map for BAS in Applied Computing. Created using taskstream. Contact [OIA](#) for assistance in creating your curriculum map.

	Outcome												
	goal 1a: Identify and approach problems computationally: Explain and apply fundamental aspects and concepts of informatics	goal 1b: Identify and approach problems computationally: Select and use relevant analytic and modeling methods	goal 1c: Identify and approach problems computationally: Formulate problems and describe problem solutions in a chosen specialization	goal 1d: Identify and approach pb computationally: Design and conduct practical investigation, to interpret data and draw conclusions	goal 2.a: Use and design computer-based systems: Have in-depth knowledge of, and ability to apply and evaluate computer-based systems	goal 2.b: Use and design computer-based systems: Analyze the local and global impact of computing on individuals, organizations, and society	goal 2.c: Use and design computer-based systems: Select and use of appropriate process models and/or programming environments	goal 2.d: Use and design computer-based systems: Apply knowledge and design hardware and/or software to meet requirements	goal 3.a: Prepare for continued professional development: Work effectively in teams to develop solutions to solve problems	goal 3.b: Prepare for continued professional development: Communicate effectively, both orally and in writing	goal 3.c: Prepare for continued professional development: Think critically and creatively, both independently and with others	goal 3.d: Prepare for continued professional development: Be aware of project management and business practices	
	Courses and Learning Activities												
	ENGV 306 Advanced Composition									P	P		
	CYBV 301 Fundamentals of Cybersecurity	P		P									
	CYBV 326 Introductory Methods of Network Analysis	I	I	I	I								
	CYBV 329 Cyber Ethics									P	P	P	
	INFV 310 Introduction to Informatics									P	P	I	
	INFV 320 Computational thinking and doing					I	I	I	I	I	I	I	
	INFV 302 Statistics in Information Age		P		P		P	P					
INFV 401 Introduction to Human-Computer Interaction					P		P	P					
INFV/NETV 498 Senior Capstone	A	A	A	A	A	A	A	A	A	A	A	A	

Legend :

I

Introduced

P

Practiced

A

Assessed

Legend : I Introduced P Practiced A Assessed

Printed on: 12/10/2018 03:45:51 PM (EST)

BUDGET PROJECTION FORM
Name of Proposed Program or Unit: Applied Computing

	1st Year 2019__ - 2020	Projected 2nd Year 2020__ - 2021	3rd Year 2021 __ - 2022
METRICS			
Net increase in annual college enrollment UG	5	6	7
Net increase in college SCH UG	60	72	84
Net increase in annual college enrollment Grad			
Net increase in college SCH Grad			
Number of enrollments being charged a Program Fee			
New Sponsored Activity (MTDC)			
Number of Faculty FTE	5.00	5.00	6.00
FUNDING SOURCES			
Continuing Sources			
UG RCM Revenue (net of cost allocation)	198,263	220,708	246,893
Grad RCM Revenue (net of cost allocation)			
Program Fee RCM Revenue (net of cost allocation)			
F and A Revenues (net of cost allocations)			
Arizona Online Revenues	139,495	153,445	168,790
Distance Learning Revenues	58,800	64,680	71,148
Reallocation from existing College funds (attach description)			
Other Items (attach description)			
Total Continuing	\$ 396,558	\$ 438,833	\$ 486,831
One-time Sources			
College fund balances			
Institutional Strategic Investment			
Gift Funding			
Other Items (attach description)			
Total One-time	\$ -	\$ -	\$ -
TOTAL SOURCES	\$ 396,558	\$ 438,833	\$ 486,831
EXPENDITURE ITEMS			
Continuing Expenditures			
Faculty	250,000	250,000	330,000
Other Personnel			
Employee Related Expense	72,500	72,500	93,700
Graduate Assistantships			
Other Graduate Aid			
Operations (materials, supplies, phones, etc.)			
Additional Space Cost			
Other Items (attach description)			
Total Continuing	\$ 322,500	\$ 322,500	\$ 423,700
One-time Expenditures			
Construction or Renovation			
Start-up Equipment			
Replace Equipment			
Library Resources			
Other Items (attach description)			
Total One-time	\$ -	\$ -	\$ -
TOTAL EXPENDITURES	\$ 322,500	\$ 322,500	\$ 423,700
Net Projected Fiscal Effect	\$ 74,058	\$ 116,333	\$ 63,131

Undergraduate Major Peer Comparison Chart-delete **EXAMPLE columns** once ready to submit/upload. Find UA peers here:

<https://www.azregents.edu/arizonas-public-universities/peer-institutions>

Program name, sub-plan name (if applicable), degree, and institution	Proposed UA Program: Major: Applied Computing Subplans: Software Development, Information Management, Digital Design, Network Operations Bachelor of Applied Science degree CAST	Peer 1: Major: Computer Information Systems Bachelor of Applied Science degree Olympic University	Peer 2: Major: Bachelor of Applied Science Emphasis: Technology and Innovation George Mason University	Peer 3: Major: Informatics Bachelor of Science Focus Areas: Enterprise Informatics, Game Informatics, Geo-Informatics, and Digital Culture Studies Arizona State University	Peer 4: Major: Informatics Bachelor of Science Emphasis Areas: Astroinformatics, Bioinformatics, and Ecoinformatics, Northern Arizona University
Current # of enrolled students		13	39	130	954 students at School of Informatics, Computing, and Cyber Systems. No number available for Informatics.
Major Description - provide a description for the proposed program. Include the purpose, nature, and program highlights. Description must be consistent throughout the proposal documents and match departmental and college	Description of major: The Bachelor of Applied Science in Applied Computing introduces students to the core idea of applied computing with an interdisciplinary approach. Students in the program will be prepared for careers in software development, network operations, information management, and digital design. Applied computing is considered the intersection of information technology, computer science, information science and systems. It uses computation as a universal tool to solve problems in other fields, communication, and to express ideas. Applied Computing students develop a strong base of theoretical and practical interdisciplinary experiences.	From: https://www.olympic.edu/information-systems-bachelor-applied-science-bas Description of major The Bachelor of Applied Science in Information Systems will prepare graduates to strategically plan, manage and apply information technology solutions to business processes and challenges. This broad-based, rigorous degree is designed for students with a variety of experiences and backgrounds. The curriculum is competency based to ensure that students can demonstrate successful mastery of relevant knowledge, skills, and abilities. Much of the curriculum is aligned with in-demand industry certifications. Topics include business processes, software development, Web, networking,	From: http://ist.gmu.edu/programs/bas/ The Bachelor of Applied Science (BAS) is an undergraduate liberal arts degree program for adult learners. It is designed primarily to deepen student knowledge in an academic area and foster critical thinking, analytic reasoning, and an ability to synthesize information. The BAS articulates with specialized Applied Associate Science (AAS) degree programs, providing a streamlined path to completion of traditional academic requirements leading to the baccalaureate degree. It meets students' professional and personal	From: https://cidse.engineering.asu.edu/forstudent/undergraduate/majors/informatics-bs/degreerequirementsinfor The Bachelor of Science (B.S.) program in Informatics will be an interdisciplinary degree that combines mastery of general techniques for processing information with specialization in an application area and its information processing problems. The design of the degree responds to the rapidly growing need for skilled workers who can take a problem-driven, system-level, user-oriented perspective toward information and computing, who can apply current informatics methods to address society's needs, and	From: http://catalog.nau.edu/Catalog/details?plan=INF ORMBS&catalogYear=1819 The Bachelor of Science degree in Informatics aims to prepare students to apply their informatics expertise to an emphasis area of interest. By providing a broad foundation in computing and data analysis, consisting of computer science, programming, software engineering, statistics, and mathematics expertise, with in-depth study in an emphasis area, this program prepares graduates for a broad range of interdisciplinary careers in industry,

<p>websites, handouts, and promotional materials.</p>		<p>information assurance, project management, analytics, communication, teamwork and leadership. The program includes opportunities for work-based learning, internships and capstone projects.</p>	<p>goals while developing a depth of knowledge and proficiency of skill that translates well to the workplace. This degree is ideal for those who desire to gain workplace and industry-wide technical competencies, to complete a bachelor's degree, and to enhance personal earning potential. Courses will enhance your business know-how and information technology skills in order to prepare you for the global business place.</p>	<p>who can contribute to the next generation of such systems.</p> <p>The program begins with the fundamentals of Informatics in a general setting and in the context of disciplinary applications. The student will select a focal area such as educational informatics, geo-informatics, digital cultures, enterprise informatics, or game informatics. They will take prescribed courses and complete a two-course capstone project in the focal area. Thus, Informatics graduates will remain highly interdisciplinary, yet have a specialization that gives them a head start on one possible career in Informatics.</p>	<p>government, and academic organizations or further post-graduate study. This program focuses on the practical application of computing and data analysis expertise to a broad range of domains. Study in this program is initially grounded in rigorous coursework that gives students the opportunity to master foundational computing and data analysis skills as well as gain in-depth knowledge in a scientific area closely associated with their emphasis, i.e. biology for the bioinformatics emphasis, ecology for the ecoinformatics emphasis, and astronomy for the astroinformatics emphasis.</p> <p>Continued study in the Informatics program is focused on undergraduate research and problem-based learning closely supervised by a faculty mentor with specialized expertise. Students in the bioinformatics emphasis will focus on applications and building expertise in cellular and molecular biology, including genetic and genomic analyses and the study of microbiology and disease mechanisms. Students in the ecoinformatics emphasis will have opportunities to</p>
--	--	---	---	--	--

					<p>study ecosystem and microorganism dynamics with applications in conservation and managing global environmental change. Students electing the astroinformatics emphasis will focus on applications in solar system mechanics, object motion, and observation and imaging analyses. During their junior and senior years in the program, students will embed in the research lab of a faculty mentor working in problems appropriate to each student's emphasis and research interests. As a member of a collaborative research group, students will have the opportunity to strengthen their computing and data analysis skills, gain extensive hands-on experience in informatics applications and emphasis-appropriate tools and methods, and develop innovative methods to help answer critically-important scientific questions. Furthermore, this experience will result in tangible outcomes, such as software packages and tools, scientific papers, and conference presentations, all of which support students' future careers goals in either industry, government, or</p>
--	--	--	--	--	--

					<p>academia and post-graduate study.</p> <p>Our program is strengthened by our broad range of collaborations and partnerships with many other academic units and research centers, including: Center for Bioengineering Innovation, Center for Microbial Genetics and Genomics, Center for Ecosystem Science and Society, Merriam-Powell Center for Environmental Research, Department of Biological Sciences, Department of Physics and Astronomy, School of Earth Sciences and Environmental Sustainability, and School of Forestry. Our faculty also work with regional research collaborators such as Translational Genomics Research Institute, Northern Arizona Healthcare and Flagstaff Medical Center, North Country HealthCare, U.S. Geological Survey, and Northern Arizona Planetary Science Alliance.</p>
Target careers	<ul style="list-style-type: none"> • Consulting and advising • Software development • Web design and 	<ul style="list-style-type: none"> • Information Management • Software developer • Network Management • Technology 	<ul style="list-style-type: none"> • Information Technology • Instructional Technology • Healthcare 	<ul style="list-style-type: none"> • User experience designer • Usability engineer • Information architect • Network manager • Web developer 	<p>The Bachelor of Science degree in Informatics prepares students for careers in the application of technological expertise to their chosen area of emphasis. Emerging</p>

	<ul style="list-style-type: none"> development • Network management and planning • Information management • Information technology instruction services • Network security and analysis • Game development • Information technology support and maintenance • Information literacy teaching • Technology management • Training simulation design 	<ul style="list-style-type: none"> Management • Healthcare Technology 	<ul style="list-style-type: none"> technology • Telecommunications 	<ul style="list-style-type: none"> • Information security professional • Instructional designer • E-commerce specialist • Human-computer interface designer • Information architect • Stage and lighting designer • Biology/chemistry informaticist • Business technology analyst • Database developer/manager • Digital artist • Digital library specialist • Interaction designer • IT Consultant • Multimedia specialist • Software developer • System administrator • Technical writer • Technology management • Technology support/customer service • Usability tester • Web designer 	fields, such as bioinformatics, ecoinformatics, and astroinformatics, allow students to work with the latest methods and tools and support advancements in science in a variety of industry, government, and academic settings.
Total units required to complete degree	120 units	180 units	120 units	120 units	120 units
Upper-division units required to complete degree	45 units	85 units	45 units	45 units	45 units
Foundation courses					

English composition	ENGL 101 (3) First-Year Composition or equivalent ENGL 102 (3) First-Year Composition or equivalent	ENGL 101 English Composition—5 credits ENGL 235 Technical Writing—5 credits	Written Communication, Lower Level—3 credit hours Written Communication, Upper Level—3 credit hours	ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition	English Composition (minimum of 4 units)
Second language	CYBV 473—Violent Python or CSCV 352—System Programming in Unix or CYBV 470—C Programming for Security Professionals (2 nd Semester Programming Language) or 2 nd Semester Foreign Language Proficiency	None	None	None	None
Math	INPV 302: Statistics in the Information Age	MATH 141: Precalculus: Algebra	Mth 151: Quantitative Reasoning	MAT 210: Brief Calculus MAT 265: Calculus for Engineers I MAT 242: Elementary Linear Algebra MAT 243: Discrete Mathematical Structures	MAT 226: Discrete Mathematics
General education requirements	TIER II GENERAL EDUCATION (21 Units) Natural Sciences (3 Units) Arts and Humanities (6 Units) Individuals and Societies (12 Units) Diversity Requirement	SOC 101 Intro to Sociology (5 credits) BUS& 101 Intro to Business (5 credits) CMST&210 Interpersonal Communication (5 credits)	Undergraduate General Education Requirements: (28/29 units) Literature (3 units) Arts (3 units) Natural Science with lab (4 units) Natural Science with/without lab (3-4 units) Western Civilization/World History (6 units) Global Understanding (3 units) Social and Behavioral Science (6 units)	HU/SB Guidelines (15 semester hours or five 3-semester hour classes) One Class Upper Division (HU or SB) – 3 semester hours ~MUST BE TAKEN AT A 4-YEAR INSTITUTION Two Classes HU (Humanities) – 6 semester hours minimum Two Classes SB (Social Behavioral) – 6 semester hours minimum Within these five classes, select courses that include three awareness areas: cultural, global, and historical. No one class contains more than two awareness areas and this requirement must be met with two classes minimum. Contact	Liberal Studies: Aesthetic and Humanistic Inquiry - AHI (minimum of 6 units) Cultural Understanding - CU (minimum of 6 units) Science (minimum of 7 units) -3-4 units of Science and Applied Science - SAS course(s) AND -3-4 units of Science and Applied Science with embedded Lab Science course - LAB Social and Political Worlds - SPW (minimum of 6 units) 3 additional units from any distribution block or foundation category to meet the 35 unit liberal

				<p>your advisor if you have questions.</p> <p>Example:</p> <p>At least one Upper Division (HU or SB) – 3 semester hours</p> <p>REL 321 (Religion in America) – Humanities (HU) plus cultural diversity and historical awareness</p> <p>Two Classes HU (Humanities) – 6 semester hours minimum</p> <p>CON 101 (Construction and Culture: A Built Environment) – Humanities (HU) plus global and historical</p> <p>PHI 101 (Introduction to Philosophy) – Humanities (HU)</p> <p>Two Classes SB (Social Behavioral) – 6 semester hours minimum</p> <p>ECN 211 – Macroeconomics – Social Behavioral (SB)</p> <p>PSY 101 (Introduction to Psychology) – Social Behavioral (SB)</p>	<p>studies requirement</p> <p>Diversity: 3 units of coursework that meet the criteria for the U.S. Ethnic Diversity requirement. 3 units of coursework that meet the criteria for the Global Diversity requirement.</p> <p>Junior-level Writing and Senior Capstone</p>
<p>Pre-major? (Yes/No. If yes, provide requirements.) Provide email(s)/letter(s) of support from home department head(s) for courses not owned by your</p>	No	No	No	No	No

department.					
List any special requirements to declare or gain admission to this major (completion of specific coursework, minimum GPA, interview, application, etc.)	<p>The Applied Computing program requires a supplemental program application in addition to admission to The University of Arizona. The entrance requirements include:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Minimum 2.5 GPA in your college coursework <input type="checkbox"/> Resume <input type="checkbox"/> Goal statement <input type="checkbox"/> AAS degree in computer related field (recommended) 	<p>IT-related technical associate degree OR 90+ equivalent credits from a regionally- or nationally-accredited institution</p> <p>Minimum 2.0 college level GPA Minimum 2.0 grade in all prerequisites 30 prerequisite credits in General Education 24 prerequisite credits in IT-related courses Complete the admissions process Submit transcripts Apply to the BAS IS program</p>	<p>To be admitted into the Bachelor of Applied Science program with a concentration in Technology and Innovation, a student must have an Associate's degree in Applied Science (AAS) in a technology- or business-related field, with a minimum GPA of 2.0. Students must submit a program application and have their transcripts evaluated for transfer credit.</p>	<p>The admission requirements for a Bachelor of Science in informatics are higher than minimum university admission requirements. Students should select a second major choice when applying for admission to a degree program in the Ira A. Fulton Schools of Engineering.</p> <p>International students may have an additional English-language proficiency criterion. Foreign nationals must meet the same admission requirements shown below with the possible additional requirement of a minimum TOEFL score. If the university requires a TOEFL score from the applicant, (see http://students.asu.edu/international-admission) and admission to engineering requires a minimum TOEFL score of 550 (paper-based), 213 (computer-based), 79 on iBT (Internet-based) or a minimum IELTS score of 6.5.</p>	<p>Admission requirements over and above admission to NAU are required.</p> <p>Admission is competitive and based on the following criteria:</p> <p>Successful completion of all pre-major course requirements with a "C" or better, or current enrollment in any remaining course requirements during the semester of application.</p> <p>A minimum GPA of 3.0 in all pre-major course requirements, although this minimum does not guarantee admission and higher GPA is expected.</p> <p>Admission decisions that consider in-progress coursework are contingent on successful completion of this coursework as well as continued satisfaction of all other requirements</p>
Major requirements					
Minimum # of units required in major (units counting towards major)	42	90	45	87	97

units and major GPA)					
Minimum # of upper-division units required in the major (upper division units counting towards major GPA)	39	80	30	45	45
Minimum # of residency units to be completed in the major	30	85	30	30	30
Required supporting coursework (courses that do not count towards major units and major GPA, but are required for the major). Courses listed must include subject code, units, and title. Provide email(s)/letter(s) of support from home department head(s) for courses not	N/A	CMST&210 Interpersonal Communication (5 credits) CIS 110: Information Systems Concepts (5 credits) CIS 111: Introduction to Operating Systems (4 credits) CIS 141: Programming Concepts (5 credits) CIS 155: Web Development (5 credits) CIS 182: Networking Concepts (5 credits)	Prerequisite: IT 102: Discrete Mathematics (3 units) or MATH 125: Discrete Mathematics (3 units)	None	None

owned by your department.					
Major requirements (list all required major coursework including major core, major electives, sub-plan core, and sub-plan electives; courses count towards major units and major GPA) Courses listed must include course prefix, number, units, and title. Mark new coursework (New). Provide email(s)/letter(s) of support from home department head(s) for courses not	<u>BAS Applied Computing CORE (27 Units):</u> CYBV 301--Fundamentals of Cyber Security (3 units) ETCV/INFV 302--Statistics in Information Age (3 units) ENGV 306--Advanced Composition (3 units) INFV 310--Introduction to Informatics (3 units) INFV 320--Computational Thinking and Doing (3 units) CYBV/BASV 326--Introductory Methods of Network Analysis (3 units) CYBV/BASV 329--Cyber Ethics (3 units) ETCV/INFV 401--Intro to Human-Computer Interaction (3 units) INFV 498 or NETV 498--Senior Capstone (3 units) <u>Software Development</u> CSCV 335--Object-Oriented Programming and Design (4 units ¹) CSCV 352--System Programming and Unix (3 units) INFV 361--Data Analysis and Visualization (3 units) CSCV 337--Web Programming (3 units) CSCV 335 is an equivalent course to C SC 335, which was changed by the Computer	B.A.S. Requirements (18 units) BUS 215: Business Statistics (5 credits) CMST&230: Small Group Communication (5 credits) IS 300: IS Foundations (5 credits) IS 302: Information Systems Integration (5 credits) IS 305: Scripting for Automation (5 credits) IS 330: Database & Data Analysis (5 credits) IS 337: Information Assurance I (5 credits) IS 346: LAN Administration IV (5 credits) IS 350: Project Management I (5 credits) IS 390: IS Reading and Research (5 credits) IS 415: Informatics and Analytics (5 credits) IS 438: Information Assurance II (5 credits) IS 450: Project Management II (5 credits) IS 470: Enterprise Systems (5 credits) IS 490: Senior Project (5 credits) OLRM 320: Business/Leadership--Digital Economy (5 credits) SOC 319: Sociology of the Digital World (5 credits) Natural Science Lab: A Physical, Biological, or Earth Science	BAS Upper Division Requirements Major in BAS, Writing-Intensive Requirement IT 343: IT Project Management Major in BAS, Core Courses BAS 300: Building Professional Competencies EDIT 201: Strategies for Online Learning Success BAS 490: Introduction to Research Methods BAS 491: Applied Sciences Capstone Major in BAS, Concentration in Tech & Innovation IT 106: IT Problem Solving IT 213: Multimedia & Web Design IT 214: Database Fundamentals IT 223: Information Security Fundamentals IT 304: IT in the Global Economy MBUS 300: Accounting in a Global Economy MBUS 301: Manag. People & Org. in Global Eco. MBUS 302: Manag. Information in a Global Eco. MBUS 303: Marketing in a Global Economy MBUS 305: Intro to	Core Courses CPI 101: Introduction to Informatics CSE 110: Principles of Programming with Java MAT 210: Brief Calculus (OR MAT 265: Calculus for Engineers I CSE 205: Object-Oriented Programming and Data Structures MAT 242: Elementary Linear Algebra or MAT 342 or MAT 343 MAT 243: Discrete Mathematical Structures CPI 200: Mathematical Foundations of Informatics CPI 220: Applied Data Structures and Algorithms CPI 221: Advanced Object-Oriented Principles Using Java CPI 310: Web-Based Information Management Systems CPI 360: Decision Making and Problem Solving IEE 305: Information Systems Engineering STP 226: Elements of Statistics OR STP 231: Statistics for Life Science OR STP 420: Introductory Applied Statistics OR	<u>Pre-professional Requirements:</u> Foundations CS 126: Computer Science I CS 126L: Computer Science I Lab CS 136: Computer Science II CS 136L: Computer Science II lab CS 200: Introduction to Computer Organization MAT 136: Calculus I MAT 137: Calculus II BioInformatics Emphasis BIO 181: Unity of Life 1: Life of Cell BIO 181L: Unity Of Life I Laboratory BIO 182: Unity Of Life II: Lives Of Multicellular Organisms BIO 182L: Unity Of Life II Laboratory CHM 151: General Chemistry I CHM 151L: General Chemistry I Lab CHM 152: General Chemistry II CHM 152L: General Chemistry II Lab Ecoinformatics

¹ CSCV 335 is an equivalent course to C SC 335, which was changed by the Computer Science department at the main campus to 3 units effective 08/01/2019 (Fall 2019). We submitted a course modification to make corresponding change for CSCV 335.

<p>owned by your department.</p>	<p>Science department at the main campus to 3 units effective 08/01/2019 (Fall 2019). We submitted a course modification to make corresponding change for CSCV 335.</p> <p>Choose 1 (3 units) CSCV 381--Mobile Device Programming (3 units) CYBV 473--Violent Python (3 units) CSCV 460--Database Design (3 units)</p> <p><u>Information Management</u> INFV 360--Database Management Fundamentals (3 units) CSCV 337--Web Programming (3 units) INFV 361--Data Analysis and Visualization (3 units) CSCV 460--Database Systems (3 units)</p> <p>Choose 1 (3 units) ETCV/INFV 403--Principles of Web Design (3 units) NETV 370--Intro to Network Design and Architecture (3 units) NETV/INFV 379--Cloud Computing (3 units)</p> <p><u>Digital Design</u> ETCV/INFV 403--Principles of Web Design (3 units) ETCV/INFV 405--Introduction to Serious Game Design (3 units) INFV 361--Data Analysis and Visualization (3 units) ETCV/INFV 406--Introduction to Game</p>	<p>course w/lab (not included above) (5 credits)</p>	<p>International Business</p>	<p>IEE 380: Probability and Statistics for Engineering Problem Solving OR GIS 470: Advanced Statistics for Geography and Planning CPI 350: Evaluation of Informatics Systems CSE 463: Introduction to Human Computer Interaction</p> <p>Capstone Courses CPI 485: Informatics Capstone I CPI 486: Informatics Capstone II</p> <p>Enterprise Informatics Focus Area MAT 266: Calculus for Engineers II (MA) IEE 376: Operations Research Deterministic Techniques/Applications IEE 385: Engineering Statistics: Probability A IEE 470: Stochastic Operations Research Select One: IEE 421: Urban Operations Research IEE 426: Operations Research in Healthcare IEE 461: Production Control IEE 474: Quality Control IEE 475: Simulating Stochastic Systems (CS) IEE 477: System Dynamics and Thinking</p> <p>Game Informatics Focus Area CPI 111: Game Development I (CS) CPI 211: Game Development II CPI 311: Game Engine</p>	<p>Emphasis BIO 181: Unity of Life 1: Life of Cell BIO 181L: Unity Of Life I Laboratory BIO 182: Unity Of Life II: Lives Of Multicellular Organisms BIO 182L: Unity Of Life II Laboratory BIO 205: Microbiology BIO 205L: Microbiology Lab CHM 130: Fundamental Chemistry CHM 130L: Fundamental Chemistry Lab</p> <p>Astroinformatics Emphasis AST 180: Introduction To Astronomy AST 181:Introduction To Observational Astronomy CS 122: Programming For Engineering And Science CS 122L: Programming For Engineering And Science Lab PHY 161: University Physics I PHY 262: University Physics II</p> <p><u>Professional Requirements</u></p> <p>Core Requirements CS 249: Data Structures CS 345: Principles Of Database Systems CS 386: Software Engineering CS 480: Operating Systems EE 223: Intermediate</p>
---	---	--	-------------------------------	---	---

	<p>Development (3 units)</p> <p>Choose 1 (3 units) ECTV 301--Interpreting and Presenting Digitally (3 units) NETV/INFV 370--Intro to Network Design and Architecture (3 units) NETV/INFV 379--Cloud Computing (3 units)</p> <p><u>Network Operations</u> NETV/INFV 370--Intro to Network Design and Architecture (3 units) NETV 371--Network Security Principles (3 units) NETV 375--Advanced Routing and WAN Technologies (3 units) NETV/INFV 379--Cloud Computing (3 units)</p> <p>Choose 1 (3 units) NETV/INFV 378--System Administration (3 units) NETV 374--Routing: Theories and Applications (3 units) NETV/CYBV 382--Network Defense, Incident Response & Disaster Recovery (3 units) CYBV/NETV 385--Introduction to Cyber Operations (3 units) NETV/CYBV 477--Advanced Computer Forensics (3 units) CYBV/NETV 479--Wireless Networking and Security (3 units) NETV 493--Internship (1-3 units) CYBV/NETV 496--Special Topics in Cyber Security (3 units)</p>			<p>Development CPI 321: Fundamentals of Game Art Select one: CPI 411: Graphics for Games CPI 412: Cognitive Systems and Intelligent Agents CPI 421: 3-D Modeling and Texturing CPI 422: 3-D Animation and Rigging for Video Games CPI 462: Design for Learning in Virtual Worlds SER 431: Advanced Graphics</p> <p>Geo-Informatics Focus Area GIS 205: Geographic Information Science I (CS) GIS 211: Geographic Information Science II (CS) GIS 311: Geographic Information Science III (CS) Select two: ABS 485: GIS in Natural Resources GCU 361: Urban Geography (SB) GCU 441: Economic Geography (SB) GCU 442: Geographical Analysis of Transportation (SB) GCU 494: Special Topics GIS 341: Introduction to Cartography and Georepresentation (CS) GIS 351: Air Photo Interpretation GIS 461: Optimization Fundamentals for Spatial Analysis GIS 471: Spatial Statistics for Geography and Planning</p> <p>Digital Culture Studies Focus Area</p>	<p>Programming MAT 226: Discrete Mathematics STA 275: Statistical Analysis STA 371: Intermediate Statistics ENG 302W: Technical Writing INF 376: Research Initiation INF 386: Research Planning INF 476C: Research Design INF 486C: Capstone Experience</p> <p>An additional 6 units of elective coursework at the 200-level or above, chosen after consulting with your academic or faculty advisor, from CS, EE, MAT, STA, BIO, PHY, or AST. Students may petition for approval of courses with other prefixes.</p> <p>Emphasis Requirements: BioInformatics Emphasis BIO 205: Microbiology BIO 205L: Microbiology Lab BIO 240: Genetics And Evolution BIO 344: Cellular And Molecular Biology BIO 450: Bioinformatics BIO 482C: Human Genomics Additional BIO course work at the 300-level or above (3 units)</p>
--	---	--	--	--	--

				<p>AME 111: Introduction to Digital Culture (CS)</p> <p>AME 112: Computational Thinking for Digital Culture</p> <p>AME 130: Prototyping Dreams (L)</p> <p>AME 220: Programming for the Web</p> <p>AME 294: Introduction to Physical Computing</p> <p>AME 310: Media Literacies and Composition</p> <p>AME 320: Motion Capture for Integrative Systems</p> <p>AME 330: Digital-Physical Systems</p> <p>AME 340: Compositional and Computational Principles for Media Arts</p> <p>AME 394: Media Theatre</p> <p>AME 394: Technical Lives</p> <p>AME 430: Mac Development for Media Arts</p> <p>AME 470: Programming for Social and Interactive Media</p> <p>AME 494: Animating Virtual Worlds</p> <p>ANP 394: Digital Modeling and Fabrication</p> <p>ANP 494: Design by Algorithm</p> <p>ANP 494: Designing Hybrid Spaces</p> <p>ART 116: Introduction to Digital Media</p> <p>ART 206: Digital Photography I: The Still Image in Digital Culture</p> <p>ART 218: 3D Tools</p> <p>ART 345: Visualization and Prototyping</p> <p>DCE 294: HybridAction: Physical Intelligence in Digital Culture</p> <p>FMP 240: Introduction to Animation for Film</p>	<p>Ecoinformatics Emphasis</p> <p>BIO 326: Ecology</p> <p>BIO 326L: Ecology Lab</p> <p>BIO 441: Conservation Biology</p> <p>BIO 471C: Microbial Ecology</p> <p>BIO 479: Ecosystems And Climate Change</p> <p>FOR 213: Ecology And Management Of Forest Soils</p> <p>Additional BIO course work at the 300-level or above (3 units)</p> <p>Astroinformatics Emphasis</p> <p>AST 280: Introduction To Astrophysics</p> <p>AST 390: Astrophysics: The Solar System</p> <p>AST 391: Astrophysics: Stars OR AST 392: Astrophysics: Galaxies And Cosmology</p> <p>AST 401: Observational Astronomy</p> <p>AST 401L: Observational Astronomy Lab</p> <p>AST 520: Astroinformatics: Big Data In Astronomy</p> <p>PHY 263: University Physics III</p> <p>Additional coursework is required, after the previously described requirements are met, if necessary to complete the total of 120 units.</p>
--	--	--	--	---	--

				<p>FMP 294: Story Development for Game Design FMP 394: Non-Linear Editing for Film and Media IAP 103: Foundations I: Interdisciplinary Digital Media IAP 104: Foundations I: Fundamentals of Sound Art MDC 211: Introduction to Digital Sound MDC 311: Composing and Performing for Hybrid Ensembles</p> <p>Additional Informatics Electives Students may choose from any of the courses not in their selected focus area as Informatics Electives in addition to the courses listed below:</p> <p>AME 394: Philosophies of Technology ART 346: 3-D Computer Imaging and Animation (CS) BIO 355: Introduction to Computational Molecular Biology (CS) BIO 411: Quantitative Methods in Conservation and Ecology BIO 424: Dynamic Modeling in Social and Ecological Systems BMI 102: Introduction to Public Health Informatics CIS 300: Web Design and Development CIS 365: Business Database Systems Development CPI 441: Gaming Capstone CPI 460: Intelligent Interactive Instructional Systems CPI 484: Internship</p>	
--	--	--	--	---	--

				CPI 494: Special Topics CSE 220: Programming for Computer Engineering CSE 240: Introduction to Programming Languages CSE 259: Logic in Computer Science CSE 294: Algorithmic Problem Solving CSE 310: Data Structures and Algorithms CSE 335: Principles of Mobile Application Development CSE 360: Introduction to Software Engineering CSE 394: Special Topics CSE 408: Multimedia Information Systems CSE 412: Database Management CSE 471: Introduction to Artificial Intelligence CSE 476: Introduction to Natural Language Processing CSE 477: Introduction to Computer-Aided Geometric Design or CSE 494: Special Topics CSE Special Topics must be Digital Culture classes with 3** or 4** numbers. FSE 301: Entrepreneurship and Value Creation FSE 494: EPICS Gold III GIT 135: Graphic Communications GIT 230: Digital Illustration in Publishing GIT 335: Computer Systems Technology GRA 294: InDesign GRA 294: Photoshop HSE 101: Introduction to Human Systems Engineering (SB) IEE 385: Engineering	
--	--	--	--	--	--

				Statistics: Probability MAT 267: Calculus for Engineers III (MA) SER 316: Software Enterprise: Construction and Transition SER 334: Operating Systems and Networks SOC 334: Technology and Society (L or SB) STS 304: Science, Technology, and Society (SB) TEL 313: Technology in an Educational Setting TWC 414: Visualizing Data and Information TWC 444: User Experience	
Internship, practicum, applied course requirements (Yes/No. If yes, provide description)	Yes. Students must complete INFV/NETV 498, Senior Capstone, with a minimum 45 hour student engagement experience.	Optional	BAS 491: Applied Sciences Capstone	CPI 485: Informatics Capstone I CPI 486: Informatics Capstone II	Yes. Students must complete a senior capstone course in the major that involves students in application, synthesis, practice, or inquiry.
Senior thesis or senior project required (Yes/No. If yes, provide description)	Yes. Students engage in a senior project and write a senior project thesis paper as part of the INFV/NETV 498—Senior Capstone.	Yes	No	Yes	Yes.
Additional requirements (provide description)	Students must earn a minimum 2.0 major GPA.	Minimum 2.0 Major GPA	None	Students on the 2015 and later catalog years will select 36 hours of course work that includes selecting and completing a 15 hour focus area as specified. Students will need to take 21 of	A cumulative grade point average of at least 2.0 on all work attempted at Northern Arizona University.

				<p>the 36 total hours as upper division 300/400 level courses. These 21 hours can be shared between the Informatics Electives and the Focus Area.</p> <p>Students must complete their 15 hours of focus area courses with a minimum GPA of 2.0 for 2015 and later catalog years.</p>	
Minor (specify if optional or required)	Optional	Optional	Optional	Optional	Optional

*Note: comparison of additional relevant programs may be requested.

FRED M. D'ANGELO

1211 N Avenida Canon del Cajon • Green Valley • AZ 85614 • 520-425-2697 • FredDangelo@cox.net

CAREER PROFILE

University adjunct faculty member with nearly three years of experience.

Community College faculty member with 11 years of full-time experience and 6 years of part-time experience.

Financial and IT professional with over 20 years of diverse experience including financial analysis, financial applications development, financial modeling and reporting. IT competencies include:

- **Networks** – Cisco switches and routers, WireShark
- **Applications/Languages** –Java, Python, C/C++, SQL, Excel VBA
- **Databases** – MySQL, MariaDB, SQL Server, MS Access, JDBC, ODBC

PROFESSIONAL EXPERIENCE

University of Arizona South, Sierra Vista, AZ

2016-present

Taught Introduction to Informatics with Python, Object-Oriented Programming, Database Fundamentals and Comparative Programming Languages.

Pima Community College, Tucson, AZ

2010 – 2016 & 2007 – 2008

Community College Computer Information Systems faculty member

Taught programming (C++, Java, Python), database design and SQL courses. In addition:

- Worked with University of Arizona Computer Science Department to ensure transferability of courses
- Contributed to writing a successful Title III HSI Grant Application
- Contributed to writing a "TechHire" Grant Application
- Helped co-ordinate efforts to develop course and program student learning outcomes
- Served on various committees and task forces: Search Committees, Academic Advisory Committee, College Curriculum Committee, Academic Standards Committee, Assessment Task Force and program review committees
- Revised course and curriculum content
- Wrote the draft student learning assessment section of a compliance report filed with PCC's accreditor

Pima County Recorder's Office, Tucson, AZ

2009 – 2010

Software developer

Developed components of a document management system using C#, .Net Framework and Oracle database.

Manchester Community College, Manchester, CT

2001 – 2007

Community College Computer Science & Technology faculty member

Taught programming languages (C++, Java), networking, operating systems and introductory courses. In addition:

- Chaired Academic Technology Advisory Committee which provides technology support to Academic Dean.
- Planned and built network infrastructure lab using Cisco equipment.
- Participated in college search committees, faculty senate committees and public education committees
- Conducted workshops at the annual Connecticut State University Academic Computing Conference.
- Participated in curriculum planning for Computer Technology Department.
- Tutored students in developing writing skills.

MIDDLESEX COMMUNITY COLLEGE, Middletown, CT

1999 – 2002

Adjunct Faculty

Taught courses and developed curricula for: Visual Basic and Java. Participated in curriculum planning

OFFIS CORPORATION, Wallingford, CT

2001 – 2002

Accounting Software Developer

Responsible for: developing VB, VBScript and ASP web-enabled database custom financial applications for client companies; customizing accounting/inventory management software; converting data from older systems.

- Created a number of innovative VB programs to automate manual processes in the Macola inventory management system thereby saving many hours of labor with each transaction.

NORTHEAST UTILITIES, Berlin, CT

1980 – 2001

Senior Network Analyst 1997-2001

Responsible for installing, configuring and managing remote access services and Cisco switches and routers.

- Introduced VPN which improved remote access performance and saved thousands of dollars per month.
- Authored first network technology plan used by IT VP to explain network operations to senior management.
- Selected and deployed equipment for enabling electric service meters to be read remotely via modems.
- Improved Help Desk efficiency by contributing procedures to a Remedy ARS knowledge database..

IT Architect

1996 – 1997

Responsible for evaluating products and technologies for potential benefits and compatibility with corporate technology architecture.

- Key member of a team that researched and selected help desk automation/problem-tracking software
- Key member of a team that researched and selected an OLAP decision support database.
- Designed and programmed visual interface to assist operations staff in monitoring the status of IP devices.

IT Client Account Manager & Special Projects

1994 – 1996

Responsible for serving as IT liaison and customer service provider to the Treasury Department and CFO.

- Planned and coordinated upgrades of Treasury Department's PC hardware, software and network communications which enabled clients to utilize information resources more effectively.
- Assisted Tax Department with evaluating third party application packages.
- Conceived and built an extremely flexible system for enabling Tax Department staff to select accounting system data to export to the tax package and specify its level of aggregation, thereby saving several weeks of work each year by automating a labor-intensive, manual processes.
- Designed and developed several components of a complex cross-platform project management application for providing managers with a means to view comparative costs, benefits and ROI.
- Co-lead of team that setup the first official corporate web server and wrote applications for it.

Senior Analyst - Management Information and Budgeting Project

1990 – 1994

Responsible for defining system requirements, designing, developing and testing various programs to implement budget and variance reporting in a major corporate accounting system project.

- Developed a series of programs for simulating the output of processes which had not yet been built thus enabling the team to continue working and meeting or exceeding deadlines without relying on others to complete their work.
- Created and built innovative process for importing financial model's forecasted data into the accounting system thus avoiding hundreds of hours need for building a separate budget process.
- Mastered relational database concepts in a DB2 environment.

Senior Financial Systems Analyst - Corporate Financial Forecasting

1986 – 1990

Responsible for both programming the corporate model and developing financial forecasts for senior management. Developed “front-ends” that made model easier for staff to use.

Financial Analyst - Revenue Requirements

1981 – 1985

Responsible for extracting, analyzing and presenting financial data to support applications for rate increases. Developed techniques to automate time-consuming data extraction and analysis tasks.

EDUCATION

Graduate Certificate in Computer Network Communications

RENSSELAER AT HARTFORD

Master of Science in Accounting

UNIVERSITY OF HARTFORD

Bachelor of Arts in Psychology, Honors

UNIVERSITY OF CONNECTICUT

Various Accounting, Business and Programming Courses

MANCHESTER COMMUNITY COLLEGE

Various Cisco Network Courses

CONNECTICUT COMPUTER INSTITUTE

OTHER ACCOMPLISHMENTS

Toastmaster, CTM

Passed Certified Public Accountant Exam


Wrote and published two, lengthy two-part articles on the history of Manchester, CT

Various volunteer work over the years such as;

- Currently treasurer for the Animal League of Green Valley, a major animal shelter and adoption service in southern Arizona
- Previously treasurer for a non-profit org and a property owners association (POA)
- Architecture chairperson for POA
- Actively participated in annual projects and special events for Connecticut nonprofits.

MICHAEL GRIFFITH

1430 E. 2nd Street
PO Box 210069
Tucson, AZ 85721-0069

tel +1 (520) 621-4490
email griffith@arizona.edu
 [linkedin.com/in/griffithm](https://www.linkedin.com/in/griffithm)

Education

University of Arizona — Bachelor of Science 2003
Management Information Systems

University of Arizona — Master of Science 2011
Educational Technology

Professional Employment

Director, Instructional & Learning Technology, University of Arizona
2014 - Present

Develop and implement a vision for innovation in instructional & learning technology to support student success. Work with faculty to develop engaging asynchronous online courses with meaningful interactions with content, instructors and other students. Designed and implemented a high definition video production studio to create instructional videos for online courses. Selected technology and worked with vendors to implement a low-cost telerobotics platform for distance students in traditional face-to-face courses. Envisioned and implemented “Teachers Who Code” curriculum - bringing computational thinking, robotics, and programming to the secondary classroom. Manage budget for unit, assist in the development of grant proposals, work with peers and leadership across campus to discover, assess, and share pedagogy and technology choices to meet organizational goals.

Assoc. Director, Division of BioCommunications, University of Arizona
2010 - 2014

Duties included research and selection of core technologies to meet operational goals, managing internal and grant-funded projects including resource, timeline, and budgeting requirements, and acting as lead developer on web application and data management projects. Manage the College of Medicine iPad 1:1 Program, including implementation of a mobile device management server and workflows, and developing and delivering training to students and faculty. Led the implementation of course capture capabilities for the College of Medicine and College of Pharmacy including the specification of equipment, coordinating funding, and selection of outside vendor. Develop and deliver, “Teaching with Technology” Faculty Development Series for the Office of Medical Student Education. Present on a variety of Educational Technology topics to faculty and campus groups. Appointed to the College of Pharmacy “Teaching and Learning with Technology” committee and Phoenix 2014 Steering Committee. Staff representative to the College of Medicine student technology committee.

Adjunct Lecturer, Educational Technology, University of Arizona South
2013 - Present

Developed new curricula and taught two fully online undergraduate credit courses: Principles of Web Design and Introduction to Human Computer Interaction. Produced video lectures for a flipped classroom approach. Designed and implemented assessment and learning activities for online courses. Wrote software to provide students immediate feedback on homework assignments.

Director, Interactive Media Development, UA College of Medicine
2008 - 2010

Worked with faculty & staff to produce web-based applications and podcasts to meet the teaching, research, and outreach missions of the College of Medicine. Developed infrastructure and workflows to podcast up to 8 simultaneous lectures / grand rounds at a time with automatic compression and posting to iTunes U. Ten grand rounds in top 100 ‘Great Collections’ on iTunes U - Health & Medicine section (2012). Led a staff of web developers focused on delivering successful websites built on the W3C standards. Developed custom websites using the Drupal content management framework.

Director - Information Technology - UA Family & Community Medicine

2005 - 2008

Evaluated and purchased server technologies to support the department's storage and web hosting needs. Directed systems support staff. Led a team of Web developers in creating sites to support research and instructional needs of the department.

Related Work Experience

Independent Film Maker, Tall Ship Productions, Tucson

2007 - Present

Participated in 48-hour film shootouts. Filmmakers write, shoot and edit a 3-7 minute short film in 48 hours. Edit shorts on Final Cut Pro. Films honored with Best Editing, Audience Favorite, and Best Film awards in separate competitions.

Academic Presentations

Griffith, M (2017), Fully Integrating Distance Students Into Traditional Face-To-Face Classes With A Low-Cost Telerobotics Platform. Scheduled to be presented at the Online Learning Consortium - Accelerate Conference (November 2017)

Campion M., Tobin B., Mayfield C., Wiechman W, Kiscaden, C., **Griffith M.**, Sid E., & Chang W. (2012). A Showcase Of Digital Tablet Initiatives At Wgea Schools. Presented At Western Group On Educational Affairs 2012 Conference, Asilomar, Ca.

Ellinwood, K., **Griffith, M.**, Gordon, H. (2012). An Online Tool for Organizing Self-Regulatory Learning and Promoting Metacognitive Engagement in Problem-Solving. Presented at Western Group on Educational Affairs 2012 Conference, Asilomar, CA.

Professional Presentations

Master Chef - Technology Test Kitchen. "Save The Robot! -Or- Using Computational Thinking As A Method For Course Design". Online Learning Consortium - Accelerate Conference (November 2017)

Presenter, "Thinking Like a Robot: Applying Computational Thinking Techniques to Developing Online Courses" University of Arizona IT Summit (October 2017)

Master Chef - Technology Test Kitchen. "Serving Distance Students in the Face-to-Face Classroom" and "Cooking with littleBits: Active Inquiry & the Engineering Design Process". Online Learning Consortium - Accelerate Conference (November 2016)

Presenter, "Using an inexpensive telerobotics platform to support distance students in traditional face-to-face classes and classrooms" UA IT Summit (October 2016)

Presenter, "Lights! Camera! Teach! Using Video to Build Student-Instructor Interactions in Online Courses". UA IT Summit (October 2015)

Presenter, iPads in Medical Education and the Clinical Enterprise. Office of Medical Student Education (December 2013, November 2012)

Presenter, iPad apps for the 3rd Year Med Student. Transitions Block, College of Medicine (June 2013)

Presenter, Building Interactive Learning Modules with iBooks Author. Associated Student Unions Bookstore Tech Tuesday (April 2012).

Presenter, Teaching and Learning with Apple's iPad. College of Medicine Faculty Development Workshop (October 2011).

Presenter, iPads in Class. University of Arizona Learning and Teaching with Technology Group (September 2011).

Presenter, Automated Podcasting. University of Arizona Learning and Teaching with Technology Group (August 2011).

Presenter, Drupal Module Development. UA Web Developers Group (September 2011).

Teaching Experience

University of Arizona South - Adjunct Faculty

ETCV 401 - Introduction to Human-Computer Interaction

ETCV 403 - Principles of Web Design

University of Arizona South Continuing Education.

Web Design: HTML, CSS & Javascript.

University of Arizona Outreach College

Dynamic Websites using PHP & MySQL

Interactive Websites using Javascript

Advanced Adobe Flash: Actionscript

Pima Community College - Adjunct Faculty

CSC 100: Introduction to Computer Science

CSC 121: WWW Publishing & Support

Skills

Web Development: Experienced PHP/MySQL developer with a focus on sites using the Drupal content management framework. Fluent in HTML, CSS, and JavaScript.

Video Production: Editing experience using Final Cut Pro and iMovie. ENG-style videographer with experience in SD and HD. Technical Director (3-cameras). ENG lighting and basic audio engineering skills. Experienced with compression and transcoding of video for online delivery.

Angela Gunder

Curriculum Vitae

1077 N Highland Ave
Tucson, AZ 85721
P | 520.775.1435
agunder@email.arizona.edu
<http://odl.arizona.edu>

9009 N Clover Way
Tucson, AZ 85743
P | 703.505.0195
angela.gunder@gmail.com
<http://angelagunder.com>

EDUCATION

- | | |
|------|--|
| 2021 | Ph.D. Language, Reading and Culture, College of Education
The University of Arizona, Tucson, AZ |
| 2012 | M.Ed. Education Technology, Mary Lou Fulton School of Education
Arizona State University, Tempe, AZ |
| 2010 | Graduate coursework (18 credit hours) in Computer Arts
Academy of Art University, San Francisco, CA |
| 2003 | B.S. Computer Science — Minor: Fine Art
Fordham University, Bronx, NY |

EMPLOYMENT

- | | |
|--------------|--|
| 2018—Present | Director of Instructional Design & Curriculum Development, Office of Digital Learning
University of Arizona, Tucson, AZ |
| 2016—2018 | Associate Director of Digital Learning & Instructional Design, Office of Digital Learning
University of Arizona, Tucson, AZ |
| 2014—2016 | Senior Instructional Designer, Office of Digital Learning
University of Arizona, Tucson, AZ |
| 2012—2014 | Instructional Designer and Instructor, Extended Learning Institute
Northern Virginia Community College, Fairfax, VA |
| 2010—2012 | Webmaster and Adjunct Lecturer, Barrett, The Honors College
Arizona State University, Tempe, AZ |
| 2006—2010 | Director for Web-Based Communications
The City College of New York, New York, NY |

2005—2006	Adjunct Instructor, Communication Design Northern Virginia Community College, Alexandria, VA
2005—2006	Webmaster, Alexandria Campus Northern Virginia Community College, Alexandria, VA
2003—2005	Web and Graphic Designer, Technical Applications Center Northern Virginia Community College, Annandale, VA

Awards and Honors

2018	<p>OLC Effective Practice Award: #SquadGoalsNetwork - Remixing the Personal Learning Network <i>The Annual OLC Quality Scorecard Effective Practice Awards recognize and honor innovation in online learning around the use and implementation of the Quality Scorecard.</i> Online Learning Consortium</p> <p>Distinguished Service Award <i>Reserved as MERLOT's highest honor, the recipient of this award exemplifies the vision that brings MERLOT members together to create the MERLOT Community</i> MERLOT: Multimedia Educational Resource for Learning and Teaching Online</p> <p>Peer Reviewer Extraordinaire <i>More than 15 peer reviews in a calendar year</i> MERLOT: Multimedia Educational Resource for Learning and Teaching Online</p> <p>Editorial Board House Cup <i>Most peer reviews, triaged materials and contributions of any MERLOT Board</i> MERLOT: Multimedia Educational Resource for Learning and Teaching Online</p>
2017	<p>Peer Reviewer Extraordinaire <i>More than 15 peer reviews in a calendar year</i> MERLOT: Multimedia Educational Resource for Learning and Teaching Online</p>
2016	<p>OLC Effective Practice Award: The Technology Test Kitchen <i>The Annual OLC Quality Scorecard Effective Practice Awards recognize and honor innovation in online learning around the use and implementation of the Quality Scorecard.</i> Online Learning Consortium</p> <p>Innovative Use of MERLOT Award <i>Individual, department, or program that demonstrates novel, comprehensive, or creative usage and/or application of MERLOT materials and services</i> MERLOT: Multimedia Educational Resource for Learning and Teaching Online</p> <p>Peer Reviewer Extraordinaire <i>More than 15 peer reviews in a calendar year</i> MERLOT: Multimedia Educational Resource for Learning and Teaching Online</p>

	Editorial Board House Cup <i>Most peer reviews, triaged materials and contributions of any MERLOT Board</i> MERLOT: Multimedia Educational Resource for Learning and Teaching Online
2015	Peer Reviewer Extraordinaire <i>More than 15 peer reviews in a calendar year</i> MERLOT: Multimedia Educational Resource for Learning and Teaching Online
	Editorial Board House Cup <i>Most peer reviews, triaged materials and contributions of any MERLOT Board</i> MERLOT: Multimedia Educational Resource for Learning and Teaching Online
2014	Peer Reviewer Extraordinaire MERLOT: Multimedia Educational Resource for Learning and Teaching Online
2013	Peer Reviewer Extraordinaire MERLOT: Multimedia Educational Resource for Learning and Teaching Online

Publications and Grants

Publications, Chapters and Articles

Musgrove, A., Gunder, A., Knott, J., Tomsic, F., Banner, P., Melton, R., Shah-Nelson, C., Goodrich, D. Technology-enhanced Exploratory Installations to Support Constructivist Professional Development: The Technology Test Kitchen. In: *Handbook of Research on Human Development in the Digital Age*. Bryan, V., Musgrove, A., Powers, J., ed. IGI Global. 2017 April.

Musgrove, A., Tomsic, F., Knott, J., Goodrich, D., Gunder, A. A Kitchen for Tech. *EdTechDigest*. 2016 September.

Steele, J. and Gunder, A. Ready to Launch: Re-Envisioning the Preparation of Students for Online Learning. *The Evollution*. 2016 June.

Grants

2016–2017	STARTALK. “eTower: OER for Chinese Language and Cultural Proficiency.” Director of Technology Applications. Annual Direct Costs: \$90,000.
2016–2017	The University of Arizona Information Technology Student Advisory Board. “UA Online Course Design Bootcamp.” Project Lead. Annual Direct Costs: \$15,000.
2015–2016	STARTALK. “eTower: OER for Chinese Language and Cultural Proficiency.” Director of Technology Applications. Annual Direct Costs: \$25,000.
2009–2016	STARTALK. “NOVASTARTALK: Technology-Enhanced Language Learning Professional Development.” Director of Technology, Instructor and Webmaster. Annual Direct Costs: \$100,000.

Committees and Service

2018–2019

Virtual Engagement Co-Chair. 2019 OLC Innovate Conference in Denver, CO.

Courseware in Context Framework Executive Committee Member. Digital Learning Solutions Network (Funded by the Bill and Melinda Gates Foundation).

Co-convener. 2018 DETA Research Summit in Tucson, AZ. National Research Center for Distance Education and Technological Advancements (DETA) at the University of Wisconsin – Milwaukee (Funded by the U.S. Department of Education Fund for the Improvement of Postsecondary Education).

Co-Convener. 2019 Shaping EDU Unconference on Dreamers, Doers, and Drivers Shaping the Future of Learning in Phoenix, AZ.

Advisory Board. Synthesis, Integration and Design Workshop for Studio-Based Learning (SBL) Environments (Funded by the National Science Foundation - Grant No. #1825076).

Conference Steering Committee. 2018 OLC Accelerate Conference in Orlando, Florida.

Co-Chair. Women in Digital Learning Leadership. 2018 OLC Accelerate Conference in Orlando, Florida.

Co-Chair and Creator. Speed Networking Lounge. 2018 OLC Accelerate Conference in Orlando, Florida.

2017–2018

Conference Chair. 2018 OLC Innovate Conference in Nashville, TN.

Co-Chair. Women in Digital Learning Leadership. 2018 OLC Innovate Conference in Nashville, TN.

Co-Convener. 2018 Shaping EDU Unconference on Dreamers, Doers, and Drivers Shaping the Future of Learning in Phoenix, AZ.

Innovation Learning Project Team Member. The University of Arizona.

OER Action Committee. The University of Arizona.

Conference Steering Committee. 2017 OLC Accelerate Conference in Orlando, FL.

Co-Chair. Women in Digital Learning Leadership. 2017 OLC Accelerate Conference in Orlando, Florida.

Institutional Chair. 2017 OLC Collaborate in Tucson, AZ.

Organizer/Creator. 2017 UA Tech Crawl in Tucson, AZ.

Innovation Learning Project Team Member. The University of Arizona.

OER Action Committee. The University of Arizona.

	Associate Editor, Teacher Education. MERLOT Multimedia Educational Resource for Learning and Online Teaching.
	Peer Reviewer, Teacher Education. MERLOT Multimedia Educational Resource for Learning and Online Teaching.
2016–2017	Conference Program Chair. 2017 OLC Innovate Conference in New Orleans, LA.
	Co-Chair of the Community College Summit. 2017 OLC Innovate Conference in New Orleans, LA.
	Innovation Learning Project Team Member. The University of Arizona.
	OER Action Committee. The University of Arizona.
	Associate Editor, Teacher Education. MERLOT Multimedia Educational Resource for Learning and Online Teaching.
	Peer Reviewer, Teacher Education. MERLOT Multimedia Educational Resource for Learning and Online Teaching.
2015–2016	Conference Steering Committee. 2016 OLC Accelerate Conference in Orlando, FL.
	Co-Chair of the Technology Test. 2016 OLC Accelerate Conference in Orlando, FL.
	Chair and Creator of the Iron Chef Battles. 2016 OLC Accelerate Conference in Orlando, FL.
	Conference Steering Committee. 2016 OLC Innovate Conference in New Orleans, LA.
	Co-Chair and Creator of the Innovation Labs. 2016 OLC Innovate Conference in New Orleans, LA.
	Associate Editor, Teacher Education. MERLOT Multimedia Educational Resource for Learning and Online Teaching.
	Peer Reviewer, Teacher Education. MERLOT Multimedia Educational Resource for Learning and Online Teaching.
2014–2015	Co-Chair of the Technology Test Kitchen. 21st Annual Online Learning Consortium International Conference in Orlando, FL.
	Track Chair, Technology Test Kitchen. 8th Annual Emerging Technologies for Online Learning International Symposium in Dallas, TX.
	Social Media Committee (Ex Officio). Northeast Conference on the Teaching of Foreign Languages.
	Ignite NOVA Committee. Northern Virginia Community College, Achieving the Dream Core Team. Planned and facilitated Ignite NOVA event.
	Web Advisory Task Force Committee Member. Northern Virginia Community College.

	Associate Editor, Teacher Education. MERLOT Multimedia Educational Resource for Learning and Online Teaching.
	Peer Reviewer, Teacher Education. MERLOT Multimedia Educational Resource for Learning and Online Teaching.
2013–2014	Track Chair, Innovative Media and Tools. 7th Annual Emerging Technologies for Online Learning International Symposium in Dallas, TX.
	Associate Editor, Teacher Education. MERLOT Multimedia Educational Resource for Learning and Online Teaching.
	Peer Reviewer, Teacher Education. MERLOT Multimedia Educational Resource for Learning and Online Teaching.
2011–2012	License Holder and Committee Chair, TEDxBarrettHonorsCollege. Planned and facilitated TEDxBarrettHonorsCollege events for TEDWomen 2011, TEDWomen 2012 and TED 2012: Full Spectrum. Consultant for TEDxBHCPoly, TEDxBHCWest and TEDxBHCDowntown events for TED 2012: Full Spectrum.

Presentations

Invited Presentations and Panels

Ciabocchi, E., **Gunder, A.**, Niemiec, M., Moskal, P., Cancilla, D. (2018, Nov 15). Journey Into Leadership. Featured panel at 2018 OLC Accelerate in Orlando, FL.

Gunder, A., Knott, J., Russell, C., Stewart, J., Torrence, M. (2018, Nov 13). We Can Be Heroes: Applying the Hero's Journey as a Framework for Online Course Design. Invited pre-conference workshop at 2018 OLC Accelerate in Orlando, FL.

Mauet, S., Kurtin, A., Gunder, A., Thomas, D., Nichols, J. (2018, October 20). Design Thinking. Featured presentation at the 4th Annual Women Techmakers Tucson Hackathon in Tucson, AZ.

Gunder, A., Mauet, S., Kurtin, A., Nichols, J. (2017, Sep 30). [Design Thinking](#). Featured presentation at the 3rd Annual Women Techmakers Tucson Hackathon in Tucson, AZ.

Sessions and Panels Moderated

Rettler-Pagel, T., **Gunder, A.**, Ives, K., Dowden, L., Ciabocchi, E., Bray, N. (2018, Nov 15). The Confidence Crisis: Impostor Syndrome and Online Leaders. Panel moderator at 2018 OLC Accelerate in Orlando, FL.

Buckner, M., **Gunder, A.** (2018, November 1). Instructional Design Community Group: Weaving Digital Literacy into the Instructional Design Process. Unconference session moderator at 2018 Educause Annual Meeting in Denver, CO.

Gunder, A., Buckner, M. (2018, October 23). Our Stories will Save Us: Creating Classroom Heroes with Storytelling Practices. Unconference Session moderator at WCET Annual Meeting in Portland, OR.

Buckner, M., Riddick, K., Shellgren, M., Steele, J., Knott, J., **Gunder, A.** (2018, April 19). A Town Hall on Diversity and Inclusion in Digital Education and Student Success. Panel at 2018 OLC Innovate Conference in Nashville, TN.

Thomas, S., Kimen, Shel., Buckner, M., Melo, M., Hoisington, C., **Gunder, A.**, Knott, J. (2018, April 18). Campfire Stories. Keynote moderator at 2018 OLC Innovate Conference in Nashville, TN.

Gunder, A., Buckner, M., Del Casino, V., Chorba, K., Schmidt, N., Moser, J. (2017, Nov 15). Graduate Teaching Assistant Online Course Design Boot Camp: Peer-To-Peer Onboarding and Training. Panel at OLC Accelerate in Orlando, FL.

Bankston Bares, S., Broschak, J., Krasnow Waterman, K., **Gunder, A.** (2017, Oct 16). Why Women's Entrepreneurship Matters for Southern Arizona Growth. Panel at The University of Arizona Social Impact Summit in Tucson, AZ.

Pacansky-Brock, M., Shean, A., Brown, M., Adkins, M., Dunn, A., **Gunder, A.** (2018, April 5). Lightning Talks. Keynote moderator at 2018 OLC Innovate Conference in Nashville, TN.

Conference Presentations, Panels and Poster Sessions

Torrence, M., **Gunder, A.** (2018, Nov 16). Don't Fence Me In! Breaking the Boundaries of the Classroom with Mixed Reality (MR). Poster session at 2018 OLC Accelerate in Orlando, FL.

Straight, R., **Gunder, A.**, Stewart, J., King de Ramirez, C., Thompson, K., Pizzo, J. (2018, Nov 16). And We're Live! A Rough Guide on Academic Podcasting. Presentation at 2018 OLC Accelerate in Orlando, FL.

Smith, J., Romanoski, M., Russell, C., **Gunder, A.** (2018, Nov 15). App Smackdown! A Battle Royale of Education Technology. Presentation at 2018 OLC Accelerate in Orlando, FL.

Moore, J., **Gunder, A.** (2018, Nov 15). Take a Sip of MERLOT: Building Community and Collegiality Through Peer Review and OER. Presentation at 2018 OLC Accelerate in Orlando, FL.

Shah-Nelson, C., **Gunder, A.**, Stewart, J., Romanoski, M., Knott, J., Scragg, B., Straight, R. (2018, Nov 14). With a Little Help from My Friends: The Power of the PLN. Presentation at 2018 OLC Accelerate in Orlando, FL.

Stoffle, C., Pagowski, N., **Gunder, A.**, Mery, Y. New Information Literacy Certificate at the University of Arizona School of Information: How, Why, and What?. Presentation at the 2018 AZLA Annual Conference in Mesa, AZ.

Steele, J., **Gunder, A.** (2018, October 18). Making connections across the curriculum: Paired general education courses for online adult learners. Presentation at Online Learning 2018 in Toronto, CA.

Knott, J., **Gunder, A.** (2018, May 9). Methods in Course Design: Storytelling, Ethnography, and the Hero's Journey. Presentation at Michigan State University 2018 Teaching and Learning Spring Conference in Lansing, MI.

Gunder, A., Russell, C., Knott, J. (2018, April 20). I Need a Hero: Incorporating Monomyth and Narrative in Online Course Design. Presentation at 2018 OLC Innovate Conference in Nashville, TN.

Moore, J., **Gunder, A.**, Guenter, C., Knott, J. (2018, April 19). Campfire Stories: Approaches For (Design Thinking) Impactful Change. Poster session at 2018 OLC Innovate Conference in Nashville, TN.

Moore, J., Guenter, C., **Gunder, A.**, Lawrence, E., Bennett, B. (2018, April 18). Smart Phones? Smarter Classrooms?. Presentation at 2018 OLC Innovate Conference in Nashville, TN.

Scragg, B., **Gunder, A.**, Shah-Nelson, C., Knott, J., Riddick, K., Stewart, J., Moore, J., Buban, J., Sonka, K., Joosten, T. (2018, April 18). #SquadGoals - Creating Collaborative Professional Networks That Rock. Panel at 2018 OLC Innovate Conference in Nashville, TN.

Gunder, A., Buckner, M. (2017, Nov 17). [Assessment Through a Digital Lens: Using Narrative and Digital Storytelling in the Online Classroom](#). Presentation at OLC Accelerate in Orlando, FL.

Moore, J., **Gunder, A.** (2017, Nov 16). Professional Development with MERLOT: Become a Peer Reviewer. Poster session at OLC Accelerate in Orlando, FL.

Gunder, A., Buckner, M. (2017, Nov 16). Becoming the First Creative Campus of the West. Poster session at OLC Accelerate in Orlando, FL.

Gunder, A., Holt, K.. (2017, Oct 24). Creating Dynamic Video Content with Playposit. Presentation at The University of Arizona IT Summit in Tucson, AZ.

Gunder, A., Holt, K., Romanoski, M., Garrigan, A. (2017, Oct 24). Emerging Technology to Engage Learners. Presentation at The University of Arizona IT Summit in Tucson, AZ.

Rifkin, E., **Gunder, A.**, Brinkerhoff, M. (2017, Oct 20). Learning the Hard Way: Adventures Integrating Technology into the Classroom. Panel at The TENWEST Festival in Tucson, AZ.

Moore, J., Bennett, B., Guenter, C., **Gunder, A.**, Lawrence, E., Zenon, E., Tenzer, L. (2017, Apr 5) [Online Tools with Staying Power: What Have We Discovered](#). Presentation at 2017 OLC Innovate in New Orleans, LA.

Gunder, A., Steele, J., Romanoski, M. (2017, Apr 5) Pathways to Student Success: Adaptive Courseware to Support Students in Gateway Courses. Poster session at 2017 OLC Innovate in New Orleans, LA.

Gunder, A., King de Ramirez, C., Franklin, L. (2017, Apr 6) [Beyond the Brick and Mortar: Creating Virtual Study Centers with Open Technology Tools](#). Poster session at 2017 OLC Innovate in New Orleans, LA.

Gunder, A., Knott, J., Scragg, B. (2017, Apr 6) [The Connected Cohort: Redefining Mentorship and Professional Development with Innovative Cross-Institutional Collaborations](#). Poster session at 2017 OLC Innovate in New Orleans, LA.

Russell, C., **Gunder, A.**, Knott, J. (2017, Apr 7) [Leveraging Narrative in Online Course Design: Storytelling, Ethnography, And The Hero's Journey](#). Presentation at 2017 OLC Innovate in New Orleans, LA.

Steele, J. and **Gunder, A.** (2017, Feb 24) Improving Student Outcomes through Cross-Curricular Collaboration and Adaptive Learning. Presentation at AAC&U Network for Academic Renewal Conference: General Education and Assessment – Design Thinking for Student Learning in Phoenix, AZ.

Tomsic, F., Banner, P., Shah-Nelson, C., **Gunder, A.**, Musgrove, A., Knott, J., Melton, R., Goodrich, D. (2016, Nov 18). The Technology Test Kitchen. Presentation at 2016 OLC Accelerate in Orlando, FL.

Gunder, A., Ball, V. and Nemeroff, A. (2016, Nov 17). The Design Thinking Studio: Use Cases and Practical Methods. Presentation at 2016 OLC Accelerate in Orlando, FL.

Gunder, A., Buckner, M., Steele, J., Del Casino, V. (2016, Nov 17). Building a Culture of Cross-Institutional Collaboration: Stories, Strategies and Effective Practices. Panel at 2016 OLC Accelerate in Orlando, FL.

Gunder, A. (2016, Nov 17). Tour the Test Kitchen with the TTK Chefs. Presentation at 2016 OLC Accelerate in Orlando, FL.

Moore, J., **Gunder, A.,** Tenzer, L. (2016, Nov 16). Waves of Innovation: The Evolution of Enduring Tools and Practices. Presentation at 2016 OLC Accelerate in Orlando, FL.

Tan, D., **Gunder, A.,** Chi, S., Picard, S. (2016, Nov 12) eTower: A CALL for Increasing Chinese Language and Cultural Proficiency. Virtual Presentation at the Michigan State University 2nd Online Chinese Teaching Forum and Workshop.

Steele, J., **Gunder, A.,** Romanoski, M. (2016, Nov 10). Ready to Launch: Effective Practices and Emerging Technology for Onboarding, Collaboration and Personalized Learning Online. Presentation at The University of Arizona SAEM/AISS Symposium in Tucson, AZ.

Gunder, A. and Ball, V. (2016, Nov 10). The Design Thinking Studio: Use Cases and Practical Methods. Presentation at The University of Arizona SAEM/AISS Symposium in Tucson, AZ.

Gunder, A., Holt, K., Romanoski, M., Strahle, J. (2016, Nov 10). Leveraging Emerging Technology to Engage Digital Natives. Presentation at The University of Arizona SAEM/AISS Symposium in Tucson, AZ.

Gunder, A., Straight, R. (2016, Oct 18). Innovative Learning Projects: Promoting Leading-Edge Opportunities in Higher Education. Poster session at The University of Arizona IT Summit in Tucson, AZ.

Gunder, A., Holt, K., Romanoski, M., Strahle, J. (2016, Oct 18). Leveraging Emerging Technology to Engage Digital Natives. Presentation at The University of Arizona IT Summit in Tucson, AZ.

Tan, D., Chi, S., **Gunder, A.,** Picard, S. (2016, Oct 15). A Trip to China through NOVA STARTALK eTower: A Research-Based and Literacies-Focused OER. Virtual Presentation at the STARTALK 2016 Fall Conference in Atlanta, GA.

Gunder, A. and Scragg, B. (2016, Sep 22). Using Design Thinking to Build Team Culture + Essential Ingredients for Experiential and Adaptive Learning. Presentation at Training Magazine's Online Learning Conference 2016 in Chicago, Illinois.

Russell, C. and **Gunder, A.** (2016, Apr 21) The Hero's Journey: Leveraging Narrative in Online Course Design. Presentation at 2016 OLC Innovate in New Orleans, LA.

Gunder, A., Kilgore, W., Prusko, P., Eshleman, K., Knott, J. (2016, Apr 21) Innovation Station: A Lively Conversation on Fostering Pedagogical Breakthroughs. Panel at 2016 OLC Innovate in New Orleans, LA.

Moore, J., Bennett, B., Guenter, C., **Gunder, A.,** Lawrence, E., Zenon, E., Tenzer, L. (2016, Apr 20) Boundless Collaboration: Breaking the Barriers of Communication within Personal Learning Networks. Presentation at 2016 OLC Innovate in New Orleans, LA.

Gunder, A., Knott, J., Musgrove, A., Tomsic, F. (2016, Mar 9) The Technology Test Kitchen: Learning by Doing. Presentation at SXSWedu 2016 in Austin, TX. (Recording)

Steele, J. and **Gunder, A.** (2015, Nov 3). [LaunchPad: A Digital Onboarding Experience](#). Presentation at The University of Arizona SAEM/AISS Symposium: #MeetGenZ in Tucson, AZ.

Gunder, A. and Thomas, D. (2015, Nov 3). [Leveraging Emerging Technology to Engage Digital Natives](#). Presentation at The University of Arizona SAEM/AISS Symposium: #MeetGenZ in Tucson, AZ.

Franklin, L. and **Gunder, A.** (2015, Oct 16). Technology Tools to Engage All Learners. Presentation at the STARTALK 2015 Fall Conference in Orlando, FL.

Franklin, L. and **Gunder, A.** (2015, Oct 16). NOVASTARTALK Showcase. Poster session at the STARTALK 2015 Fall Conference in Orlando, FL.

Gunder, A., Tan, D., and Chi, S. (2015, Oct 16). eTower: An OER for Chinese Language and Cultural Proficiency. Presentation at the STARTALK 2015 Fall Conference in Orlando, FL.

Musgrove, A., **Gunder, A.**, and Goodrich, D. (2015, Oct 16). Recipe Swap with the Iron Chefs. Presentation at the 21st Annual Online Learning Consortium International Conference in Orlando, FL.

Moore, J., and **Gunder, A.** (2015, Oct 15). Become a Peer Reviewer. Presentation at the 21st Annual Online Learning Consortium International Conference in Orlando, FL.

Musgrove, A., **Gunder, A.**, and Goodrich, D. (2015, Oct 14). [App Smashing with the Iron Chefs](#). Presentation at the 21st Annual Online Learning Consortium International Conference in Orlando, FL.

Melton, R. and **Gunder, A.** (2015, April 24). EdTech Entrepreneurship Panel. Presented at the 8th Annual Emerging Technologies for Online Learning International Symposium in Dallas, TX.

Moore, J., Guenter, C., Bennett, B., Blackman, R. and **Gunder, A.** (2015, April 23). Create, Educate, Brainstorm: Conquering the Collaboration Conundrum. Presented at the 8th Annual Emerging Technologies for Online Learning International Symposium in Dallas, TX.

Moore, J., Honig, C., **Gunder, A.**, Restauri, S. and Swift, C. (2015, April 23). Become a Peer Reviewer. Presented at the 8th Annual Emerging Technologies for Online Learning International Symposium in Dallas, TX.

Franklin, L. and **Gunder, A.** (2015, May 9). Technology Tools to Engage the 21st Century Learner. Presentation at the STARTALK 2015 Spring Conference in Denver, CO.

Franklin, L. and **Gunder, A.** (2014, May 2). [Engaging Digital Natives with Free Technology](#). Presentation at the STARTALK 2014 Spring Conference in Austin, TX.

Moore, J., Wicks, D., Guenter, C., Blackman, R. and **Gunder, A.** (2014, April 11). [Great Tools That We Use: The MERLOT Teacher Education Editorial Board](#). Presented at the 7th Annual Emerging Technologies for Online Learning International Symposium in Dallas, TX.

Gunder, A. and Franklin, L. (2014, April 11). [Engaging Digital Natives with Free Technology](#). Presented at the 7th Annual Emerging Technologies for Online Learning International Symposium in Dallas, TX.

Moore, J., Honig, C., **Gunder, A.**, Restauri, S. and Swift, C. (2014, April 9). Become a Peer Reviewer. Presented at the 7th Annual Emerging Technologies for Online Learning International Symposium in Dallas, TX.

Gunder, A. and Orsatti, S. (2014, March 30). [Digital Storytelling with Online and Mobile Tools](#). Presented at the Northeast Conference on the Teaching of Foreign Languages in Boston, MA.

Franklin, L. and **Gunder, A.** (2013, October 19). [Engaging Digital Natives with Free Technology](#). Presentation at the STARTALK 2013 Fall Conference in Portland, OR.

Franklin, L. and **Gunder, A.** (2013, September 27). [Engaging Digital Natives with Free Technology](#). Presentation at the Fall 2013 Instructional Technology Summit in Weyers Cave, VA.

Franklin, L. and **Gunder, A.** (2013, April 12). [Engagement Required: Creating Interactive Webinars for the 21st Century Learner](#). Presentation at the 6th Annual Emerging Technologies for Online Learning International Symposium in Las Vegas, NV.

Franklin, L. and **Gunder, A.** (2013, March 1). MERLOT 2013. Presentation at the Spring 2013 Instructional Technology Summit in Manassas, VA.

Bruhn, K., Roberts, W., Southergill, K. and **Gunder, A.** (2011, October 22). The Barrett Brand: Integrating a Comprehensive Honors Student Experience. Presentation at the 46th Annual Conference of the National Collegiate Honors Council in Phoenix, AZ.

Franklin, L., Simpson, C. and **Gunder (Franklin), A.** (2006, October 25). Troubleshooting the Blend in Your Hybrid Course. Presentation at The League for Innovation Conference on Information Technology in Charlotte, NC.

Peck, N. and **Gunder (Franklin), A.** (2006, April). [Designing Effective Presentations: Tools for Springing Your Students from "Death by PowerPoint."](#) Presentation at the VCCS New Horizons Conference in Roanoke, VA.

Franklin, L., Simpson, C. and **Gunder (Franklin), A.** (2006, February). Troubleshooting the Blend in Your Hybrid Course. Presentation at the ITC e-Learning Conference in Savannah, GA.

Williams, D. and **Gunder (Franklin), A.** (2005, October). Web Governance that Works. Presentation at the VCCS Learning Resource Services Peer Group Meeting in Roanoke, VA.

Workshops Facilitated

Gunder, A. (2018, December 12-15). Exploring Interactive Video Tools. Facilitated online workshop for the Online Learning Consortium.

Shin, H., Jung, Y., Haley, M. (2018, Nov 12). How to Use K-pop in Korean Language Classrooms? Produced webinar for the George Mason University STARTALK Grant online.

Assumpcao, C., Agnew, A., **Gunder, A.**, Thomas, D., Becker, S. (2018, September 27). [Building Constellations of Innovation](#). Webinar panelist for Shaping EDU LIVE.

Gunder, A. (2018, August 8-10). Exploring Interactive Video Tools. Facilitated online workshop for the Online Learning Consortium.

Gunder, A. (2018, May 16-18). Exploring Interactive Video Tools. Facilitated online workshop for the Online Learning Consortium.

Gunder, A. (2018, May 7-13). Introduction to Screencasting Tools. Facilitated online workshop for the Online Learning Consortium.

Al-Qaisi, W., Majid, S., Haley, M., Eqab, S. (2018, March 19). Online Teaching of Arabic. Produced virtual conference for the George Mason University - Qatar Foundation Grant online.

Kang, J. (2017, Nov 14) How Do You Know? Assessment Practices in the Korean Language Learning Classroom. Produced webinar for the George Mason University STARTALK Grant online.

Franklin, L., **Gunder, A.** (2017, Oct 16) Emerging Technology for Assessment in the Korean Classroom. Presented and produced webinar for the George Mason University STARTALK Grant online.

Gunder, A. (2017, Oct 4-6). Exploring Interactive Video Tools. Facilitated online workshop for the Online Learning Consortium.

Gunder, A. (2017, Aug 9-11). Exploring Interactive Video Tools. Facilitated online workshop for the Online Learning Consortium.

Gunder, A. (2017, Apr 12-14). Interactive Screencasting Tools. Facilitated online workshop for the Online Learning Consortium.

Gunder, A. (2016, Feb 8 – 10). Creating Multimedia Introductions. Facilitated online workshop for the Online Learning Consortium.

Haley, M., Esa, M., Eqab, S., Ibrahim, M. and Al-Khatib, G. (2016, Dec 8) GMU-QFI Virtual Conference. Produced virtual conference for the George Mason University - Qatar Foundation Grant online.

Kang, J. (2016, Nov 2) Engaging all Students Through Interactive Planning and Comprehensible Input. Produced webinar for the George Mason University STARTALK Grant online.

Haley, M. (2016, October 6) Using Brain-Compatible Technology Tools for Effective Class Management and Project-Based Learning. Produced webinar for the NOVASTARTALK Fall 2016 Webinar Series online.

Gunder, A. (2016, July 13 – 15). Interactive Screencasting Tools. Facilitated online workshop for the Online Learning Consortium.

Hashem, I. (2016, June 2) Engaging all Students Through Interactive Planning and Comprehensible Input. Produced webinar for the George Mason University - Qatar Foundation Grant online.

Gunder, A. (2016, May 18 – 20). Exploring Interactive Video. Facilitated online workshop for the Online Learning Consortium.

Gunder, A. (2016, Feb 10 – 12). Creating Multimedia Introductions. Facilitated online workshop for the Online Learning Consortium.

Haley, M. (2015, October 8) Brain-Friendly Apps. Produced webinar for the NOVASTARTALK Fall 2015 Webinar Series online.

Gunder, A. (2015, June 12). Reframing Technology for Today's Millennials. Presented at the GMU STARTALK Summer Institute in Fairfax, VA.

Gunder, A., and Smith, J. (2015, May 26). A Taste of Quality Matters. Presented at The University of Arizona Spanish and Portuguese Department Graduate Training in Tucson, AZ.

Gunder, A. (2015, May 26). A Sip of MERLOT. Presented at The University of Arizona Office of Institutional Assessment Intro to Teaching Online Mini-Course in Tucson, AZ.

Gunder, A. (2015, March 24). A Sip of MERLOT. Presented at The University of Arizona Office of Institutional Assessment Intro to Teaching Online Mini-Course in Tucson, AZ.

Gunder, A. and Orsatti, S. (2014, October 13). [Digital Storytelling with Online and Mobile Tools](#). Presented at the Jackson Township School District Faculty In-Service in Jackson, NJ.

Gunder, A. and Skinner, J. (2014, July 9 – July 22). Applying the QM Rubric. Co-facilitated Independent Quality Matters workshop for Northern Virginia Community College online.

Franklin, L., Esa, M., Chi, S., Shigehisa, T., and **Gunder, A.** (2014, June 30-July 11). Co-facilitated the NOVASTARTALK Summer Technology Workshops in Arlington, VA.

Hatheway, W. and **Gunder, A.** (2014, June 4-June 17). Applying the QM Rubric. Co-facilitated Independent Quality Matters workshop for Northern Virginia Community College online.

Gunder, A. and Skinner, J. (2014, April 6 – April 27). ELI Course Review Workshop. Co-facilitated online workshop on the process of evaluating the quality of online course design.

Gunder, A. and Zhu, R. (2014, January 20 – February 2). Preparing Student Learning Objectives. Co-facilitated workshop for the VCCS TOTAL Topics in Online Teaching and Learning Workshop Series online.

Haley, M. (2013, October 24) Incorporating MindMeister and BlendSpace in Today's Brain-Compatible Classroom. Produced webinar for the NOVASTARTALK Fall 2013 Webinar Series online.

Hitchcock, K. and **Gunder, A.** (2013, October 16-29). Applying the QM Rubric. Co-facilitated Independent Quality Matters workshop for Northern Virginia Community College online.

Gunder, A. and Zhu, R. (2013, September 16 – 29). Preparing Student Learning Objectives. Co-facilitated workshop for the VCCS TOTAL Topics in Online Teaching and Learning Workshop Series online.

Gunder, A. and Zhu, R. (2013, July 8-21). Preparing Student Learning Objectives. Co-facilitated workshop for the VCCS TOTAL Topics in Online Teaching and Learning Workshop Series online.

Franklin, L., Esa, M., Chi, S., Shigehisa, T., **Gunder, A.** and Elhanafi, E. (2013, July 1-12). Co-facilitated the NOVASTARTALK Summer Technology Workshops in Arlington, VA.

Franklin, L., Esa, M., Orsatti, S. and **Gunder, A.** (2013, June 4-20). How to Build an Engaging Webinar. Co-facilitated the NOVASTARTALK Faculty Developer Webinar Series online.

Gunder, A. (2013, March 10). Web 2.0 Technology to Boost Communication in the World Language Classroom. Facilitated workshop at the Northeast Conference on the Teaching of Foreign Languages in Baltimore, MD.

Haley, M. (2012, October 11) Fun Ways to Use VoiceThread with Brain-Compatible Learning. Produced webinar for the NOVASTARTALK Fall 2012 Webinar Series online.

Franklin, L., Esa, M., Chi, S., Shigehisa, T., **Gunder, A.** and Elhanafi, E. (2012, July 2-13). Co-facilitated the NOVASTARTALK Summer Technology Workshops in Arlington, VA.

Gunder, A., Thompson, J. and Viles, R. (2012, June-August). Co-facilitated the Barrett, The Honors College at Arizona State University Professional Development Workshop Series in Phoenix, AZ.

Gunder, A. and Franklin, L. (2012, February 3). Social Media and Collaborative Tools for Teaching. Co-facilitated the NOVASTARTALK Fall 2011 Webinar Series online.

Gunder, A. and Franklin, L. (2012, January 13). Audio and Video Studio on a Dime. Co-facilitated the NOVASTARTALK Fall 2011 Webinar Series online.

Gunder, A. and Franklin, L. (2011, November 29). Web Tools for World Languages. Co-facilitated the NOVASTARTALK Fall 2011 Webinar Series online.

Gunder, A. and Franklin, L. (2011, October 28). Savvy Presentation Tools. Co-facilitated the NOVASTARTALK Fall 2011 Webinar Series online.

Gunder, A., Thompson, J. and Viles, R. (2011, June-August). Co-facilitated the Barrett, The Honors College at Arizona State University Professional Development Workshop Series in Phoenix, AZ.

Franklin, L., Esa, M., Chi, S., Shigehisa, T., **Gunder, A.** and Elhanafi, E. (2010, June 28-July 9). Co-facilitated the NOVASTARTALK Summer Technology Workshops in Arlington, VA.

Franklin, L., Esa, M., Chi, S., Shigehisa, T., **Gunder, A.** and Elhanafi, E. (2009, June 29-July 10). Co-facilitated the NOVASTARTALK Summer Technology Workshops in Arlington, VA.

Gunder (Franklin), A. (2006, June). TTTR: Tips, Tricks, Techniques and Resources. Facilitated full-day seminar for Norfolk State University in Norfolk, VA.

Guest Lecturer

Gunder, A. (2011, January 18 – May 3). Honors Design Seminar. Undergraduate seminar presented to honors students at Arizona State University.

Gunder (Franklin), A. (2010, March 19). Web Design for Filmmakers. Graduate seminar presented to Media Arts Production students at The City College of New York.

Gunder (Franklin), A. (2010, February). Writing for the Web. Undergraduate lecture presented to the Public Relations and Marketing Program students at The City College of New York.

Gunder (Franklin), A. (2008, March 12). Web Design for Filmmakers. Graduate seminar presented to Media Arts Production students at The City College of New York.

Exhibitions

2010 Group Exhibition. CCNY Women Make Art (Curated by Sylvia Netzer). Cohen Library Archives Gallery, The City College of New York, New York, NY.

2009 Group Exhibition. CCNY Women Make Art (Curated by Sylvia Netzer). Cohen Library Archives Gallery, The City College of New York, New York, NY.

Certifications and Memberships

Certifications

Quality Matters Online Facilitator Certification. (2013, September 26).

Quality Matters Peer Reviewer Course. (2013, March 27).

Quality Matters Independent Applying the QM Rubric. (2013, February 25).

Professional Memberships

2015—Present Educause

2015—Present UPCEA

2013—Present Online Learning Consortium

Technical Skills

Programming	HTML5, CSS3, PHP, SQL, jQuery, JavaScript, XML
LMS/CMS	Desire2Learn, Blackboard, Canvas, Moodle, WordPress, Drupal, CommonSpot
Multimedia	Adobe Creative Cloud (Adobe Photoshop, Adobe Illustrator, Adobe Dreamweaver, Adobe InDesign, Adobe AfterEffects, Adobe Premiere Pro, Adobe Acrobat Pro), iMovie, Audacity, Garage Band
Authoring	Playposit, Camtasia, SnagIt, CamStudio, Articulate Storyline and Rise, SoftChalk, Adobe Captivate
Communication	Zoom, Blackboard Collaborate, Adobe Connect, Google Hangouts, GoToMeeting, WebEx and Skype
OS	Windows and Mac OSX
Accessibility	Universal design for learning, 508/ADA Compliant design, Cross-browser compatibility, Responsive design, Mobile design and mLearning

Teaching Areas

open pedagogy, education technology, instructional design, digital literacy, instructional environments for adult learners, technology for second language acquisition, web design, graphic design, visual communication, multimedia design, social media

CURRICULUM VITAE

Chronology of Education

Ph.D., Computer Science, Brigham Young University, August 2003.

Dissertation: *Source Discovery and Schema Mapping for Data Integration*.

Advisor: David W. Embley.

Computer Science, University of Akron, Ohio, 1998–1999.

M.S., Computer Science, University of Science & Technology of China, P.R.China, July 1997.

Thesis: *A Database System for Forest Fire Management*.

Advisors: Baohua Zhao and Qiangan Wang.

B.S., Computer Science, Shandong University, P.R.China, July 1994.

Chronology of Employment

Professor, University of Arizona South, July 2016–Present

Associate Professor, University of Arizona South, July 2009–June 2016

Assistant Professor, University of Arizona South, August 2003–June 2009

Research Assistant, Brigham Young University, August 1999–July 2003

Instructor, Brigham Young University, Spring 2002

Software Engineer, Defeng Company, Jinan, Shandong, P.R.China, October 1997–May 1998

Research Assistant, University of Science & Technology of China, P.R.China, September 1994–July 1997

Honors, Awards and Certificates

Certificate awarded for passing QM Peer Reviewer Course (PRC), 2017

Certificate awarded for passing Independent Applying the QM Rubric (APPQMR): (Statewide Systems), 2017.

Scholarship for Mid Career Mentoring Workshop by Computing Research Association Women (CRA-W), 2015

The 2013 Fall Superior Faculty Award, nominated and awarded by University of Arizona South faculty, sponsored by the University of Arizona South Foundation, 2014

Scholarship for Managing the Academic Career for Faculty Women at Undergraduate Computer Science and Engineering Institutions Workshop, 2007

Educator Scholarship for the 2005 ACM SIGPLAN International Conference on Object-Oriented Programming, Systems, Languages and Applications (OOPSLA 2005), 2005

Graduate Research Assistantships, Brigham Young University, 1999–2003

Graduate Tuition Scholarships, Brigham Young University, 1999–2003

Graduate Tuition Scholarship, University of Akron, 1998–1999

Graduate School Fellowship, University of Science & Technology of China, P.R.China, 1995–1996

Graduate Research Assistantships, University of Science & Technology of China, P.R.China, 1994–1997

Best Graduate Honor, Shandong University, P.R.China, 1994

Merit-based Scholarships, Shandong University, P.R.China, 1990–1993

Service/Outreach

Local/State Outreach

Participate in Computer Science & Computer Information Systems ATF Meeting, October 2018.

Participated as the director of Informatics at NETCOM/Academia/MITRE: Collaboration kickoff at UA South, September 2018.

Participated as a presenter to introduce Informatics to program to students and faculty at Pima IT Club at Pima East Campus, September 2018.

Participated as a presenter to introduce Informatics program to community college and industry partners at UA Chandler, June 2018.

Participated as a presenter to K-12 Teacher Training at UA Yuma on June 4, 2018.

Participated as a mentor for Dev Day Yuma’s inaugural coding event on February 25, 2017

Participated in Dev Day Yuma Training sessions (four sessions) to serve as a faculty mentor for Dev Day Yuma’s inaugural coding event in January and February 2017

Participated in AWC/UASouth INSTICT2 grant preparation and launching activities, Fall 2015 —Present

Participated in developing Informatics and Computer Science major programs to transfer students from Arizona Western College at UA Yuma, Fall 2013–Present

Participated in offering UA South Mathematics and Computer Science minor programs to transfer students from Arizona Western College at UA Yuma, Fall 2012–Spring2015

Participated in a Collaborative Partnership Showcase by Pima College East Campus and UA South, April 2015

Presented UA South Computer Science, Mathematics, and Informatics curricula to TASK Software Engineers and initiated collaboration, Fall 2013–Spring 2014

Examined Arizona Western College Informatics degree draft and shared the review with AWC Hispanic-Serving Institutions Science Technology Engineering & Mathematics and Articulation Programs proposal development committee, Fall 2013

Worked with faculty at Arizona Western College to develop pathways for CS minor and Informatics programs, Fall 2012

Participated in professional development activities on behalf of Southern Arizona Writing Project and i3 Grant Leadership Team, Fall 2012–Spring 2014

Participated in UA South and Cochise MACS (Mathematics and Computer Science) Club activities, Fall 2003–Present

Participated in Cochise College “Math and Science Experience” Day, April 2008, April 2009, April 2010, April 2011, April 2012

Participated in Spring 2010 Welcome Back Bash, February 2010

Participated in Summer 2009 Online Teaching Group activities at UA main campus, Summer 2009

Participated in discussion about research collaboration with the ILEX Systems Arizona in 2007

Participated in “Cochise College Recruitment Days” on February 12, 2007

Participated in discussion about expanding recruitment of UA South CS graduates with the Oberon Associates, Inc in November 2006

Participated in discussion about expanding recruitment of UA South CS students with the JITC XML Lab in 2005

Participated in discussion about expanding recruitment of UA South CS students with the JDEP Operations Center of Northrop Grumman Mission Systems in March 2004

Participated in “Meetings with the Employer Day for participants in the H1B Technology Training Grant” on October 31, 2003

Participated in the articulation meeting in Computer Science/Computer Information Systems on October 3, 2003

National/International Outreach

Participated in Virtual Reality Forum in Tampa, Florida, November 8-9, 2018.

Participated in Unity Developer Forum in Tampa, Florida, November 7, 2018.

Invited International Program Member for Computational Thinking Education 2018 (CTE2018)

Invited International Program Member for Computational Thinking Education 2017 (CTE2017)

Serve at the Editorial Board of the International Journal on E-Learning, Spring 2016–Present

Participated in CyberGen Denver Chinese Immersion Student Camp in Denver, Colorado on June 19-23, 2017

Participated in CyberGen Hawaii Teacher Camp in Honolulu, Hawaii on June 15-16, 2017

Participated in the 2015 Federated Computing Research Conference in Portland, Oregon on June 13-20, 2015

Participated in Mid Career Mentoring Workshop (Education, Research and Lab tracks) in Portland, Oregon on June 13-14, 2015

Member of Association for the Advancement of Computing in Education (AACE), 2015

Member of Association of Computing Machinery (ACM), 2008–Present

Departmental and College Committees

Program director and student major advisor of the Informatics program at UA South, Fall 2012–Present

Program director and student major advisor of the Computer Science program at UA South, Fall 2003–Present

Program director of the Mathematics program at UA South, Fall 2018–Present

Chair of UA South Search Committee for Assistant Professor of Practice in Computer Science and Informatics (Yuma), Fall 2018–Present

Program director and student major advisor of the Mathematics program at UA South, Fall 2009–Spring 2016

Department liaison person to the Department of Mathematics at the UA main campus, Fall 2009–Spring 2016

Department liaison person to the Department of Computer Science at the UA main campus, Fall 2003–Present

UA South faculty co-advisor of MACS (Mathematics and Computer Science) club, Fall 2009–Present

Listserv Manager of UA South and Cochise CS Brown Bag Group, Fall 2003–Present

Member of two P&T Committees, Fall 2017

Chair of UA South Search Committee for Assistant Professor of Practice in Informatics, UA Yuma, Fall 2017-Spring 2018

Member of UA South Search Committee for Assistant Professor of Practice in Cybersecurity, Fall 2017

Chair of UA South Search Committee for Assistant Professor of Practice in Computer Science and Informatics , Spring 2017

Chair of UA South Search Committee for Program Director of Network Administration, Fall 2015–Spring 2016

Chair of UA South Network Administration Search Committee, Fall 2012–Spring 2013

Chair of UA South Curriculum Committee, Fall 2007–Spring 2009, August 2011–May 2013

Appointed leader of UA South STEM Working Group, October 2011-May 2012

Chair of UA South Personnel Committee, Fall 2010–Spring 2011, Fall 2015

Member of UA South Faculty Forum, Fall 2003–Present

Member of UA South Personnel Committee, Fall 2006–Spring 2010, Fall 2014–Spring 2017

Member of Education Technology Advisory Board, Fall 2013–Present

Member of UA South Curriculum Committee, Fall 2012–Spring 2014

Member of UA South Superior Faculty Committee, Fall 2014

Member of UA South P&T Committee, Fall 2013

Member of UA South Third-Year Review Committee, Fall 2010, Fall 2015

Member of UA South Dean’s Level Audit Committee, Fall 2009

Member of Education Technology Graduate Defense Committee, April 2011, May 2012, December 2012, May 2013, December 2013

Member of Search Committee to find an Academic Advising Coordinator, August 2012

Member of Continue Education Scholarship Committee, January 2012

Other Committees (Internal or External)

Member of Southern Arizona Writing Project and i3 Grant Leadership Team, Fall 2012–Spring 2014

Publications/Creative Activity (Published or Accepted)

Peer-reviewed Journal Articles

- Li Xu. **Learning Computational Thinking Online: A Student-Centered, Participatory Approach**, *Computer Science Education & Computer Science Research Journal*, Volume 11, 2015, ISSN 1313-8624.
- Deryle W. Lonsdale, David W. Embley, Yihong Ding, Li Xu, Martin Hepp, **Reusing Ontologies and Language Components for Ontology Generation**, *Data and Knowledge Engineering (DKE)*, Volume 69 Issue 4, pages 318–330, April 2010.
- Li Xu, David W. Embley, **Categorisation of Web Documents using Extraction Ontologies**. *International Journal of Metadata, Semantics and Ontologies (IJMSO)*, special Issue on “Search using Metadata, Semantic, and Ontologies”, Volume 3, Number 1, 2008.
- Li Xu, David W. Embley, **★¹A Composite Approach to Automate Schema Mapping**, *Information Systems (IS)*, Volume 31, Issue 8, pages 697–731, December 2006.
- David W. Embley, David Jackman, Li Xu, **★ Attribute Match Discovery in Information Integration: Exploiting Multiple Facets of Metadata**, *Journal Of The Brazilian Computer Society (JBACS)*, Volume 8, Number 2, pages 32–43, 2002.

Peer-reviewed Proceedings

- Li Xu. **Identifying Strategies for Teaching Computational Thinking by Problem Solving and Self-Awareness**, *EdMedia + Innovate Learning 2018 Conference*, Amsterdam, Netherlands, June 25-29, 2018.
- Li Xu. **A Closer Look at Promoting and Teaching Computational Thinking**, *Society for Information Technology & Teacher Education International Conference (Mar 26, 2018)*, pages 67-71. Association for the Advancement of Computing in Education (AACE).
- Li Xu. **Reflective Analysis on Teaching and Learning Computational Thinking Online**, *World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*, Vol. 2016, No. 1(Nov. 14). Association for the Advancement of Computing in Education (AACE).
- Li Xu and Flory Simon, **Computational Thinking In Problem Solving and Writing —How We Can Help K-12 Teachers**, *Society for Information Technology & Teacher Education International Conference*, Vol. 2016, No.1(Mar. 26). pages 119–125. Association for the Advancement of Computing in Education (AACE).
- Li Xu, **An Online Learning Approach to Teaching Mobile Application Development**, *World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education* Vol. 2015, No. 1(Oct 19, 2015), pages 163–168. Association for the Advancement of Computing in Education (AACE).

¹The ★ to the left of any publication title indicates that the research is based on work done as a graduate student.

- Li Xu, **Adopting a Phenomenographic Study to Design and Implement Teaching Object-Oriented Programming and Design Online**, *World Conference on Educational Multimedia, Hypermedia and Telecommunications* Vol. 2014, No.1 (Jun. 23, 2014), pages 411–416. Association for the Advancement of Computing in Education (AACE).
- Li Xu and Flory Simon. **Combining Teacher Professional Development on Computational Thinking with Writing and Problem Solving**, *Society for Information Technology & Teacher Education International Conference*, Vol. 2014, No. 1 (Mar. 17, 2014), pages 128–130. Association for the Advancement of Computing in Education (AACE).
- Li Xu, **Applying Online Learning Components to Foster Learning Operating Systems**, *World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education* Vol. 2013, No. 1 (Oct 21, 2013), pages 1006–1012. Association for the Advancement of Computing in Education (AACE).
- Li Xu, Betul O. Czerkawski, **Designing Online Course Components to Infuse Computational Thinking in Computer Science**, *World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education* Vol. 2012, No. 1 (Oct 09, 2012), pages 459–464. Association for the Advancement of Computing in Education (AACE).
- Betul O. Czerkawski, Li Xu, **Computational Thinking and Educational Technology**, *World Conference on Educational Multimedia, Hypermedia and Telecommunications* Vol. 2012, No.1 (Jun. 26, 2012), pages 2607–2610. Association for the Advancement of Computing in Education (AACE).
- Yihong Ding, Li Xu, David W. Embley, **A Model of World Wide Web Evolution**, *WebSci'09: Society On-Line*, Athens, Greece, March 18–20, 2009.
- Yihong Ding, Deryle W. Lonsdale, David W. Embley, Martin Hepp, Li Xu, **Generating Ontologies via Language Components and Ontology Reuse**, in *Proceedings of 12th International Conference on Applications of Natural Language to Information Systems (NLDB 2007)*, Paris, France, June 27–29, 2007.
- Li Xu, David W. Embley, Yihong Ding, **Combining Declarative and Procedural Knowledge to Automate and Represent Ontology Mapping**, in *Proceedings of the First International Workshop on Semantic Web Applications: Theory and Practice with the 25th International Conference on Conceptual Modeling (ER 2006)*, pages 395–404, Tucson, AZ, November 6, 2006.
- Li Xu, David W. Embley, ★ **Combining the Best of Global-as-View and Local-as-View for Data Integration**, in *Proceedings of the Third International Conference on Information Systems Technology and its Applications (ISTA 2004)*, pages 123–136, Salt Lake City, Utah, July 15–18, 2004.
- Li Xu, David W. Embley, ★ **Using Domain Ontologies to Discover Direct and Indirect Matches for Schema Elements**, in *Proceedings of the Semantic Integration*

Workshop with the Second International Semantic Web Conference (ISWC 2003), pages 97–102, Sanibel Island, Florida, October 20, 2003.

Li Xu, David W. Embley, ★ **Discovering Direct and Indirect Matches for Schema Elements**, in *Proceedings of the Eighth International Conference on Database Systems for Advanced Applications (DASFAA 2003)*, pages 39–46, Kyoto, Japan, March 26–28, 2003.

David W. Embley, Li Xu, ★ **Locating and Reconfiguring Records in Unstructured Multiple-Record Web Documents**, *Lecture Notes in Computer Science*, volume 1997, pages 256–274, Springer Verlag 2001.

David W. Embley, Yiu-Kai Dennis Ng, Li Xu, ★ **Recognizing Ontology-Applicable Multiple-Record Web Documents**, in *Proceedings of the 20th International Conference on Conceptual Modeling (ER 2001)*, pages 555–570, Yokohama, Japan, November 27–30, 2001.

David W. Embley, David Jackman, Li Xu, ★ **Multifaceted Exploitation of Metadata for Attribute Match Discovery in Information Integration**, in *Proceedings of the International Workshop on Information Integration on the Web (WIIW 2001)*, pages 110–117, Rio de Janeiro, Brazil, April 9–11, 2001.

David W. Embley, Li Xu, ★ **Record Location and Reconfiguration in Unstructured Multiple-Record Web Documents**, in *Proceedings of the Third International Workshop on the Web and Databases (WebDB 2000)*, pages 123–128, Dallas, Texas, May 18–19, 2000.

Conference/Scholarly Presentations

Conference Presentations

Li Xu. **An Online Learning Approach to Teaching Mobile Application Development**, World Conference on E-Learning in Corporate, Government, Healthcare, & Higher Education (E-Learn 2015), Kona, Hawaii, October 19–22, 2015.

Li Xu, **Learning Computational Thinking Online: A Student-Centered, Participatory Approach**, the 11th Annual Computer Science Education and Computer Science Conference (CSECS 2015), Boston, Massachusetts, June 4–7, 2015.

Li Xu, **Adopting a Phenomenographic Study to Design and Implement Teaching Object-Oriented Programming and Design Online**, World Conference on Educational Media and Technology (EdMedia 2014), Tampere, Finland, June 23–27, 2014.

Li Xu and Flory Simon, **Combining Teacher Professional Development on Computational Thinking with Writing and Problem Solving**, The 25th annual conference of the Society for Information Technology and Teacher Education (SITE 2014), Jacksonville, Florida, March 17–21, 2014.

Li Xu, **Applying Online Learning Components to Foster Learning Operating Systems**, World Conference on E-Learning in Corporate, Government, Healthcare, & Higher Education (E-Learn 2013), Las Vegas, Nevada, October 21–25, 2013.

Li Xu and Betul O. Czerkawski, **Designing Online Course Components to Infuse Computational Thinking in Computer Science**, World Conference on E-Learning in Corporate, Government, Healthcare, & Higher Education (E-Learn 2012), Montreal, Quebec, October 9–12, 2012.

Colloquium Presentations

Li Xu. **What is Computational Thinking?**, WESTERNCATS-GADSDEN Teacher Training, June 4-8, 2018, San Luis Technical Institute, Yuma, Arizona.

Li Xu, Flory Simon, and Lisa Holland. **Infusing Computational Thinking and Data Analysis for Teaching Improvement**, Southern Arizona Writing Project i3 Grant Bisbee High and Middle School Teacher Professional Development Retreat, February 2014.

Li Xu and Flory Simon, **Infusing Computational Thinking into Teaching Activities: How to Teach Writing Argumentative and Informational Text with Emphasis on the Common Core Standards**, Southern Arizona Writing Project i3 Grant Bisbee High School Teacher Professional Development Retreat, August 2013.

Li Xu, **The Power of Computational Thinking**, UA South Faculty Forum, January 16, 2013

Li Xu and Flory Simon, **Infusing Computational Thinking into Teaching Activities**, Santa Clara Elementary School Sunnyside School District, Southern Arizona Writing Project, September 19, 2012.

Li Xu, **Object Oriented and 3D Programming in Alice**, UA South MACS Club, March 2012.

Li Xu, **3D Programming with Alice**, UA South MACS Club, March 2011.

Grants

Li Xu, Betul O. Czerkawski, John Delalla, University of Arizona OIA Grant for **Developing an Online Informatics Program**, January 2013. **Funded at \$30K**, PI.

Li Xu, University of Arizona OIA Grant for **Converging Face-to-face and Online Learning Operating Systems in Computer Science**, November 2011. **Funded at \$9941.85**, PI.

Li Xu, Barbara W. Citera, Laura G. Lunsford, **Piloting an Industry - University Collaboration in Computing Education: An Assessment Project**, March, 2011. Not funded.

Matthew Richard Holliday

722 Charles St
Ypsilanti MI 48198
Matt.holliday50@gmail.com
480-272-3815

EDUCATION

- 2010 – 2014 THE UNIVERSITY OF ARIZONA; TUCSON, AZ
Doctor of Philosophy in Educational Psychology
Minor: Higher Education
Dissertation: First Year Experience Seminars: How Contrasting Models Impact College Transition and Retention
- 2008 – 2010 ARIZONA STATE UNIVERSITY; TEMPE, AZ
Master of Education in Higher and Postsecondary Education
- 2004 – 2008 OHIO NORTHERN UNIVERSITY; ADA, OH
Bachelor of Art in Psychology

EMPLOYMENT HIGHLIGHTS

- Jan 2018 – *Student Affairs Program Manager*
Present Bachelor of Science in Pharmaceutical Sciences, College of Pharmacy
University of Michigan, Ann Arbor, MI
- Program administration and advising current and prospective undergraduate students.
 - Manage recruitment and outreach efforts, including generating website and brochure content and developing summer programs for high school students.
 - Data maintenance and reporting of student records and program assessment
- Jan 2015 – *Online Adjunct Faculty*
Present Educational Technology
The University of Arizona, Tucson, AZ
- ETCV 512 – Student Engagement in Online Learning
 - ETCV 510 – Learning Theory in Instructional Design
 - ETCV 310 – Statistics in the Digital Age
- Nov 2015 – *Learning Specialist*
Dec 2017 Office of Medical Student Education, School of Medicine
University of Michigan, Ann Arbor, MI
- Provided learning support and programming for MD and MD/PhD students.
 - Collaborated with campus partners to ensure appropriate referrals for diagnostic testing and consult for students with disabilities.
 - Managed the medical student tutor program, including recruitment, hiring, training, payroll, assessment, and quality improvement.
 - MEDADM 300 – Learning Theory and Application
- April 2015 – *Student Data Specialist*
Nov 2015 Academic Services, Ross School of Business
University of Michigan, Ann Arbor, MI
- Analyzed student and institutional records for external surveys and various internal data requests using Business Objects and UM Data Warehouses.

- Coordinated mass and block enrollment processes for undergraduate and graduate programs. Managed student records in M-Pathways.
 - Advised undergraduate and graduate students regarding information, procedures, and policies for registration and course enrollment.
- Sept 2014 – ***Instructional Assistant/Extended-Day Program Manager***
 Dec 2014 Traverse City Area Public Schools
 Interlochen Elementary School, Interlochen, MI
- Encouraged identified at-risk students to set and maintain behavioral standards.
 - Supported and reinforced program goals, curriculum planning, and development.
 - Met periodically with parents to discuss student progress.
 - Promoted students' self-confidence, problem solving, and social skills with peers and adults.
- Jan 2013 – ***Adjunct Faculty***
 May 2014 Psychology Department
 Pima Community College, Tucson, AZ
- PSY 210 – Introduction to Biopsychology
 - PSY 230 – Psychological Measurement and Statistics
 - PSY 240 – Developmental Psychology
- May 2012 – ***Graduate Research Associate***
 May 2014 The Honors College – Student Engagement
 College of Education – Early Childhood Research Project
 The University of Arizona: Tucson, AZ
- Reviewed metrics for assessing student engagement in strategic plan.
 - Developed student participation and engagement tracking system.
 - Created and piloted measures of student engagement suitable for pre and post experience to assess outcomes.
- Aug 2011 – ***Course Coordinator/Graduate Teaching Associate***
 May 2012 The Honors College
 The University of Arizona, Tucson, AZ
- HNRS 150B – Paladins First Year Success Seminar
 - HNRS 196B – Academic Strategies for Honors Students
 - HNRS 391H – Honors Preceptor Supervision
 - Coordinated Paladins, a first-year success seminar for first-generation college students, by designing engaging curriculum to improve college adjustment and persistence among first-year students.
 - Facilitated weekly training meetings for 16 undergraduate preceptors.
 - Conducted classroom observations and reviewing preceptor teaching performances.
 - Evaluated 300 first-year students' performances and reported subsequent grades D2L while adhering to FERPA guidelines.
 - Co-taught a course for students on academic probation in which students developed personal responsibility for academic and personal life decisions by setting academic and professional goals and strengthening time management and study skills.
- Aug 2008 – ***Graduate Teaching Assistant***
 May 2010 Major and Career Exploration
 Arizona State University, Tempe, AZ

- ASU 101 – The ASU Experience
- UNI 150 – Major and Career Exploration
- UNI 250 – Career Development
 - Contributed to curriculum development for ASU 101: The ASU Experience, UNI 150: Career and Major Exploration and UNI 250: Career Development.
 - Led class lectures and discussions twice a week for an hour and fifteen minutes.
 - Designed academic success and exploratory career-related group activities, online course content, and individual homework assignments for undergraduates.
 - Evaluated students' performances and reported subsequent grades to faculty center on Blackboard while adhering to FERPA guidelines.

June 2009 – ***Graduate Assistant – Residence Life***

Aug 2009 Columbus College of Art and Design, Columbus, OH

- Supervised eight summer staff resident assistants.
- Developed and conducted staff training modules for summer resident assistants.
- Created living learning and in-service programs for first year residents.
- Utilized housing budget and conducted housing assignments for summer and fall residents.

May 2007 – ***Undergraduate Counselor***

Aug 2007 The Cleveland Clinic – Summer Treatment Program, Cleveland, OH

- Conducted clinical research and participated in treatment of children with ADHD, compliance, and opposition/defiance disorders.
- Discussed student progress and intervention strategies with parents.
- Instructed daily swim lessons to ten twelve-year olds.

PUBLICATIONS

Cabrera, N. L., & Holliday, M. R. (2017). Racial Politics and Racial Self-Identification: A Case Study of Arizona, 2010-2011. *Hispanic Journal of Behavioral Sciences*, 39(2), 131-149.

Holliday, M. R., Cimetta, A., Cutshaw, C. A., Yaden, D., & Marx, R. W. (2014). Protective Factors for School Readiness Among Children in Poverty. *Journal of Education for Students Placed at Risk*, 19(3-4), 125-147.

PRESENTATIONS

Rubie-Davies, C. M., & Holliday, M. R. (2016). *Student beliefs that prevail over teacher expectations*. Paper presented at the American Educational Research Association Annual Meeting, Washington, DC.

Holliday, M. R., Levine-Donnerstein, D., & Mendez, J. (2013). *How a first year experience seminar influences first-generation students' college transition: A mixed methods study*. Paper presented at the Social Psychology of the Classroom International Conference, Auckland, New Zealand.

Holliday, M. R., Cimetta, A. D., Cutshaw, C. A., Yaden, D. B., & Marx, R. W. (2013). *Protective factors for school readiness among children in poverty*. Paper presented at the annual meeting of the American Psychological Association, Honolulu, HI.

Levine-Donnerstein, D., Holliday, M. R., Mendez, J., & Bukoski, E. A. (2013). *Prevalence of reported social distance and witnessed prejudice among gender and racial/ethnic groups*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

Cabrera, N. L. & Holliday, M. R. (2013). *Racial politics and racial identity: A case study of Arizona, 2010-2011*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

Holliday, M. R., Levine-Donnerstein, D., & Mendez, J. (2012). *First-generation honors program: Assessing outcomes that promote first-semester transition and academic success*. Paper presented at the annual meeting of the Association for the Study of Higher Education, Las Vegas, NV.

GRANTS, FELLOWSHIPS, & CERTIFICATIONS

The Applying the Quality Matters Rubric (APPQMR) Workshop, 2016

National Science Foundation Grant, 2013 – East Asian and Pacific Summer Institute Fellowship, \$7,300.00

Role: Principal Investigator

Project Title: Classroom expectations: The relationship between teacher beliefs and student achievement.

UNIVERSITY SERVICE

University Mentorship Program – Mentor, 2015-present

The University of Michigan: Ann Arbor, MI

Arizona Assurance Scholarship Program – Mentor, 2012-2014

The University of Arizona: Tucson, AZ

PROFESSIONAL AFFILIATIONS

2018-Present National Association of Advisors for the Health Professions (NAAHP)

2008-Present American Psychological Association (APA)

Employment

Cloud Solution Architect

Microsoft Corporation

October 2018-Present

- Works with Microsoft Azure customers to design, implement, and deploy application and data workloads into the Azure cloud.
- Works closely with Azure Engineering teams to assist in capacity planning and service roadmap planning for Microsoft Azure public and sovereign clouds.
- Provides cloud-related training to Microsoft Azure customers.
- Provides technical expertise to Microsoft Azure sales teams as part of their sales motions.
- Develops proof-of-concept applications and cloud deployments to demonstrate Microsoft Azure capabilities.

Sr. Consultant

Microsoft Corporation

April 2015-September 2018

- Participated in the Publicis Groupe Marcel project as a developer on the Publicis Marcel mobile application for Android and iOS. This application was publicly unveiled at the VivaTechnology 2018 conference in Paris, France by Microsoft CEO Satya Nadella and Publicis Groupe CEO Arthur Sadoun. We successfully delivered phase 1 of the Marcel solution, which is currently in beta test. Publicis Press Release: <http://www.publicisgroupe.com/en/news/press-releases/publicis-groupe-unveils-marcel>, Microsoft/Publicis Partnership Video: <https://www.youtube.com/watch?v=wzJS5DHZQJ8>
- Designed and developed a highly-scalable Azure App Service for the US Army Cyber Command (ARCYBER) to challenge potential recruits to solve a cipher challenge. This application is a component of a nation-wide recruiting campaign, receiving more than 1 million hits from over 97 countries around the world. The success of this project resulted in expected Azure revenue of \$5,400 for 3 years, above the original plan for 6 months. Commercial: <http://bit.ly/2kUfTdu>, App: <http://www.recruitahacker.net>
- Directed a software development team of 4 Microsoft consultants refactoring an extensive customer application and improving unit test coverage over 40%, resulting in a 90% reduction of user-reported defects.
- Worked across organizational boundaries within Microsoft to identify new opportunities within the NETCOM engagement for application modernization, increasing revenue by over \$1 million over a one-year period with potential for annual renewal.
- Collaborated with a colleague across organizational boundaries to develop an Azure App Service-based Web API provide clean snapshots of the Windows Management Instrumentation (WMI) system hierarchy within Microsoft Windows. When used in conjunction with the PowerShell client SDK, users can determine changes made to the WMI based on software updates, program installation, or even malware exploitation, while respecting customer privacy by keeping data on-premises. (Swagger API description - <http://wmidb-dev.azurewebsites.net/swagger>)
- Awarded the Americas MVP award in FY16 by Microsoft Services senior leadership for outstanding technical delivery and engagement growth.
- Translated ambiguous requirements into solid technical requirements by iterating quickly and soliciting feedback from customer stakeholders, resulting in software that automated the NETCOM contracting process which reduced the amount of time to procurement by over 70% and enabled data analysis over all procurement efforts world-wide where it previously wasn't possible.
- Engineered a scalable micro-services architecture leveraging Azure Container Services, Docker, Kubernetes, and Azure storage queues to perform parallelized scoring computations across Microsoft Services profile skill data to determine candidate compatibility with a set of desired

skillsets for Microsoft Services customer engagements. Prior to this solution, Microsoft Services resource management could not identify potential candidates for an engagement using skill-based metrics.

- Worked with a team of MCS consultants to add Prism framework support to the [Windows Template Studio \(WTS\)](#) project on GitHub, which was released in v1.7. I continue to contribute to this project by addressing any issues raised by members of the open source community or WTS team members. As part of this project, I developed reference Universal Windows Platform (UWP) implementations that were vetted by the Prism project architects to ensure the apps felt like first-class Prism implementations. After approval was granted, I was able to create templates from the reference implementations to enable WTS to create view models, views, and initialize the Prism framework for navigation and dependency injection with Unity.
- Designed and deployed a highly scalable Azure application architecture to migrate critical applications for the Harris County Flood Control District (HCFCD) into the cloud as part of Microsoft Disaster Recovery (MSDR) initiatives following Hurricane Harvey. Prior to using Azure, HCFCD infrastructure could not handle the massive demand on their applications after the disaster, preventing citizens from obtaining critical recovery information.
- Designed and deployed a highly scalable Azure application architecture to support televised fundraising efforts by the Office of the First Lady of Puerto Rico. (<https://unidosporpuertorico.com>) This Azure deployment takes advantage of auto-scale features present in Azure Platform as a Service (PaaS) offerings to provide 100% uptime for the traffic surges encountered during the telethon.
- Designed and developed a Microsoft Edge Extension, Google Chrome Extension, and Bot Framework chat bot to provide interfaces for the OneWeek 2017 Hackathon project to help consumers identify fake news articles. This project generated internal interest within the Microsoft Machine Learning community and Bing, and has potential to live well beyond the hackathon.
- Developed and delivered a tech talk for MCS Consultants in the Apps Domain on developing mobile applications with Xamarin. The tech talk featured demo code and apps.
- I am volunteering as a mentor for the [Microsoft Software and Systems Academy](#), preparing military veterans to transition into civilian careers in the technology industry with Microsoft and other technology companies. My mentoring focus is around cloud application development.

Adjunct Instructor

University of Arizona

Aug 2012 – Present

- Courses: CSCV337 Web Programming, CSCV345 Analysis of Discrete Structures, CSCV352 Systems Programming and Unix. Courses were delivered over the course of 16 weeks with an average capacity of 25 students.

Resident Engineer

Juniper Networks

Jan 2012 – April 2015

- Conducted US Department of Defense (DoD) certification testing of Juniper Networks appliances and software for use on DoD networks. Configuration and automation developed for these test events reduced manual labor performed by DoD network engineers from 2 hours of configuration to about 20 minutes to migrate a device with factory defaults to a secure, compliant configuration for DoD networks.
- Configured Juniper Networks devices for use in various routing and switching scenarios to include core, distribution, edge, and provider-edge roles within a large enterprise network topology. This included configuring protocols such as BGP, OSPF, MPLS, and spanning tree to demonstrate interoperability with devices from other network appliance vendors and demonstrate device performance characteristics.
- Developed Python and Stylesheet Language Alternate Syntax (SLAX) scripts to implement

augmented security policy and auditing capabilities in the Junos operating system to comply with DoD security and auditing requirements and provide a competitive advantage over other network device vendors lacking device automation capabilities.

Sr. Software Engineer L3 C2S2/Engility Nov 2007 – Jan 2012

- Directed a team of software engineers to develop the Automated Entity Merge System (AEMS) service as part of the Distributed Common Ground System – Army (DCGS-A), improving analyst efficiency by about 20%, depending on the quality of the collected intelligence.
- Directed an agile software development team composed of 6 engineers which developed a web-based knowledge and content management supporting Army intelligence systems world-wide. This system allowed field engineers to download the latest software releases and provided configuration management capabilities for distribution of tested intelligence software packages, reducing the time-to-field to a matter of hours instead of days.

Computer Scientist US Army July 2001 – Nov 2007

- Developed a secure Java2 Enterprise Edition (J2EE) web-based application to deliver technical reports to authorized Army users leveraging DoD hardware identity tokens. Previously, the organization distributed documentation via hard-copy or email upon request. This solution allowed authorized users to access sensitive technical documents while eliminating the need for technical writers to validate credentials for requestors, reducing the time to fulfill a request from about 30 minutes to under a minute.
- Performed technical evaluations of network appliances and software to determine suitability for use on Army IT infrastructure.

Personal Projects and Initiatives

- Currently learning HoloLens development by building two Windows Holographic experiences using Unity3D and the HoloToolkit for Unity. Ask me about the details!
- Pursuing Xamarin Mobile Developer certification.

Education

University of Southern California , M.S. Computer Science	May 2012
University of Arizona , B.S. Computer Science	May 2005
Cochise Community College , A.S. Computer Science/A.A. Mathematics	Dec 2003

Certifications

- Active Department of Defense Top Secret Security Clearance
- Certified Information Systems Security Professional (CISSP)
- Architecting Microsoft Azure Solutions (70-534)
- Developing Microsoft Azure Solutions (70-532)
- Microsoft Certified Solutions Associate – Cloud Platform

Languages and Technologies

- C#, JavaScript, Java, Python, C, SQL, ASP.NET (MVC/WebAPI/Core), Xamarin, Unity3D (HoloLens), Mixed Reality Toolkit for Unity, Microsoft Azure Cloud Ecosystem, Azure Functions, Logic Apps, ReST API development, Single Page Applications, KnockoutJS, TypeScript, Docker, Kubernetes, Microsoft Bot Framework
- Visual Studio (Code/IDE/Team Services), Unity Editor, XCode, Eclipse, Netbeans, Agile

Dr. Ryan Straight, Assistant Professor

ryanstraight@email.arizona.edu | 520.458.8278

November 30, 2018

Employment

Academic Positions

Assistant Professor - Educational Technology, University of Arizona, South. May 2017 - present
Co-Program Director, Educational Technology. August 2018 - present
Program Director, Informatics - Digital Design. August 2018 - present

Senior Lecturer - Educational Technology, University of Arizona, South - January 2015 - May 2017.
Co-Program Director, Educational TEchnology. January 2015 - August 2015.

Adjunct Instructor - Educational Technology, University of Arizona, South - June 2014 - December 2014.

Professional Positions

Instructional Technology Training Specialist - University Information Technology Services, University of Arizona - Tucson, AZ - April 2012 - January 2015.

Student System Testing Analyst - Office of the University Registrar, Ohio University - Athens, OH - August 2010 to April 2012.

Undergraduate Catalog Manager - Office of the University Registrar, Ohio University - Athens, OH - August 2009 to June 2010.

Education

- Ph.D Degree, Instructional Technology, May 2015 (Ohio University)
 - Dissertation: An Exploratory Study of Augmented Reality and Mobile Games Examining Ingress Player Motivation and Potential Educational Value
- M.Ed Degree, Cultural Studies in Education, June 2009 (Ohio University)
 - Seminar Paper: Religion and Public Education, A Review of the Literature
- BS.Ed. Degree, Integrated Language Arts, June 2005 (Ohio University)
 - Major: Secondary English Education (7th - 12th grades American and British Literature)
 - Minors: English Literature and Philosophy

Fields of Interest and Study

Innovation in educational and instructional technology, asynchronous and synchronous communication in online education, technological mediation of experience, Postphenomenology, digital humanities, cyber operations and security, human-computer interaction, game-based learning and gamification.

Teaching

Undergraduate, University of Arizona

INFV 302 - Statistics in the Information Age
ETCV 310 - Integrating Technology into the Curriculum
INFV 401 - Introduction to Human-Computer Interaction
ETCV 404 - Principles and Practices of Distance Education
INFV 405 - Introduction to Serious Game Design
INFV 406 - Introduction to Game Development
INFV 411 - Learning Technologies in the Digital Age
HNRS 195H - First-Year Honors Seminar (Special topics: Postphenomenology)

Graduate, University of Arizona

ETCV 510 - Learning Theory in Instructional Design
ETCV 524 - Educational Gaming and Simulations
ETCV 530 - Multimedia Applications in Education
ETCV 538 - Mobile Technologies for Learning
ETCV 622 - Introduction to Interface Design
ETCV 623 - Designing Online Learning Environments
ETCV 631 - Advanced Multimedia

Scholarly Activity and Research Interests

Conference Proceeding Publications

- Straight, R. (2016). Emergent mentorship and learning communities of practice among players of augmented reality video games. In *Proceedings of E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*. Washington, DC: AACE.
- Smith, J., Straight, R. & Franklin, T. (2011). Student occupational expectations: A web 2.5 geolocate study. *Proceedings of the Association for the Advancement of Computing in Education 2011* (pp. 2522-2526). Honolulu, HI: AACE.
- Straight, R. (2011). Commercial off-the-shelf video games as computer-assisted language learning environments. In *Proceedings of Society for Information Technology & Teacher Education International Conference 2011* (pp. 1982-1986). Chesapeake, VA: AACE.

- Straight, R. & Smith, J. (2011). The development and delivery of custom mobile apps for K-12 learning: Viable options for educators. In *Proceedings of the Society of Information Technology & Teacher Education International Conference 2011* (pp. 3102-3107). Chesapeake, VA: AACE.

Presentations

- Straight, R. "The New Professor: How I Podcasted My Way Into Students' Lives (And How You Can, Too)." Selected *Best In Track*. Presented at the 2019 OLC Innovate conference, Denver, CO.
- Straight, R., Gunder, A., Stewart, J., King de Ramirez, C., Thompson, K., & Pizzo, J. "And We're Live! A Rough Guide on Academic Podcasting." Presented at the 2018 OLC Accelerate conference, Orlando, FL.
- Gunder, A., Knott, J., & Straight, R. (2018). "#SquadGoalsNetwork - Remixing the Personal Learning Network." Presented at the 2018 OLC Accelerate conference, Orlando, FL.
- Shah-Nelson, C., Gunder, A., Stewart, J., Romanoski, M. Knott, J., Scragg, B., & Straight, R. (2018). "With a Little Help From My Friends: The Power of the PLN." Presented at the 2018 OLC Accelerate conference, Orlando, FL.
- Straight, R. (2017). "Slacking Off in Class: Cloud-Based Team Collaboration in Online Higher Education Programs." Presented as an Innovation Lab at the 2017 Online Learning Consortium Innovate conference, New Orleans, LA.
- Straight, R. (2016). "Slack and the Online Classroom." Presented at the 2016 University of Arizona IT Summit, Tucson, AZ.
- Straight, R. & Gunder, A. (2016). "Innovative Learning Projects: Promoting Leading-Edge Opportunities in Higher Education." Poster presented at the 2016 University of Arizona IT Summit, Tucson, AZ.
- Straight, R. (2014). "Microsoft Outlook: Tips and Tricks You May Not Know." Presented at the University of Arizona Staff Advisory Council 2014 Crossroads Conference.
- Smith, J., Straight, R. (2011). "New Technologies in Research Presentation: Broadcastr." Presented at the 2011 Association for the Advancement of Computing in Education Conference.
- House, C., Smith, J., Straight, R. (2011). "The OHIO Map App Project." Presented at the 2011 OHIO Mobile Learning Symposium.
- Straight, R. (2011). "Commercial Off-The-Shelf Video Games as Computer-Assisted Language Learning Environments: Heavy Rain." Presented at the 2011 Society of Information Technology & Teacher Education International Conference.
- Smith, J., Straight, R. (2011). "The Development and Delivery of Custom Mobile Apps for K-12 Learning: Viable Options for Educators." Presented at the 2011 Society of Information Technology & Teacher Education International Conference.
- Straight, R. (2010). "Commercial Video Games and Language Learning: Web-based Flash Games and TEFL/TESL" Presented at the Technology Fair, 2010 Ohio University CALL Conference "Language Learning in an Online World."

Writing Positions and Projects

- Staff writer, *Chronicle of Higher Education's ProfHacker blog* (2017 - current)

Consultancies, Speaking Invitations, and Workshops

- Steering Committee, OLC Innovate 2019: Workshops track co-chair.
- Social Media Advisor, *Learning Science Research Nurturing Students & Classroom Innovation (LRNSCI)*, International Society for Technology in Education, 2018 - 2019.
- Online Learning Consortium workshop facilitator, *Gamified Learning Environments*, 2019.
- Featured panelist, *TENWEST Festival - Social Impact Summit, "Innovation in Educational Technology," Tucson, AZ - 2017.
- Invited speaker, "STEM Resources for Parents and 6-8th grade children," Gridley Middle School, Tucson, AZ - 2016.
- Guest, Versatelist podcast - 2015.
- Instructional advisor, NoteBowl, LLC - 2015.
- Technology consultant, Pima County Board of Elections, 2015.
- Workshop: "Integrating Technology Into the Classroom: A Workshop for Faculty and Instructors," Ohio University, September 21, 2011, Ohio University.
- Invited Panel Discussion: "Using Mobile Apps in the Classroom-From a Teaching and Learning Perspective," OHIO Mobile Learning Symposium, May 16, 2011.

Journal Reviews And Editing

- Reviewer: Issues and Trends in Educational Technology (Winter 2015-present)
- Reviewer: Journal of Visual Literacy (2010 - 2013)
- Reviewer: Turkish Online Journal of Educational Technology (2010 - 2013)
- Guest editor: Democracy & Education, vol 6, no. 1 (2006), issue title "Reading the World: Popular Culture, Critical Media Literacy & Youth"

Professional Service

Awards, Honorary Positions, and Fellowships

- Best In Track: "The New Professor: How I Podcasted My Way Into Students' Lives (And How You Can, Too)", OLC Innovate 2019.
- Effective Practice Award, "#SquadGoalsNetwork – Remixing the Personal Learning Network," Angela Gunder, Jessica L. Knott, Ryan Straight, Clark Shah-Nelson, Keegan Long-Wheeler, Benjamin Scragg, John Stewart; The University of Arizona, Michigan State University, The University of Maryland, The University of Oklahoma, Arizona State University. OLC Accelerate 2018.
- Honors Professor, Honors College, spring semesters.
- UA South Faculty Fellow, inaugural, 2017 - present.

Committees

- Student Showcase organization committee, member (2018)
- University Search Committee for Online Teaching and Learning Meeting Software (2017 - 2018)
- UA South Policy Committee (2017 - 2018)
- University Funding Committee (2017 - 2018)
- UA South Technology Committee (2016 - 2018)
- Graduate College Grievance Committee (2015 - 2018)
- Outstanding Student Award, Undergraduate & Graduate (2015)
- Student Showcase organization committee, chair (2015, 2016, 2017)

Oversight and Advisory

- Innovative Learning Project (2016 - present)
- Faculty advisor, Associated Students of Arizona South Student Government (2017 - present)
- UA South Campuswide Slack Team, Owner and Administrator (2016-present)
- UA South Program Assessment Team (2015)
- Innovative Learning Oversight Team (2015)
- Consultant/Subject Matter Expert, Campus Technology Upgrade Program, University of Arizona (2013 - present)

Development

- Curriculum development: INFV 496 - Special Topics in Informatics (approved Fall 2018)
- Curriculum development: INFV 406 - Introduction to Game Development (approved Fall 2018)
- Curriculum development: ETCV 538 - Mobile Technologies for Learning (approved Spring 2015)
- Program development: Educational Technology Student Orientation course
- Program development: Educational Technology Wiki creation
- Program development: Implementation of program-level communication system (Slack)

Active Grants

- Innovative Learning Project: 2016 (Co-PI, 20%) “Campuswide Novel Asynchronous Communication”
One-time grant: \$3,000

Professional Memberships And Activities

AZTEA - Arizona Technology in Education Association - member

HEVGA - Higher Education Video Game Alliance - charter member

ITSA - Instructional Technology Scholars Association - president, 2010-11, 2011-12 academic years

ISTE - International Society for Technology in Education - member

AACE - Association for the Advancement of Computing in Education - member

SITE - Society for Instructional Technology & Teacher Education - member

AECT - Association for Educational Communications and Technology - member

TURE PEKEN

(+1) 520-891-8360 • turepeken@email.arizona.edu • 2115 E 2nd St 85719 • Tucson, AZ

EDUCATION

University of Arizona, Tucson, AZ

Sept. 2014-Present

PhD in Electrical and Computer Engineering (GPA:3.83/4.00)

- **Coursework:** Network Information Theory with Engineering Applications, Statistical Machine Learning, DSP, Knowledge-Based Systems, Channel Coding, Advanced Topics in Computer Networks, Linear Algebra, Wireless Communications, Theory of Statistics, Independent Study on Millimeter-wave Massive MIMO

University of Michigan, Ann Arbor, MI

Sept. 2011-Dec. 2012

Master of Science in Electrical Engineering: Systems with major on Communications (GPA:3.34/4.00)

- **Coursework:** Digital Communication and Coding, Communication Networks, Stochastic Processes,
- Probability, Mathematical Methods for Signal Processing, Game Theory, Real Time Computing

Istanbul Technical University, Istanbul, Turkey

Sept. 2006-May 2011

Dual Bachelor of Science in Telecommunications Engineering and Computer Engineering (GPA:3.69/4.00)

- Ranked 3rd in Telecommunications Engineering and 4th in Computer Engineering

SKILLS

MATLAB, Signal Processing, DSP Programming, Wireless Networks, Algorithms, Assembly, C, C++, NesC, SQL, Linux, Eclipse, WSNs, TinyOS, LTE, NS-2, QT, Code Composer, Python, R

WORK EXPERIENCE

Keysight Technologies, Santa Rosa, CA

May. 2017-Aug. 2017

Intern R&D Engineer

- Worked on 5G New Radio Technologies
- Physical channels and channel encoder were implemented based on TS 38.211 and TS 38.212 using MATLAB
- A novel hybrid beamforming algorithm for 5G was developed and integrated into SystemVue

Keysight Technologies, Santa Rosa, CA

May. 2016-Aug. 2016

Intern R&D Engineer

- Worked on channel estimation for massive MIMO
- Implemented pilot-based, semi-blind, and blind channel estimation algorithms by using C
- Integrated channel estimation algorithms with SystemVue

Netaş, İstanbul, Turkey

Nov. 2013-Sept. 2014

Software Design Engineer

- Worked on software design of LTE-Advanced eNodeB for uplink
- Focused on LTE physical layer design and developed channel estimation and equalization algorithms for the receiver of the eNodeB
- Implemented the algorithms by using C in Code Composer Studio
- Tested the algorithms on TCI6638K2K

Isnet A.S., Istanbul, Turkey

March 2011-June 2011

Satellite System Engineer

- Monitored, configured, managed and maintained network devices of Cisco, Hughes and Gilat to provide reliable data and voice services to customers through satellite network

RESEARCH EXPERIENCE

University of Arizona

Sept. 2014-Present

Research Assistant with Prof. Tamal Bose

- Research on spectrum sharing between MIMO radar and MIMO communication system
 - Published a paper in WinnComm 2015
- Research on blind channel estimation for massive MIMO
 - Published a poster in BWAC 2015 and a paper in WinnComm 2016
- Research on channel estimation with compressive sensing methods for massive MIMO
 - Published a poster in BWAC 2016 and a paper in ITC 2017
- Research on hybrid beamforming for massive MIMO in millimeter-waves
 - Published a paper in WinnComm 2017

University of Michigan

Sept. 2011-Dec. 2012

Independent Research

- Research on LDPC codes and Belief Propagation Decoding Algorithm
- Analyzed the performance of decoding LDPC codes with Belief Propagation Decoding Algorithm via MATLAB
- Research on Bayesian Learning in Social Networks

TEACHING EXPERIENCE

University of Arizona

Jan. 2017-May 2017

Teaching Assistant

- Worked as a consultant for Ephibian
- Provided the necessary information to Ephibian for developing CellSim, which is a simulator for cellular networks (CDMA, UMTS, LTE).

University of Arizona

Jan. 2017-May 2017

Teaching Assistant

- Instructor of Wireless Networks and Security (CYBV 479)
- Taught wireless technologies, mobile protocols, mobile identifiers, mobile and location-based services, mobile encryption standards.

University of Arizona

Sept. 2015-May

2016

Teaching Assistant with Garrett Vanhoy

- TA for Microprocessor Organization (ECE 372A)

University of Arizona

Jan. 2015-May 2015

Teaching Assistant with Prof. Wolfgang Fink

- TA for Computational Techniques (ECE 330)

University of Arizona

Sept. 2014-Dec 2014

Teaching Assistant with Prof. Ali Bilgin

- TA for Applications of Engineering Mathematics (ECE 310)

PUBLICATIONS

- T. Peken, G. Vanhoy, and T. Bose, "Blind Channel Estimation for Massive MIMO," in Wireless Innovation Forum, 2016, pp. 204–210
- T. Peken, M. Hirzallah, and T. Bose, "Effect of Imperfect Channel Estimation on Spectrum Sharing Between the Massive MIMO System and MIMO Radar," in *the Proceedings of the SDR-WinnComm*, pp. 178 - 182, March 24-26, 2015
- Ozen, S.; Peken T.; Oktug. S., "Energy Efficient Wireless Sensor Network System for Localization", EMERGING 2012, The Fourth International Conference on Emerging Network Intelligence, pp. 43-48.
- Peken, T.; Aygolu, U.; , "Adaptive physical layer network coding," Communications and Networking in China (CHINACOM), 2011 6th International ICST Conference on , vol., no., pp.1146-1150, 17-19 Aug.

Curriculum Vitae

Odile Wolf

2222 E LA MADERA DR
Tucson, AZ 85719

tel: 520-576-7167

odile_wolf@hotmail.com

Education

1993-1998 **University of Oregon** PhD- ABD, Computer Science
1990-1992 **Maharishi International University** MS, Computer Science
1989-1990 **Université Louis Pasteur (Strasbourg I)** Licence, Computer Science
1987-1989 **Université de Provence (Aix-Marseille I)** D.E.U.G. A, Math – Computer Science - Mechanics

Additional Education and training:

2014 **Accessibility MOOC 2014**
2014 **Quality Matters reviewer update**
2013 **Designing your blended course (QM)**
2013 **Quality Matters reviewer certification**
2011 **Applying the Quality Matters Rubric certification**

Professional Experience:

Aug 2017 to present

Assistant Professor of Practice in Computer Science and Informatics,

University of Arizona South, Sierra Vista, AZ

- Taught classes in java, C, Databases, Algorithms, and Computational thinking and doing
- Taught online, blended and compressed classes
- Developed 5 online classes

Aug 2010 – May 2017

Faculty for CS and CSA, Pima Community College, Tucson, AZ

- Created 3 original classes in Android programming and 2 certificates
- Updated 10 existing classes curriculum
- Overhauled antiquated web programming certificate
- Initiated district wide book reviews
- Initiated collaborative effort for classes taught at various campuses
- Created 4 masters for online classes.
- Participated in College wide effort to create the self-study for Higher Learning Commission
- Participated in focused effort to create boot camps courses for networking boot camp
- Taught Online, Blended and Face to Face classes for beginning and advanced programming, data structures, C, android, computer applications, and introduction to computer science, as well as language specific classes.
- Initiated and negotiated new articulation agreements with the University of Arizona (February 2016- present)
- In the process of creating a new AA for transfer to the University of Arizona
- Developed OER material for online master courses
- Created new Digital and Information Literacy standards for the college (Sept 2016)
- Presented a lecture on “Microlectures” at the NW Tech Expo (March 2016)

2008-2010

Adjunct Faculty in CS, Pima Community College, Tucson, AZ

- Solely responsible for syllabi, and class structure. Taught online, blended and face to face.

April 1998 – January 2004

Software Engineer II/III, Timberline (Sage) Software, Beaverton, OR

Worked with a team of 2 to 17 people to develop shrink-wrap applications for property management and project management. Responsible for software performance, interaction with other in house applications, design documents, new feature definition and scoping, planning, client satisfaction issues, and defining milestones and schedules. Work with QA to maintain quality and respond to urgent issues coming from the field. Code new features, refactor and maintain existing C++ and C code on Windows XP, Windows NT, Windows 98, Windows ME, Window 2000 and Window XP using MFC technology and in-house UI.

1993-1998

Research Assistant & Teaching Assistant, University of Oregon, Eugene, OR

Performed research in the area of data mining, parallel debugging (state and event based), computer graphics, visualization, database, computer networks, software engineering, and computer ethics. Developed and taught courses in the areas of software engineering and object oriented programming for non-computer majors.

- Taught classes of up to 50 students. Teaching experience varied from teacher assistant to sole class responsibility, which required developing the syllabus and ordering books through posting grades.
- Co-authored "Event and State-Based Debugging in TAU:A Prototype," published in SPDT'96: ACM SIGMETRICS Symposium on Parallel and Distributed Tools.
http://www.cs.uoregon.edu/research/paracomp/publ/htbin/bibify.cgi?cmd=show&status=confirm&data_present=no&coll=CONF&id=spdt96

Leadership Activity:

July 2013 – May 2017

Department Chair for East Campus Computer Science (CS) and Computer Science Application (CSA), Pima Community College (PCC), Tucson, AZ

- Staff and manage all CIS, CSA, BUS, ACC adjunct faculty and classes
- Review all syllabi, classes
- Responsible for annual review for adjuncts.
- Includes online, blended and in person classes.
- Handle adjunct faculty-student conflicts

Jan 2014-May 2015

Active member of the Online Education Task Forces Pima Community College (PCC), Tucson, AZ

- Benchmarked other institutions online initiatives
- Surveyed and analyzed other institutions online faculty training, faculty and course oversight
- Developed solely or as a dyad most of the framework for Pima community college online campus including but not restricted to:
 - Online training framework
 - Teacher evaluation of online courses
 - Online department head responsibilities
 - QM review framework
- Wrote the Accessibility section used in the online faculty training

- Presented the effort information for approval to various groups including faculty senate
- Incorporated feedback from the groups into the framework

Feb 2012 – May 2015; Jan 2017-May 2017

Served as faculty representative to faculty senate, Pima Community College, Tucson, AZ

- As part of Criterion 5 (HLC), formalized the role of the newly created governing council
- Elected representative to two task forces charged by the chancellor to revamp the online education paradigm
- Defined the template for training Faculty, and Quality Assurance model for online and blended classes.

Aug 2011 – Aug 2014

Faculty Co-Chair for the CS and CSA College Discipline Area Committee Pima Community College, Tucson, AZ

- Lead District wide change for two classes, including curriculum overhaul which impacted the college at large
- Defined direction for the CS and CSA Committee
- Encouraged a collaborative movement in a committee filled with strife

Aug 2010 – Aug 2014

Faculty Student Learning Outcome (SLO) Leader for the CS and CSA College Discipline Area Committee, Pima Community College, Tucson, AZ

- Lead definition of SLO for Computer Science and Computer Science Application
- Distributed SLO, gathered results and analyzed them.

Community involvement

2017-present	Pima County Animal Care Center, Tucson AZ
2013-present	Lend A hand (help to seniors) , Tucson AZ
2012-present	Divorce Recovery group leader, Tucson, AZ
2011-2017	Valley of the moon, Tucson, AZ
2001-2005	Big Brother, Big Sister, Portland OR
1998-2001	Portland Women Crisis Line volunteer and board member
1996-1998	Emergency Room volunteer, Sacred Heart hospital, Eugene, OR

Ynosensio (Chito) Bañuelos

PO Box 142 • Hereford, AZ 85615 • 520.236.3480 • chitob@hotmail.com

SUMMARY OF QUALIFICATIONS

- Sr. Security Engineer with 24 years of experience in enterprise level computer networks, including 17 years specializing in Cyber Security
- Extremely well versed with Department of Defense and Federal IT Security requirements and regulations such as HIPAA, DIACAP, NIACAP, FISMA, DISA STIGs, NIST Special Publications, Common Criteria, JITC DICE, and others
- Highly skilled in performing Security Risk Assessments and Pre – Certification, and Certification and Accreditation evaluations
- Extremely proficient with creating policies and procedures to include Continuity of Operations Plans, Security Architectures, Configuration Management Plans, Incident Respond Plans, Concept of Operations, and others
- Systems Planning, Research, Development and Engineering Level III Acquisition Certified
- Information Technology Level III Acquisition Certified
- Certified Information Systems Security Professional
- Experienced with Microsoft products, Cisco equipment, various VPN products, IPSEC, PKI, Firewalls, NIDS, HIDS, IPS, Wireless, VoIP, VTCs, and various networking and security protocols
- Experienced with various scanning tools such as Retina, Appdetective, SCAP Tool, Wireshark, and others
- Possesses an active Department of Defense Top Secret/SCI security clearance, active until 04/23/17

PROFESSIONAL EXPERIENCE

Sole Proprietor IN2SEC LLC 10/12/12– Present

- **Sr. Cyber Security Engineer**
 - Provide assistance with identifying the Cyber Security requirements that apply to the system and/or organization. These requirements are derived from HIPAA, Department of Defense, Federal, agency specific, local policies and procedures, and best business practices
 - Provide training on HIPAA, Department of Defense, and Federal security requirements and processes
 - Provide assistance during every activity of the DIACAP process, or any other security engineering process, to ensure the system meets all applicable security requirements and is ready for a Certification and Accreditation evaluation. We can assist with creating artifacts such as;
 - Configuration Management Plan
 - Disaster Recovery Plan
 - Continuity of Operations and Contingency Plan
 - Incident Response Plan
 - System Security Plan
 - System Identification Plan
 - DIACAP Implementation Plan

- Acceptable Use Policy
- System Design Documentation
- External Interfaces
- Data Flows
- Logical Diagrams
- Plan of Action and Milestones (POAM)
- and others

Computer Scientist Department of the Army 12/19/10 – Present

- **Supervisor - Computer Scientist**
 - Security Engineering Group Leader responsible for the supervision of 24 professional engineers, IT specialists, and technicians performing systems engineering, security engineering, testing, technical integration, and certification of information systems (hardware, software, network, facilities, personnel, et al)
 - Provides leadership, mentorship, direction, and oversight to numerous assigned government and contractor teams operating throughout the full scope of the systems engineering process
 - Guides and directs systems analysis and engineering design efforts, determines the skills and qualifications needed to accomplish the work, and defines and assigns work packages to responsible elements
 - Develops engineering work breakdown structures as part of a workplan for eventual tasking of the internal and external organizations
 - Applies broad professional engineering knowledge and extensive experience of information systems to provide technical support, advice, and guidance for preparation of information system plans, systems design plans, test plans, SOWs, and specifications for major Army and DoD information systems to PEOs, PMs, Team Leaders, and Group Members.
 - Responsible for the execution of administrative and personnel management responsibilities related to the accomplishment of the mission assigned
 - Assists employees in preparing career plans; and participates in the development of work performance objectives
 - Ensure integration of efforts into a consolidated systems engineering product

Computer Scientist Department of the Army 04/26/09 – 12/18/10

- **Base Realignment and Closure (BRAC) – Project Lead**
 - Project lead of 13 Interdisciplinary and IT Specialists responsible for providing systems and security engineering during the relocation of 10 Army HQ organizations, Yongson South Korea, the Ft Belvoir Community Hospital, STRATCOM, DISA, and SOUTHCOM.
 - Responsible for planning, directing, coordinating, and advising on complex information systems involving systems engineering and technical integration
 - Responsible for planning, directing, and carrying out studies, designs, and assisting with the development of the transition strategy of Army Information Mission Area (IMA) systems supporting the 4-star headquarters relocating to new installations
 - Provide technical expertise, advice, and guidance for preparation of information systems plans and system design plans for the relocating organizations
 - Perform applied research, analysis, and engineering in support of information systems design and integration

- Participate in all ongoing technical teams involved with the engineering, testing, and implementation of the proposed technologies
- Provide expert opinion on final technical reports and briefings encompassing pertinent analysis, conclusions, and recommendations
- Develop Systems and Security Engineering planning, development, and implementation documentation to support the relocating organizations and gaining installations
- Responsible for designing and/or developing the security architecture, physical and technical security access controls, Business Continuity and Disaster Recovery Plan, Incident Response Plan, Security Concept of Operations (SCONOPS), and the Configuration Management Plan for the relocating organizations

IT Specialist Department of the Army 02/26/07 – 04/25/09

- **Base Realignment and Closure (BRAC) – Project Lead**

- Project lead of 13 Interdisciplinary and IT Specialists responsible for providing systems and security engineering during the relocation of 10 Army HQ organizations, Yongson South Korea, the Ft Belvoir Community Hospital, STRATCOM, DISA, and SOUTHCOM.
 - Responsible for assigning tasks, establishing schedules, managing funds, providing technical training, conducting briefs, and insuring that the project includes workplans and maintains the resources with the appropriate technical mix of in-house and contractor personnel to properly accomplish the work in the timeframe identified
 - Recognized and respected technical security engineer expert providing the technical management, strategy, critical planning, and leadership to 13 security engineers supporting the highly visible, congressional mandated Base Realignment and Closure act
 - Currently serving in a key role to maintain effective relationships within and Major Commands, Department of the Army, Department of Defense, NSA, DIA, and other federal and private agencies
 - Interpret policies, coordinate actions with other personnel as deemed necessary, and resolves unusual complex C4I development and integration problems associated with current and next generation services, systems, and networks to meet critical BRAC requirements
 - Provides technical guidance, expert advice and consultation, and coordinates with other team leaders to ensure integration and interoperability within and outside the Directorate, ISEC, CECOM, NETCOM, DA, and DOD programs and projects
 - Investigates and solves problems or resolves conflicts to assure the project will be completed in a timely and professional manner
 - Visits other government agencies to observe progress, and to assess and render advice and assistance on engineering inadequacies. Also applies any knowledge or practice gained to the Directorate and command where it makes sense
 - Responsible for Identifying and testing security protocols and products such as Wireless, VTC, VoIP, RFID, IPv6, PKI, Biometrics, IPSec, IDS, IPS, Firewalls, VPNs, HIDS, and HIPS
 - Regularly interfaces and briefs General Officers, SES, and GS-15 level personnel on the project's status to include cost and schedule

- **Cyber Security Certification Team Lead for the Program Executive Office Enterprise Information Systems (05/01/06 – 02/23/07)**
 - Team lead of 8 individuals responsible for the security certification and accreditation efforts for various US Army systems. Responsibilities included but were not limited to;
 - Managing numerous IA certification efforts of critical Army systems in direct support to PEO EIS
 - Assigning tasks, establishing schedules, providing technical training, and providing feedback on on-going and completed work
 - Making local and field technical assistance visits and inspections
 - Conducting detailed vulnerability assessments of systems ranging in size from stand alone servers to Campus Area Networks using automated and non-automated tools to determine potential vulnerabilities caused by technical, policy, and/or procedural shortfalls
 - Analyzing the vulnerabilities and determining the overall risks to the individual system, Campus Area Network, and to the global information grid
 - Developing all required security documentation such as Risk Assessment Reports as mandated by the Department of Defense Information Technology Security and Accreditation Process (DIACAP)
 - Representing ISEC at working group meetings, program status reviews, and design reviews for assigned systems
 - Preparing weekly, bi-weekly, and monthly status reports to ensure that all concerned parties are notified of project status and problem areas
 - Assisted with the development and implementation of the directorate's IA certification and security engineering processes
- **Cyber Security Analyst Team Lead for the Kuwait Area Telecommunications System (01/02/04 – 04/30/06)**
 - Team lead of 7 individuals responsible for all information security practices, to include architectural planning, design, testing, implementation, management, and auditing.
 - Provided the overall systems engineering and technical integration for the planning, development, acquisition, and implementation cycle during the relocation of Camp Doha to Camp Arifjan
 - Responsibilities and essential functions also included the development and implementation of system security policies and procedures such as Risk Assessments, Business Continuity Planning, Security Concept of Operations, Network Concept of Operations, and SSAAs
 - Served as the senior technical expert and key staff engineer responsible for developing, establishing/reengineering technical plans and policies for systems engineering and technical integration of Camp Arifjan's systems
 - Performed analyses and studies concerning the implementation of all assigned security systems
 - Provided on-the-spot recommendations for solutions to complex technical and non-technical issues
 - Performed technical testing of information systems to determine their ability to meet security requirements in both a laboratory and operational state
 - Designed Camp Arifjan's network infrastructure and wrote the network implementation plan to support the migration of data, equipment, and circuits with minimum user downtime

- Created Camp Arifjan's VLAN structure to provide security zones and enhance the performance of the network
- Scanned Camp Arifjan's network for vulnerabilities using tools such as nmap, ISS, Retina, and STAT
- Researched, recommended and implemented changes to procedures and systems to enhance the operating environment
- Monitored and reviewed intrusion detection, firewall, and access-list logs in order to enhance the security posture of the network
- Wrote the router, switch, and wireless security user guides
- Configured a lab to mimic Camp Arifjan's network to test and evaluate IA products and security tools

Senior Network Security Engineer I Raytheon 12/13/99 – 01/02/04

- **Cyber Security Architect for the Navy/Marine Corps Intranet (02/17/03 – 01/02/04)**
 - Member of the Network Architect Review Panel responsible for approving new solutions into the Local and Wide Area Networks
 - Reviewed customer's requirements and developed solutions that exceeded Service Level Agreements
 - Utilized a broad range of specialties within the Security Systems Engineering field to assure system integrity by establishing compatibility between equipment, other subsystems, and components
 - Conducted and/or participated in technical working groups to resolve complex problems
 - Performed analyses and studies concerning the implementation of all assigned cyber security systems
 - Prepared final technical reports and briefings encompassing pertinent analysis, conclusions, and recommendations for the Navy's cyber security systems
 - Prepared and presented formal or informal briefings and lectures on security and technical solutions to technical and non-technical personnel
 - Served as a security technical advisor for Raytheon
- **Secure Network Boundary Lead for the Navy/Marine Corps Intranet (02/12/01- 02/17/03)**
 - Supervisor of 7 security engineers tasked to support the Navy/Marine Corps Intranet in upgrading the Firewalls, IDS, Cisco Equipment, PKI, VPNs, Solaris, Wireless and Windows 2000 devices
 - Lab manager responsible for upgrading and maintaining networking devices utilized for certification and accreditation
 - Conducted extensive testing with Cisco, Alcatel, and Netscreen VPNs, using various IPSEC configurations to meet NSA specifications
 - Performed extensive monitoring and testing to determine database space requirements to successfully store event logs from various cyber security devices located throughout the Navy and Marine Corps Intranet
 - Developed a solution to synchronize Raptor Firewalls, Cisco Routers and Switches, Alcatel VPNs, Netscreen VPNs, Foundry ServerIron Load Balancers, Cisco IDS, Shadow IDS, ManHunt IDS, and Web and Mail Scanners to an inner Cisco 6509 serving as a Network Time Protocol Server without introducing any vulnerabilities to the network
 - Successfully integrated the Foundry ServerIron and the Alcatel VPN to successfully load balance traffic between VPNs

- Extremely knowledgeable with various security protocols and cryptographic algorithms including IPSec, IKE, 3DES, DES, SHA-1, and MD5
- **Network Security Engineer for the Navy/Marine Corps Intranet (06/01/00-02/12/01)**
 - Wrote the security policy for the Cisco routers and switches installed throughout the Navy and Marine Corps Intranet
 - Subnetted private class A and B address spaces for multiple working groups to provide a secure, segmented network environment which enabled successful testing in the Q&A, C&A, and Development Labs
 - Programmed the Cisco 7500, 6509, 4006, 3500, and 2900 series routers and switches for the Q&A and Development Lab
 - Responsible for installing an Active Directory forest in a mixed mode environment, which resulted in a successful simulation of inter-domain authentication utilizing Windows 2000, WinNT4.0, Exchange 2000 and Exchange 5.5
- **Network Security Engineer (12/13/99-5/31/00)**
 - Integrated a PKI implementation using Windows 2000 Certificate Authentication, Netscape iPlanet Certificate Management System, and SPYRUS ROSETTA smart card for the Navy and Marine Corps Intranet demo
 - Successfully tested e-mail encryption between clients using smart cards and certificates
 - Integrated multiple VLANS utilizing Nortel switches and routers in support of a security demo for a heterogeneous environment

Information Systems Analyst U.S. Army MacDill AFB, FL. 12/19/96-12/22/99

- Squad leader of a 14 member deployable networking team that provided NIPRNet, SIPRNet, and Internet access to various contingencies
 - Tracked unit readiness posture and assisted base agencies in deploying the communication equipment
 - Trained personnel on deployable communication systems
 - Extremely proficient at configuring Exchange 5.5, DNS, WINS, and DHCP for NT 4.0 on a dynamic LAN/WAN
 - Configure/Maintain Cisco routers using multiple routing protocols to include IGRP, EIGRP, BGP, and OSPF
 - Accountable for subnetting and managing two class C networks
 - Implemented several software upgrades on multiple catalyst switches and routers

Information Systems Analyst U.S. Army Fort Schafter, HI 4/19/94-11/18/96

- Shift leader of a 24/7 help desk which provided first level support to the Global Command and Control System, a UNIX based program running on a SUN Sparc 20 platform.
 - Responsible for assigning and tracking remedy trouble tickets, troubleshooting the problem, and assigning the solution to the field engineers
 - Provided technical support to GCCS workstation customers through out the island of Oahu, HI

- Team Leader and Administrator of a UNIX Network which provided medical logistic support to the base's general hospital
 - Engineered, installed, and maintained Wide Area Network support for 50 UNIX users at five remote locations

EDUCATION & CERTIFICATIONS

- Master of Science in Network Security, Capitol College, Maryland, 02/2005
- Bachelor of Arts Specializing in Information Systems, Eckerd College, Florida, 2002
- Bachelor of Science in Computer Science, Grantham University, August 2010
- Defense Acquisition Corp Member, 2008
- Certified Information Systems Security Professional (CISSP #116511), 2007

Training:

- Certified Level 3 Acquisition Professional in Systems Planning, Research, Development and Engineering
- Certified Level 3 Acquisition Professional in Information Technology
- VMWare
- IT Program Management
- Migrating to IPv6
- Certified Wireless Network Administrator
- Retina
- Securing Voice over IP
- Introduction to Voice over IP
- Windows 2003 Active Directory and Network Infrastructure
- Security Threat Avoidance Technology (STAT vulnerability scanner)
- Cisco Security Bootcamp
- Cisco Network Security
- Systems Network Support
- Internetworking with Microsoft TCP/IP on Microsoft Windows NT 4.0
- Microsoft Exchange Server 5.5
- Administering Microsoft Windows NT 4.0
- Supporting Windows NT 4.0 Core Technologies
- Supporting Windows NT Server 4.0 Enterprise Technologies
- Cisco Router Configuration
- Solaris System Administrator
- UNIX Advance System Administrator
- Basic UNIX

Juan D. Cannon, US Army Veteran
7703 Moores Road Brandywine, Maryland 20613
Contact Number: (240) 381-0789
juancannon@hotmail.com
Cyber Intelligence / Information Assurance Professional
Active DoD Top Secret Clearance w/SCI

Objective

To obtain a Cyber Intel/Network Security/Information Assurance leadership position, in an organization that offers professional development, and career advancement.

Education and Certifications

- Master of Science (MS) in Information Assurance from University Maryland University College
- Bachelor of Science (BS) in Information Technology w/concentration in security from Strayer University
- Lockheed Martin Advanced Technical Leadership program (Graduate 2014)
- Certified Information Systems Security Professional (CISSP)
- Advanced Security Practitioner (CASP)
- Certified Information Systems Auditor (CISA)
- Certified Ethical Hack (CEH)
- Security +
- Network +
- A+ (IT Technician designation pathway)

Professional Experience

Lockheed Martin October 2009-Present

Cyber Intel Analyst - Lockheed Martin March 2015-Present

Perform countermeasure verification analysis, cyber fusion analysis, and action officer functions for the Defense Information System Agency (DISA) DISA Command Center (DCC).

Duties performed:

- Leads team of seven responsible for completing cyber security tasks including planning, coordination, implementation, validation, mitigation and compliance.
- Establish and leads Operational Planning Teams (OPT) to issue orders, establish reporting portal and provide status reporting to higher authority.
- Coordinate with Cyber Command (CYBERCOM), National Security Agency (NSA), Joint Force Headquarters-Department of Defense Information Network (JFHQ-DoDIN) and other mission partners to help shape DCC Network Assurance (NA) strategy including prioritizing DoDIN incidents, emerging cyber threat activity, or emerging network vulnerabilities
- Prepare and present senior-level briefings to Government Executives.
- Troubleshoot Defensive Cyber Operations (DCO) tools for problems with functionality or performance and recommend solutions.
- Train Fusion Duty Officer (FDO) and Countermeasure Duty Officer (CMDO) personnel.
- Monitor, correlate, and analyze operational reporting received from DOD, Intelligence, LE, and open sources pertaining to intrusion-related activities.
- Monitor and share adversary tactics, techniques, and procedures (TTPs). This includes indicators that can be used to detect, monitor, and counter the activity for DISA and the DOD. Verify the effectiveness of countermeasures implemented on the boundary, network, and host levels.
- Use ArcSight to provide effective metrics for DoDIN-wide mitigation reporting and efficiency for countermeasures.
- Serve as SME in DoD computer network defense with an understanding of the lifecycle of the network threats, attack vectors, and network vulnerability exploitation.

Cyber Intel Analyst for at the Defense Cyber Crime Center (DC3) Lockheed Martin September 2012-March 2015

Served as a Defense Industrial Base (DIB) Certification Officer for the DoD/DIB Collaborative Information Sharing Environment (DCISE).

- Analyzed network traffic, exploitation software and provided security feedback to enterprise wide leadership, with a specific focus on critical Defense Industrial Base.
- Reviewed threat data from multiple sources to establish the identity and modus operandi of hackers active in DIB networks and posing potential threat to DIB networks, data and persons.
- Correlated data derived from a variety of sources, including Commercial off the Shelf (COTS) security products and customer developed intrusion detection and malicious activity identification reports.
- Reviewed, produced, and disseminated cyber threat assessments.
- Coordinated cyber threat tracking with counterpart organizations in industry and the government and assisted in developing reports, briefings, and assessments to facilitate understanding of cyber threats and environments.
- Authored INFOSEC related reports supported by pattern and technical analysis of adversary cyber operations.
- Reviewed cyber threat related data from various sources and conduct analysis to establish the identity, targeting patterns and objectives of threat actors attacking DIB, CI/KR, and DoD networks.
- Supervisory analyst that providence guidance and oversight to other analysts.

**Lockheed Martin Advanced Technical Leadership Program
Lockheed Martin January 2012-August 2014**

Successful completion of leadership program focused on shaping future leaders to help Lockheed Martin maintain the safety and security of global marketplace operations. This intensive program allowed for strategic thinking career security professionals to gain the experience and exposure they need for a future leadership role with the company. It entailed executive mentoring, rotational opportunities and graduate level education.

**Air Force District of Washington Information Assurance Officer (IAO)/System Security Engineer (SSE)
Lockheed Martin March 2012-October 2012**

- Performed duties as appointed Information Assurance Officer (IAO) for unclassified and classified systems. Ensured the implementation of security measures for Information Systems (IS) in accordance with Government directives and facility procedures.
- Identified security risks, threats and vulnerabilities of networks, systems, applications and new technology initiatives.
- Conducted vulnerability scans, testing and operation for various risk assessment software and application tools such as eEye, Retina, and Nessus.
- Provided security engineering guidance to include designs and implementation in all aspects of Information Assurance and Information Security (InfoSec) Engineering. Which included assessing and mitigating system security threats/risks throughout the program life cycle; validated system security requirements definition and analysis; established system security designs; implementing security designs in hardware, software, data, and procedures; verified security requirements; performed system certification and accreditation planning and testing and liaison activities, and supports secure systems operations and maintenance

**Vulnerability Management Team Lead for the Department of Homeland Security Headquarters Component
Lockheed Martin October 2009-March 2012**

- Interacted with senior personnel and management on significant technical matters requiring coordination between organizations. Day to day activities were performed without direction.
- Exercised considerable latitude in determining technical objectives and approaches to assignment(s). Activities were completed and reviewed from a short, medium, and long-term perspective, for desired results
- Applied extensive technical expertise, and maintained knowledge of other related disciplines by continued education
- Conducted the successful completion of major program task and many times function in a project leadership role. Recommendations resulted in achieving key organizational objectives

**Enterprise Information Assurance Officer (IAO) for the Air Force District of Washington (AFDW)
IA2, Inc. / Sub for Lockheed Martin September 2007–October 2009**

- Assisted the Enterprise Information Assurance Manager (IAM) in meeting their duties & responsibilities.
- Completed and maintained required IA workforce management according to Air Force guidance

**Standard Desktop Configuration Technician for the Air Force District of Washington (AFDW)
Apex Systems / Sub for Lockheed Martin February 2007–September 2007**

- Performed desktop/operating system migration and rollout in a Government environment.

**Diplomatic Security, Uniform Protection Branch
Inter-Con Security Sys, Inc. December 2004–February 2007**

- Responsible for the security of the physical property and persons at the U.S. Department of State. Worked in the Security Control Center which serves as the communications center for all Uniformed Security domestic operations.

Training

March 2016	SharkSeer Training	October 2015	ArcSight ESM 6.5 Administrator and Analyst - ATP
June 2015	Cyber Kill Chain (CKC) training	2014	Capability Maturity Model Integration (CMMI)
December 2013	CCNA training	July 2013	SANS GSLC training
September 2011	NSA Blue Team Training	October 2012	Experiential Cyber Immersion Training and Exercises (EXCITE)
August 2011	Big Fix Training	June 2010	McAfee ePO & Anti-Virus, McAfee University

Awards & Recognitions

Recognition award from Program Manager
DC3 recognition of superior support of the mission departure award
DC3 Service Appreciation Award
Lockheed Martin Special Recognition Award
Selected to the Lockheed Martin Advanced Leadership Development Program
Lockheed Martin Certificate of Appreciation
Lockheed Martin Spot Award
Lockheed Martin employee quarter award
Lockheed Martin IT Nova IA Appreciation Award
Lockheed Martin award for excellence Information Assurance employee of the quarter AFDW Lockheed Martin employee quarter award
IA2 employee appreciation award for outstanding work
Certificate of Appreciation, Uniform Protection Branch Dept of State Certificate of Appreciation, United States Army
Army Commendation Medal
Good Conduct Medal
Army Achievement Medal National Defense Service Medal
Overseas Service Ribbon
Army Service Ribbon

Gurmindersingh (Gini) J. Khalsa, 32°

11213 Suffolk Drive
Hagerstown, Maryland 21742
gini.khalsa@live.com
(301) 676-1952

Summary of Qualifications Master of Science in Information Technology, 2015
CISSP, February 19, 2016, valid until 2/28/2019
Microsoft Certified Trainer, August 1999, Active
MCITP: Enterprise Administrator, August 2009, Active
CompTIA Security+, 2014, valid until 11/2020
MCSE: Windows Server 2003, Windows Server 2000, Windows NT 4.0
MCSA: Windows Server 2008, Windows Server 2000

24 years of IT experience in FDA
18 years of Windows NT/2000/2003/2008/2012 experience.
10 years of Oracle experience.
20 years of teaching experience in an academic environment.

Professional Experience

Supervisory IT Specialist, NIST/ITL/CSD/STVM

7/28/2014 – Present

Serving as a team leader in the Information Technology Laboratory, Computer Security Division, Standards, Testing, Validation, and Measurements (STVM) Group (ITL/CSD/STVM).

Serving as the systems security officer for ITL/CSD.

Mentored high school students during Summer 2016 and Summer 2017 SHIP programs.

Supervisor: Michael J. Cooper, STVM Group Manager,
michael.cooper@nist.gov, (301) 975-8077
100 Bureau Drive, Gaithersburg, MD 20899

Supervisory IT Specialist, FDA/OO/OIM/DS/DMO/COTS

1/2009 – 7/26/2014

Served as Commercial off the Shelf (COTS) team leader.

Provided leadership and guidance to a team of 7 technical and project management staff that manage and support enterprise COTS applications such as HP Service Center, EMC products (Documentum, eRoom, CenterStage, Captiva/InputAccel), Oracle Call Center/Automated Call Distribution, and a host of other applications that are used by FDA staff.

Mentored three entry-level technical staff on my team.



Oversaw the successful migration of several projects (EDR, eCTD, CVM Project Server, White Oak Event Management System, HP Service Manager) from one data center to two new data centers. These applications required knowledge of databases, operating systems, web servers, network firewall rules. Additionally, where applications required software changes, SDLC processes were followed. All applications underwent security assessments at various tiers (development, test, pre-production, production). Additionally, all changes underwent change and configuration management best practices.

Received CIO's Award of Excellence in 2012 for serving as an advisor/consultant on the FDA Adverse Event Reporting System (FAERS).

Received the first Michael Stoos Technology and Innovation Award in 2010 for ICT21 and other project work.

Supervisors: Capt. Kellie Clelland, Division of Systems Director, kellie.clelland@fda.hhs.gov, (301) 796-7915; Ms. Swati Kulkarni, Data Management and Operations Branch Chief, swati.kulkarni@fda.hhs.gov, (301) 796-7825

Main address: 10903 New Hampshire Avenue, Silver Spring, MD 20993

IT Specialist (Systems Analyst), FDA/CDER/OIT/DADS

8/2005 – 12/2008

Served as Electronic Document Room (EDR) Architect. Providing analysis, design, development, and systems infrastructure expertise for a variety of projects. For the EDR project, designing and developing a Visual Basic application that will run as an operating system service under Windows Server 2003 which will integrate with Exchange Server, Oracle, and Adobe Acrobat to automatically process incoming submissions by drug industry partners. Additionally, since the EDR serves as a backbone for several other CDER applications, I was responsible for designing and developing a development and testing environment (which currently does not exist) that will run on virtual systems under VMware, an idea which I presented to management to reduce costs.

IT Specialist (Network), FDA/OSS/OITSS/DAE

9/2003 – 8/2005

Served as senior technical member of "Systems Integration" (SI) team responsible for designing, developing, and implementing a single desktop/laptop configuration based on Windows XP Professional for all of the FDA centers after reorganization of several center IT groups were consolidated into a single entity (OITSS). Provided technical guidance to other members of SI, as well as members of OITSS located throughout the US.

IT Specialist (Operating Systems), FDA/CDER/OIT/DIMS



9/2000 – 9/2003

Served as Desktop Management Team (DMT) Technical Coordinator.
Provided technical guidance and direction to DMT technical staff.

Worked closely with DMT Team Leader to ensure that the technical direction of the team is aligned with business needs of the Center.

Served as Acting DMT Leader during DIMS reorganization from May 2002 through August 2002.

Member of DMT responsible for managing all aspects of desktop computer systems in the Center. Responsible for planning, designing, and implementing Microsoft Windows 2000 Professional in the Center.

Responsible for developing, mentoring, and training technical staff on Windows NT/2000 and emerging information systems technologies.

Served as chairman of FDA Windows NT/Admin Sub-Technical Working Group. This group was responsible for resolving current technical issues regarding Windows NT/Windows 2000 issues and presenting/recommending standards to the FDA IT Committee for future implementation agency-wide.

Computer Specialist, FDA/CDER/OIT/DADS

9/1998 – 8/2000

Planned, designed, developed, and implemented enhancements for Center's Inactive Ingredient Guide (IIG). The IIG was a publication that allowed Center officials to notify drug companies for ensuring that the drugs which they claim are generic are in fact generic. This could only be determined by comparing the inactive ingredients.

Planned, designed, developed, and implemented enhancements for Center's Drug Master File (DMF) database. The DMF database allowed Center staff to record and track correspondence with drug companies regarding drug submissions.

Planned and oversaw migration of Oracle applications on a VAX/VMS environment to an Alpha/OpenVMS environment for Center's St. Louis facility.

Designed, developed, and implemented database applications using Oracle and SQR products in an OpenVMS and client/server environment for use by Center staff.



Planned, designed, developed, and implemented the Freedom of Information (FOI) Response module for Center FOI staff.

Individually developed an application to report results via email for jobs that require monitoring using both DCL (VMS command language) and SQR. This application led to increased productivity for me.

Developed user documentation.

Point of contact for Year 2000 activities for several applications.

Developed an application during an overtime project for CDER/OIT/DIMS to remove previous versions of McAfee VirusScan and install latest version to more than 1,600 desktops.

Provided ad-hoc mentoring to CDER/OIT/DIMS staff on the use of Wilson Windowware's WinBatch and WinEdit scripting products.

Computer Specialist, FDA/CDER/OIT/DIMS

10/1997 – 9/1998

Provided Windows NT server management for the Center servers.

Provided Windows NT technical guidance to other offices and divisions.

Planned, designed, and implemented Microsoft Systems Management Server using SQL Server in the Center.

Member of team responsible for planning, designing, and implementing Microsoft Exchange Server in the Center.

Initiated new programs to improve current information systems resulting in substantial reduction in resources in the agency.

Developed, mentored, and trained technical staff on Windows NT and existing and emerging information systems technologies.

Provided technical guidance to drug industry enabling better interaction between systems.

Member of Center 'WebIT R&D' committee to evaluate current environment and test new technology to improve information systems environment for the Center.



Managed Windows NT servers for the Division Files System project.

Computer Specialist, FDA/CDER/OM/DISD/ISBII

6/1993 – 10/1997

Provided desktop support to fellow staff and end users within the center.

Developed applications to install applications on end user systems via network using Pascal and scripting languages for MS-DOS and Windows.

Performed beta testing for Persoft's SmarTerm 420 for Windows, Attachmate Canada's (formerly KEA Systems) KEA!, and Microsoft Windows 95, Windows 98, Windows NT 4.0, Windows NT 5.0.

Served on the FDA agency-wide committee to evaluate and implement Windows 95 as a standard operating environment not only within CDER but also within FDA.

Initiated use of Windows NT 4.0 servers for localized applications and file sharing. This led to implementing Windows NT not only within CDER but FDA as well.

Computer Programmer, FDA/CDER/OM/DISD/ISBI

3/1990 – 6/1993

Developed several Oracle SQL*Forms and SQR applications.

Designed, developed, and implemented an innovative solution using both VAX-based and PC-based Oracle RDBMS platforms. This required knowledge of designing and managing an Oracle RDBMS on an Intel PC platform which had not been implemented within CDER before. Developed user documentation for applications developed.

Teaching Experience

Adjunct Faculty, Blueridge Community & Technical College, Martinsburg, WV

8/2009 – Present

Currently teach courses on Windows 7/8.1 and Windows Server 2008/2012 for the Microsoft Certified Systems Administrator certification track, Network+.

Taught IT Project Management, Security+, and Computer Information Literacy and any other courses as requested.



Taught Introduction to Virtualization (products covered: VMware ESXi 5.5 and Workstation, Microsoft Hyper-V on Windows Server 2008 r2 and Windows 7, and Oracle VirtualBox) and Introduction to Linux in Spring 2014.

13650 Apple Harvest Drive, Martinsburg, WV 25403
Supervisor: Ms. Michele Morrison, mmorriso@blueridgectc.edu, (304) 260-4380

Adjunct Faculty, West Virginia University (Parkersburg), Martinsburg, WV
9/2012 – 12/2012

Taught Operating Systems Security (SEC-430).

Adjunct Faculty, Hagerstown Community College, Hagerstown, MD
10/1997 – 12/2010

Taught courses ranging from Introduction to MS-DOS to Implementing and Supporting Windows Server 2008.

Received Innovation Award in 2000 for introducing curricula for Windows Server 2000 which led to several new courses being offered at the college for continuing education as well as credit students.

Instructor (Contract), I/Tech, Frederick, MD
9/2002 – 12/2003

Taught Microsoft Certified Systems Engineer courses for Shepherd College, Martinsburg, WV. Courses includes: Microsoft Win2K Network and Operating System Essentials, Implementing MS Win2K Professional/Server, Implementing MS Win2K Network Infrastructure, Implementing MS Win2K Directory Services, Managing MS Win2K Network Environment, Designing MS Win2K Directory Services Infrastructure, Designing MS Win2K Migration Strategy.

Education

Pursuing Doctor of Science (Information Assurance), Capitol Technology University
6/2016 – Present

Coursework completed: Fundamentals of Doctoral Learning; Information Assurance Literature; and Professional Research Theory & Practice I.



Certified Information
Systems Security Professional



Master of Science (Information Technology), Hood College

6/2011 – 5/2015

Graduated with 3.63 GPA.

Coursework completed: Contemporary Issues in Information Systems; Management Issues in Information Technology; Managing Technical Project Teams; Network and Internet Security; Security Policies, Ethics, and Law; Telecommunications and Networking; Systems Engineering and Integration; Database Management Concepts; Object Oriented Methods (Independent Study); Information Systems Security.

CISSP Certification Bootcamp Course, Training Camp, Falls Church, VA

06/15/2015-06/20/2015

Security+ Certification, CompTIA

11/2014

Bachelor of Science (Computer Information Systems), Strayer College

1993 – 1997

Graduated Magna Cum Laude

Coursework completed: Software Engineering; Systems Analysis and Design; Network Management; Database Management; "C" Programming I and II; Management Information Systems.

MCITP: Enterprise Administrator, Self-Paced

2009

Coursework: Upgrading skills from Windows Server 2003 to Windows Server 2008.

Contract Officer's Technical Representative, FDA Online/Self-Paced

2009

Coursework: COTR course.

Leadership Development, FDA: Shepherdstown, WV

2002

Coursework: Leadership Skills I (FAME).

Windows Server 2000, FDA-Sponsored at IKON Office Solutions

2000

Coursework: Updating Support Skills from Windows NT 4.0 to Windows 2000, Designing Windows 2000 Active Directory Services, Designing Windows 2000 Migration Strategy, Designing Windows 2000 Security.

Windows Server 2000, Hagerstown Community College Sponsored

2000

Coursework: Implementing and Supporting Windows 2000 Professional and Windows Server 2000.



Instructional Techniques Workshop, Friesen Kaye and Associates

1999

Coursework: 3-Day workshop required for Microsoft Certified Trainer certification.

Various Windows Server Technologies, FDA-Sponsored at RRTC

1994 – 1996

Coursework: Implementing and Supporting Windows 95, Windows NT 3.51 Fundamentals, Implementing and Supporting Windows NT Server 3.51, Implementing and Supporting SQL Server 6.0, and Implementing and Supporting Systems Management Server 1.1.

Pursued Bachelor of Science (Information Systems), George Mason University

1986 – 1989

Coursework: Systems Analysis and Design, Database Management, Management Information Systems.

Associate in Applied Science (Data Processing), Northern Virginia Community College

1983 – 1986

Coursework: Structured Programming; Systems Analysis and Design; Database Management; COBOL; Advanced COBOL; Pascal; Advanced Pascal; FORTRAN; Operating Systems (JCL); "C" Programming; Desktop Applications: dBASE, Lotus 1-2-3.

Other Skills

Work extremely well in a team oriented environment.
Ability to work with outside technical consultants and others.
Excellent writing and presentation skills.
Management and mentoring skills.
Highly self-motivated.



Certified Information
Systems Security Professional



Henry A. Werchan

715 E. University Blvd.
Tucson, AZ 85719

(520) 205-1560
henry.werchan@gmail.com

OVERVIEW

Thirty years hands-on, technical, management and leadership experience in developing and deploying complex network management and security systems. Proven record in adapting and deploying commercial off-the-shelf products in support of complex system requirements. Well versed in scrum agile based systems and software engineering and development as well as project management.

PROFESSIONAL HISTORY

Principal Engineer & Program Manager General Dynamics 2005 - Present

Responsible for network and security management across General Dynamic programs. Includes definition and refinement of operational concepts and derived requirements, design review and feedback, identification and pursuit of business opportunities, and liaison and interaction with the government, user community, and other companies and organizations.

- Interface with customers and user communities to determine requirements and translate these into operational needs and system deployments and upgrades.
- Define technical solutions in support of current and emerging programs; identify applicable hardware and software solutions.
- Provide input and guidance to internal research and development programs to ensure investment is aligned with customer trends and capabilities.
- Implementation of unified information security solutions based on the NIST Risk Management Framework.
- Scrum agile based development of cloud computing security management system.
- Penetration testing and security vulnerability assessment and analysis.

Senior Member of the Technical Staff The MITRE Corporation 1999 - 2005

Technical lead for communications, network and systems management, and information security for government and military organizations worldwide.

- Designed and implemented network and security management capabilities, including development and fielding of an appliance-based device to monitor bandwidth utilization, protocol distribution and intrusion detection.
- Designed and implemented a fiber based local area network for tactical command posts as part of a converged network design including streaming video, voice over IP and other network-based services. Decreased deployable cable infrastructure by 90%.

Business Area Technical Lead Ephibian Incorporated

1996 - 1999

Technical lead for a startup company in the network and security management business area. Provided systems engineering and operations support to major commercial and government customers. Business model culminated in a multimillion dollar evaluation within three years, with a corresponding employee growth from seven to 30+.

- Led technical and business development effort in building a world class network operations center in support of a major airport internet kiosk provider and other commercial customers.
- Established network operations center for the State of Tennessee Department of Education K-12 education network.

Communications Officer The United States Army Reserve

1991 - 1995

Communications officer for an armor battalion. Executed the first deployment of frequency hopping radio technology within the U.S. Army Reserves.

Member of the Technical Staff The MITRE Corporation

1991 - 1996

Technical and project management lead for systems engineering activities in the areas of network and systems management, distributed and client-server systems, information technology, and communications. Hands on experience with rapid prototyping and integration of commercial off-the-shelf products.

Communications Officer The United States Army

Responsible for communications engineering, automation, and network and security management. Planned, engineered, and managed voice and data communications networks deployed world-wide. Engineered and managed the Army's deployed communications network during operation Desert Storm.

Education

Enterprise Security Certification, The University of Arizona	2015
Master of Science Electrical Engineering, The University of Arizona	1992
Bachelor of Science Electrical Engineering, Texas A&M University	1986

Certifications

SAFe 4 Certified Scrum Master
CNSS 4011: Information Systems Security Professional
CNSS 4012: Senior Systems Manager
CNSS 4013: Systems Administration
CNSS 4016: Risk Analyst

Sandra Moore

Doctoral Candidate, M.S., CISSP, CHFI, CCFE

E-mail smooore153@gmail.com

Phone 702-343-0639

Summary I am currently the Director of the Network Operations program at the University of Arizona Sierra Vista, where I overhauled an outdated program in 1.5 years resulting in increased enrollment and implemented advanced hands on labs both in face to face and online courses. I have lead projects, supervised and trained personnel on technical analysis procedures, briefed government and high-level clients on cyber threats, and conducted quality control on products prior to dissemination.

Certifications: Certified Information Systems Security Professional (CISSP), July 2013
Certified Hacking Forensic Investigator (CHFI), August 2012
Certified Computer Forensics Examiner (CCFE), August 2012
Security+, 2010

Education **Doctorate of Science, Expected Fall 2019**
Specialization: Cybersecurity
Capitol Technology University, Laurel, MD

Master of Science, Graduated May 2012
Major: Cyber Security: Intelligence/Forensics
Utica College, Utica, NY

Bachelor of Science, Graduated August 2008
Major: Cyber Security and Information Assurance, Emphasis in Computer Forensics
Utica College, Utica, NY

Bachelor of Arts, Graduated December 2001
Major: Media Arts, Emphasis in Production
Minor: Criminal Justice
University of Arizona, Tucson, AZ

Training SANs Advanced Forensics and Incident Response Course

- Memory Forensics
- Threat Hunting and Incident Response

Air Force Institute of Technology (AFIT)

- Information warfare
- Computer Network Attack and Defense

Wright-Patterson AFB, OH

- Computer Exploit Development: Buffer Overflow/Stack Overflow

Employment **Program Director** June 2016-Present
Assistant Professor, Network Operations
University of Arizona, Sierra Vista Campus
Member of National Cyber Watch Center's Curriculum Standards Panel
(NCC-CSP) 2016-2017

Program Director:

- Serve as Program Director and overhaul ten-year-old network administration program
 - Revamped the Network Administration program in 1.5 year

- Changed the program name to Network Operations to modernize the curriculum and stay current with industry trends
- Create/develop modern and up to date network operations program
- Develop advanced coursework to include new Online and face to face courses in
 - System administration, healthcare IT, cyber intelligence, network analysis, modern network design, network security, incident response and advanced digital forensics
- Collaborate with Cyber Operations and developed classes adhering to the NSA CAE standards
 - Assisted the Cyber Operations program become designated as a 1 out of 10 cyber operations NSA designated Center of Academic of Excellence
 - Program designated in May 2018
- Hire and Oversee highly qualified Network and Cyber Security Adjunct professors
- Instruct and mentor students in cyber intelligence, computer networking and digital forensics
- Conduct Outreach with Community College Advisory Boards and Industry partners

Assistant Professor:

- Instruct students on complex technical material within multiple modalities
 - Online, hybrid and face to face courses
- Teach courses in:
 - Advanced Forensics
 - Cyber Intelligence
 - Network Security and Defense
 - Network Fundamentals
 - Cybersecurity
 - Informatics
- Experience with Quality Matters
- Coordinated 2018 Student Showcase
- Served on Technology Committee
- Member of Cyber Watch West
- Collaborate with Industry and government partners, as well as International partners
- Collaborate with International Consortium Minority Cybersecurity Professionals (ICMCP)
- Instruct and mentor diverse group of students
- Coordinate with Faculty in Informatics, Cyber and Computer Science to offer in depth network analysis to all programs
 - Developed network analysis course which is now part of the core required courses for four programs

Adjunct Professor Digital Forensics/Incident Response
Capitol Technology University

January 2014-2016

- Instruct students on computer forensic investigations/incident response
- Provide detailed and real world experience regarding the forensic investigative process
- Create mock forensic investigations/labs to include the use of current digital forensics tools

Lead Technologist
Cyber Analyst
Booz Allen Hamilton

October 2014- May 2016

- Serve as a network analyst as part of a Computer Network Operations (CNO) team, focusing on traffic analysis

- Perform passive fingerprinting techniques on network traffic to characterize physical and logical layout
- Conduct research and evaluate technical analysis with specific emphasis on network operations and tactics, techniques, and procedures
- Analyze network events to determine the impact on current operations and conduct research to determine capability and intent
- Produce high quality papers, presentations, recommendations, and findings for senior level clients
- Provide training to junior staff on tools, techniques, and procedures for conducting network traffic log analysis

Sr. Intelligence Analyst, Defense Industrial Base CERT Officer (DCO)

October 2013-October 2014

Defense Cyber Crime Center (DC3)

General Dynamics Information Technology (GDIT)

- Lead and train incoming DIBCERT Analysts in an operations floor environment
- Determine product assignment for DIBCERT Analysts
- Conduct quality control analysis of all DIBCERT products prior to dissemination
- Disseminates publications to DIB Partners and US Government agencies
- Respond to Requests For Information (RFI)
- Continually provide process improvement of daily operations
- Provide end of day summary reports to the Director of DC3 and senior level government agencies
- Engage with cyber intelligence analyst counterparts across the US Intelligence and Law Enforcement communities
- Liaison with other DCISE cells and government agencies
- Periodically attend Branch Manager meetings
- Produce analytical reports for DIB Framework Agreement Partners, US Government Stakeholders, and other government partners that are responsible for providing computer network defense
- Provide indicators for defense in depth procedures to secure enterprise networks
- Produce products to include malware and forensic analysis for technical and non-technical individuals
- Apply knowledge of Advance Persistent Threat (APT) sets to enhance quality of reporting and correlate prior cyber events to provide a complete view of TTPs for each set
- Analyze event data and correlate information security threats from network data (proxy, firewall, IDS/IPS, router/switch logs and packet captures)
- Provide technically detailed cyber briefs to government and Defense Industrial Base clients
- Provide weekly activity report for DIBCERT operations to DCISE management
- Monitor Communication Portals and represent DC3/DCISE as a subject matter expert to DC3 Partners

Intelligence Analyst

February 2013-October 2013

Defense Cyber Crime Center (DC3)

General Dynamics Information Technology (GDIT)

- Respond to Requests For Information (RFI)
- Engage with cyber intelligence analyst counterparts across the US Intelligence and Law Enforcement communities
- Produce analytical reports for DIB Framework Agreement Partners, US Government Stakeholders, and other government partners that are responsible for providing computer network defense
- Provide indicators for defense in depth procedures to secure enterprise networks

- Produce products to include malware and forensic analysis for technical and non-technical individuals
- Apply knowledge of Advance Persistent Threat (APT) sets to enhance quality of reporting and correlate prior cyber events to provide a complete view of TTPs for each set
- Analyze event data and correlate information security threats from network data (proxy, firewall, IDS/IPS, router/switch logs and packet captures)
- Provide technically detailed cyber briefs to government and Defense Industrial Base clients
- Monitor Communication Portals and represent DC3/DCISE as a subject matter expert to DC3 Partners

Computer Scientist

December 2011-February 2013

Department of the Air Force

- Analyze, produce and disseminate Cyber Threat Analysis products for government agencies
- Produce quarterly situational awareness reports regarding current cyber threats to the Air Force
- Maintain confidentiality and integrity of information systems
- Analyze forensic reports and collaborate with other government agencies on intrusion sets
- Conduct threat vector Analysis by correlating current cyber threats targeted towards the Department of Defense (DoD)
- Provide situational awareness to employees on physical safety measures, to include locations of fire extinguishers, AEDs, muster points and act as CPR instructor for military and civilian members
- Facilitate SharePoint, update product information and assist users

Legal Office, Student Clerk

September 2010 – December 2011

U.S. Customs and Border Protection

- Conduct e-Discovery and electronic based evidence gathering for trial preparation
- Implement encryption protocols/solutions to ensure confidentiality and integrity PII of staff members
- Deliver training to new clerks on procedures regarding confidentiality of PII and data according to the Freedom of Information Act (FOIA)
- Provide security services by logging and checking visitor identification prior to admittance
- Direct use of biometric software to record Identifying information for purposes of authenticating Staff members
- Process Federal Tort Claims and provide necessary documentation to petitioners
- Maintain database tracking system by Open/Close files, Upload Supporting Documentation
- Redact documents and process according to the Freedom of Information Act (FOIA) in order to maintain data integrity and confidentiality
- Archive Case files
- Create and update procedure manual for staff members
- Provide research/trial preparation assistance to the Assistant Chief Counsel and legal staff

Nook e-Reader Support and Café Member

November 2009 - December 2010

Barnes & Noble

- Provide technical support for Nook e-Reader to include OS patches/updates/updates/troubleshooting
- Explain technical information to non-technical customers
- Secure and maintain equipment within a restricted and locked environment
- Electronic Sales
- Deploy products in timely manner

Patient Care Technician September 2008 - January 2010
El Dorado Urgent Care

- Update patient database and authenticate patient PII via insurance portal
- Maintain patient confidentiality and PII in a secure manner by
- Monitor and log entry into facility
- Maintain and inform patients and staff of HIPAA laws/regulations
- Assist Doctors and Nurses in the care of individuals
- Financial transactions/logging of transactions

IT/IS Support Specialist May 2008 - October 2008
US Geological Survey/University of Arizona

- Troubleshoot, provide client support and help-desk functions to staff members
- Install security patches onto client/staff computers and ensure systems remain up and running by monitoring current security bulletins for potential risk
- Install, configure, backup, maintain production server environments
- Linux/Unix configuration
- Configure RAID arrays
- Maintain weekly and monthly reports
- Assist with disposal of old equipment per DOD established procedures

Barista March 2008 - September 2008
Starbucks Coffee Company

- Assist customers in stressful environment
- Provide customer service and coffee-oriented knowledge
- Deploy products in timely manner

Emergency Medical Technician June 2004 - December 2007
Southwest Ambulance

- Provide emergency medical care to the sick and injured
- Maintain compliance of HIPPA and medical-legal aspects
- Provide and review HIPPA regulations to new hires and various training materials
- Provide exceptional customer service

International Customer Service Representative September 2003 - June 2004
TeleTech

- Provide international customs information
- Provide technical support/assistance
- Provide detailed information on products that can and cannot be shipped

Tools/Skills Volatility, Redline, Memory Forensics, Autopsy/SleuthKit, Nessus, Wireshark, BackTrack/Kali Linux, Forensic Tool Kit (FTK), FTK Imager, Metasploit , WinDbg, TCP/IP protocols, Snort, Pfsense, Windows and MAC OS, Palantir, Apache, Samba, Linux/Unix, VMware, Windows Server 2008/2012, Desktop Support/Configuration, Database Design & Development, Limited Python

Honors Best New Faculty of 2014 award
Diversity Leadership Award 2012
U.S. Customs and Border Protection Unit Citation for outstanding legal support 2010-2011
Deans Honor List 2007/2008

Robert Danielson

19338 E Carriage Way, Queen Creek,

AZ 85142

Cell: 480-390-2102

Email: bjdanielson@gmail.com

PROFESSIONAL PROFILE

- More than 30 years supporting computers and networking.
- More than 25 years of experience in both private and public educational environments.
- Lead faculty for Microsoft, VMware, Security programs and network integration course. Primary faculty involved in new course design and implementation. Also teach courses related to Cisco technologies.
- Used multiple distance learning tools and techniques for 10 years. Currently teach regular fully on-line classes.
- Have been industry certified by Comptia, Microsoft, VMware, Cisco in both network support and as instructors.

EDUCATION

- M.L.S., Information Assurance, Fort Hayes State University, Fort Hayes, KS
- B.A. in Business Administration, Management Information Systems and Accounting, Eastern Washington University, Cheney, WA, 1982

ACADEMIC HONORS AND AWARDS

- Residential Lead, Microsoft Education, 2010 to Present
- Instructor Excellence Expert (Cisco Network Academy)

ACADEMIC /TEACHING EXPERIENCE

Residential Faculty, Mesa Community College, Mesa, AZ 2003 to Present

- Networking, Security and virtualization to classes averaging 16 students. Lead faculty for many programs.

Technical Instructor, Self Employed, 1997 to Present

- Teach Current Trends in Education, Students with Special Needs and Diverse Learning Styles, and Learning Theory and Human Development to graduate students in class sizes averaging 20 students.

Senior Lecturer, Coppin State University, Baltimore, MD, 1991 to 1996

- Taught course on the Nature and Needs of Exceptional Children to classes of 25 to 30 undergraduate students.

Technical Instructor, Interface Technical Training, Phoenix, AZ, 2000 - 2002

- Taught students how to configure and troubleshoot Microsoft and NetWare networks. Initiated imaging of computers in classroom to make transition between classes more efficient.

Technical Instructor, Mindworks Education Professionals Group, Scottsdale, AZ, 1998 - 2000

- Responsible for teaching NetWare, Windows, SQL.

Technical Instructor/Sr. Network Engineer, Sentinel Technologies, Tempe, AZ, 1997 - 1998

- Taught students how to configure and troubleshoot Microsoft and NetWare networks. Initiated imaging of computers in classroom to make transition between classes more efficient.

Technical Instructor/Sr. Network Engineer, Capital Business, Olympia, WA, 1994 – 1997

- Solely responsible for classroom setup, instruction for all courses at this location. Determined and managed equipment requirements for training location. Created proposal of new ISDN Internet connection. Performed network support for clients.

Technical Instructor/ Network Engineer, Self Employed, Lakebay, WA, 1993 – 1994

- Responsible for setup and instruction of network courses nationwide.

Network Engineer, Advanced Escrow and Title, Tacoma, WA, 1992 – 1993

- Performed phone and on-site support and consulting for Advanced Escrow LAN's that were throughout the nation. Support included building, installation and maintenance of clients and servers.

COURSES TAUGHT

Undergraduate

- | | |
|---------------------|-----------------------|
| • Various VMware | • Network Security |
| • Various Microsoft | • Network Integration |
| • Various Cisco | |

HIGHLIGHTS OF PROFESSIONAL EXPERIENCE

- Instruct classes relating to networking technologies and cyber security.
- Design and implement new courses relating to new technologies.
- Update current classes to new technologies.
- Provide advisement to students as needed.
- Served as lead faculty for student groups.
- Upgrade personal skills to new technologies.

- Provide classes in traditional, hybrid and on-line options.
- Lead faculty for implementing on-line offerings.
- Instruct classes relating to Cisco, Microsoft, Security and VMware.
- Provide instruction for on-site or on-line.
- Maintain requires teaching loads and certifications required for these industry certifications.
- Responsible for tracking of events, classroom setups required and financial accounting for the business.

PRESENTATIONS

- Created and presented security programs for students and parents.
- Presentation on Mesa Community College CyberSafe program to annual NSA/DHS National Centers of Academic Excellence conference.
- Presented security program to youth in a northern Arizona Christian youth leaders event.

PROFESSIONAL DEVELOPMENT

- Attended numerous classes to improve knowledge in technologies.
- Maintained certifications with multiple vendors. This requires maintaining knowledge with these technologies.

CERTIFICATIONS

VMware Certified Instructor, VCI
Microsoft Certified Trainer, MCT
Microsoft Certified IT Professional, MCITP
Security Certified Network Professional, SCNP
Certified Novell Instructor, CNI
Cisco Information Security Specialist
Network+/Security+/A +

VMware Certified Professional, VCP
Microsoft Certified Solutions Associate, MCSA
Microsoft Certified Systems Engineer, MCSE
Certified Novell Engineer, CNE
Cisco Certified Network Associate, CCNA
Cisco Certified Academy Instructor, CCAI
Certified Technical Trainer +, CTT+

COMMUNITY SERVICE

- Youth leader with various ages of youth.
- Provide computer security classes to youth and parents.

322 Cheddington Rd. Linthicum, MD 21090 • 301-367-5885 • gina.scaldaferri@gmail.com

Gina M. Scaldaferri

Objective

Seeking a challenging position with a top notch university where I can utilize my degree, knowledge and experience in system analysis, networking, information assurance and computer forensics to teach.

Experience

June 2014 To: Present – Department of Air Force. Hanover, Maryland

Forensic Examiner – June 2014 - Present

Conduct digital forensic investigations involving child exploitation, harassing communications, identity theft, narcotics and fraud involving computers and other electronic technologies. These investigations utilized forensically sound techniques involving computers and other digital evidence. Qualified as an expert witness.

July 2013 To: Present – Lockheed Martin Corporation. Hanover, Maryland

Forensic Examiner – July 2013 - Present

Conduct digital forensic investigations involving child exploitation, harassing communications, identity theft, narcotics and fraud involving computers and other electronic technologies. These investigations utilized forensically sound techniques involving computers and other digital evidence. Qualified as an expert witness.

June 2006 To: July 2013 – Hoover Police Department. Hoover, Alabama

Internet Crimes Against Children Investigator – June 2010 – July, 2013

Lead complex Federal and State investigations related to Internet Crimes against Children. I have conducted complicated investigations across multiple jurisdictions to include gathering evidence, interviews and testifying in court. This involved working with multiple Federal Agencies and writing over 300 Federal and State search warrants and other court documents, which resulted in several hundred successful convictions in the area of Internet Crimes against Children. I also built, administered, updated and resolved technical issues on the undercover network for the Hoover Police Department.

Digital Forensic Investigator – June 2007 – July 2013

I have conducted several hundred digital forensic investigations involving child exploitation, harassing communications, identity theft, narcotics and fraud involving computers and other electronic technologies. These investigations utilized forensically sound techniques involving computers and other digital evidence. I have designed and built digital forensic laboratories while in Law Enforcement and conducted several hundred computer crime investigations for local, state, federal and corporate entities. I developed maintained and resolved technical issues with the computer forensics lab for the entire 200 officer Hoover Police Department. I created multiple policy and procedures regarding the seizure, handling and submission of electronic evidence, as well as, examination of electronic evidence. I also installed, administered and resolved technical issues with undercover cameras, IP cameras and other surveillance equipment.

I have worked on multiple inter-agency task forces to include the United States Secret Service National Computer Forensic Institute and Electronic Crime Task Force, Homeland Security Investigation, Federal Bureau of Investigations and United States Marshals. While working on these task forces learned new forensic and investigative techniques to include live computer previews and acquisition, RAM dumps and cell phone tracking.

Patrol Officer – June 2006 – June 2010

Responsible for patrolling the City of Hoover, serving and protecting the citizens of Hoover, Alabama. This involved working with other law enforcement officials and agencies, maintaining a thorough understanding of the State of Alabama criminal code, testifying in court, utilizing NCIC, NLETS, New World and other law enforcement databases. Helped configure, administer and trouble shoot computer issues with vehicle computer systems.

July 2004 To: June 2006 – Federal Bureau of Investigation. Birmingham, Alabama**Special Agent Cyber Crimes, Birmingham, Alabama – November 2004 – June 2006**

Lead complex investigations involving network intrusion to include distributed denial of service (dDos), hacking, and SPAM, tracking suspects and investigations overseas working with foreign law enforcement organizations for successful identification and prosecution of suspects. I also developed and maintained a malicious software sandbox to track and deconstruct how malicious software operates and who the software traced back to, as well as, created and maintained a honeypot to track SPAMMERS and network hackers/attackers in a proactive setting. I investigated computer internet fraud to include eBay fraud utilizing a number of investigation techniques to include, following financial records and computer records for successful identification and prosecution of suspect. I investigated identity theft again utilizing investigation techniques such as tracing financial records, computer and IP records and other advance techniques to locate and identify suspect. I investigated child exploitation cases as well. This included the collection of computers and other digital evidence for review, searching and gathering forensically sound evidence. Maintaining forensically sound evidence and following best practices maintains the integrity of the evidence and leads to successful prosecution. Utilized forensic tools and techniques to include carving unallocated space for forensic evidence, password cracking tools, network intrusion detection tools and techniques such as SNORT, WinPcap, log file tracing, as well as, proactive methods such as honeypots.

May 2000 To: July 2004 Lockheed Martin Inc. Washington Metropolitan Area**IEC Hardware Architecture and Design, Gaithersburg, MD – January 2002 – July 2004**

The Integrated Exploitation Capability (IEC) is a system developed for the National Geospatial Intelligence Agency (NGA) used for processing classified National Technical Means and Commercial satellite imagery to create finished intelligence products. The IEC system combines custom developed software and Commercial Off The Shelf (COTS) software and hardware into one integrated solution.

IEC prototype lead; conducted and participated in the research, design, development, testing and utilization of COTS hardware and software products. This included developing specifications for trade studies, evaluating multiple vendor solutions, analyzing test results and preparing and presenting final reports to the customer. Also installed, tested and resolved technical issues for all hardware solutions including RAIDS, SAN, workstations and peripherals.

IEC System Engineer, Gaithersburg, MD – October 2000 – December 2001

Performed technical planning, system integration, and cost and risk evaluation for the total system. Performed analysis at all system levels including: concept definition, design, fabrication, test and installation. Ensured the conversion of customer and product requirements into total systems solutions that acknowledged technical, schedule, and cost constraints. Performed functional analysis, time line analysis, detailed trade studies and requirements allocation to translate customer requirements into hardware and software specifications. Conducted and participated in the research, design and development of COTS hardware, processes, and software. Prepared technical and progress reports on assigned projects. Prepared specifications, evaluated vendors, and analyzed results.

Program 668 System Integration, Sterling, VA – July 2000 – October 2000

Program 668 is an information processing system for the intelligence community. All aspects of the program are classified. I supported technical planning, system integration, supportability and

effective analysis for the total system. I supported analysis of the total system to include: concept, design, fabrication, test, installation, operation, maintenance and disposal. Ensured the logical and systematic conversion of customer and product requirements into a total system solution that acknowledge technical, schedule, and cost constraints.

Website Designer – May 2000 – July 2000

Designed, configured and maintained the general information internal websites for the company to interface via internal and external communications. Insured that these websites were available to the customer and the desired audience with appropriate links and security designed into these sites to include secure login and VPN techniques. Researched and evaluated new related technologies.

March 1998 - July 1998 TeraTech Inc. Rockville, MD

Junior Programmer

Designed, configured and maintained the eCommerce, and corporate intra and extranet websites of many companies. Insured that these websites were available to the desired audience with appropriate links and security designed into the site, such as Secure Socket Layer, VPN and database authentication. Designed and developed database systems for many small companies which worked in conjunction with the websites.

Education

Present University of Maryland University College

M.B.A

Predicted Graduation Date Fall 2016, 4.0 GPA

2011-2015 University of Maryland University College

M.S. Information Systems; Information Assurance

Graduated with a 3.8 GPA

2013 – Defense Computer Institute Academy, Linthicum, Maryland

Certified Forensic Examiner

2007 – 2013 National Computer Forensic Institute Hoover, Alabama

United States Secret Service Basic Computer Evidence Recovery Techniques

United States Secret Service Advance Forensic Techniques

United States Secret Service Network Intrusion T R O

2006 International Association Computer Investigative Specialists (IACIS)

Certified Forensic Computer Examiner (CFCE)

2004 Federal Bureau of Investigation Academy Quantico, Virginia

Attended a seventeen week Special Agent training; learning, legal issues, intelligence and investigative techniques, defensive tactics and hand gun techniques.

1997-1999 University of Maryland Baltimore, MD

B.S., Information Systems

Focus on: Computer Networking and System Analysts and Design

Graduated with a 3.3 GPA

Member of the Golden Key National Honor Society

1992-1997 Montgomery College Rockville, MD

A.A.S., Advertising Design

Graduated with a 3.3 GPA

Expertise and Certification

Over 1200 hours of training in computers and digital forensics to include: FTK, enCase, MPE+, WinPcap, SNORT, HB Gary, Linux, Microsoft Operating Systems (XP, Vista, Windows 7, Windows 8) Solaris, SGI - IRIX, Veritas Net Backup. Certified Forensic Computer Examiner (CFCE), AccessData Certified Examiner (ACE), Cell Phone Technology and Forensics (CTF) and AccessData Mobile Phone Examiner (AME) Certified. Qualified as an expert witness in Computer Forensics in Federal Court, State Court and Military Court.

Clearances

2013 – Currently hold a TS level clearance granted by the DoD.

2010 – 2013 - Deputized United States Marshal.

2004 – 2006 - Held SSBI, cleared to the Top Secret level with access to SCI granted by the FBI

2000 – 2004 - Held a SSBI, cleared to the TS/SCI level with a current CI Poly granted by the DoD.

Justin Swisher

+ CONTACT

Address 1204 Senna Street
Tipp City, OH 45371

Telephone ☎ 937.679.9717

Email ✉ Justin.swisher@gmail.com

+ EXPERIENCES

Adjunct Professor
Capitol Tech University
Jun 2015 - Present

- Teach online delivered course - "Incident Handling and Malicious Software"

Senior Engineer
FireEye, Inc.
Jun 2015 - Present

- Deploy and manage large network sensor grid for customers
- Research and develop sensor capabilities for better detection, as well as implementation of customer requirements
- Integrate new detection tools and techniques into network sensors

Lead Network Intelligence Analyst
Morphick, Inc.
Mar 2015 - May 2015

- Network analysis and forensics to develop static rules for network IDS platforms
- Network security monitoring architecture and deployment on enterprise scale links
- Managed signature creation and tuning for entire network sensor deployment
- Cyber threat analysis to determine adversary TTPs, attribution, and atomic indicators

Cyber Intelligence Analyst
Cincinnati Bell Technology Solutions
Nov 2013 - Feb 2015

- Installed and managed indicator database
- Cyber threat analysis to determine adversary TTPs, attribution, and atomic indicators
- Network analysis and forensics to develop static rules for network IDS platforms
- Wrote strategic intelligence reports for customer industry verticals

Foreign Malware Analyst
National Air and Space Intelligence Center
Oct 2012 - Nov 2013

- Produced predictive, all source analysis of foreign malware capabilities against US air and space systems
- Technical analysis of malware tactics and techniques
- Assessed technical details of threats for a wide range of customers requiring reverse engineering and intelligence analysis
- Provided thorough response to product requirements and ad-hoc tasks in a timely manner

Foreign Networks Analyst
National Air and Space Intelligence Center
Jun 2010 - Oct 2012

- Produced predictive, all source technical analysis focused on foreign communications networks, including computer, fiber, and satellite
- Wrote technical assessments of computer networks describing hardware, software, logical mapping, and protocol mapping
- Provided product responses to COCOM, MAJCOM, and other IC customers within the requested time frame
- Briefed working groups and senior level officials in area of expertise

+ EDUCATION

SANS GIAC Certified Intrusion Analyst (GCIA)
2014 SANS Orlando 2014

Air Force Institute of Technology
2012 - 2013 **Masters of Cyber Warfare** (1st year)
Graduate School of Engineering and Management
WPAFB, OH 45433

University of Pittsburgh
2007 - 2009 **Masters of Public and International Affairs, Security Studies**
Graduate School of Public and International Affairs
Pittsburgh, PA 15260

University of Toledo **BS in Computer Science and Engineering Technology, Magna Cum Laude**
2003 - 2007 College of Engineering, Engineering Technology Department
Toledo, OH 43606

Orientations Cyber Attack and Defense, Information Security, Reverse Engineering, Malware Analysis, Network Forensics, Intelligence Analysis

+ LANGUAGES

Mother tongue **English**

Foreign languages **Chinese - Mandarin**

As a second language, beginner reading and speaking skills.

+ IT PROFESSIONAL SKILLS

Operating systems **Linux, Windows, Mac OS X**

Scripting Languages **Python, BASH**

Software **SaltStack, pfSense, Suricata, Bro, Wireshark**

+ PROFESSIONAL HIGHLIGHTS

I am able to work with minimal supervision given a task and timeline.

I am detail-oriented with excellent research and analysis skills.

Edward Wayne Taylor
2837 Newport Ave
Sierra Vista, Arizona 85635
United States

E-mail: edward.w.taylor.civ@mail.mil
Home: 1 - (520) – 255-1123
Work: 1 - (520) - 533-2875
DSN: 821-2875

SUMMARY OF QUALIFICATIONS

Over seventeen years of professional and voluntary experience supervising, leading, training, and mentoring both technical and non-technical workforces with a wide variety of education and skill levels. Comprehensive knowledge of planning, directing, budgeting, deploying, and advising complex information technology projects and personnel with specific focus on Army and DoD Command, Control, Communications, Computer, and Information Assurance (C4IM) regulation compliance. Defense acquisition certified in Information Technology (Level III) and an Army Acquisition Corps member. Currently holds a Top Secret clearance.

PROFESSIONAL EXPERIENCE

USAISEC (08/2006 - Present) - Supervisory Information Technology Specialist

Fort Huachuca, Arizona United States

Supervisor: Tito Lebano - 520-538-7032; Contact: Yes

Pay Grade: GS - 2210 - 13

Hours per week: 40

- Serves as the Information Management Office (IMO) Chief, who is the senior Information Management (IM), Information Assurance (IA), and Information Technology (IT) authority for the U.S. Army Information Systems Engineering Command (USAISEC).
- Directly supervises USAISEC's IA, IM, and IT support workforce of ten GS - 11 through GS - 13 employees with past supervision and oversight of as many as thirty-five Government, Military, and Contractor employees.
- Responsible for the execution of administrative and personnel management responsibilities related to the accomplishment of the assigned missions. Evaluates employee strengths and weaknesses in order to appropriately assign or reassign tasks.
- Provides advice and counsel to employees relative to work and administrative matters.
- Observes and evaluates employee performance. Provides coaching and mentoring to employees to further enhance their careers.
- Oversees the development and training needs of assigned staff to maintain needed proficiencies and develops personnel to cover current requirements and assume increased responsibilities.
- Serves as USAISEC's expert on Army and DoD training requirements for IA and IT personal. Provides advice on relevant and acceptable training and certificate options in accordance with established regulations. Managed all user accounts in the Army Training & Certificate Tracking System (ATCTS) for tracking and approval of required training and certification of the USAISEC IT and IA workforce.
- Performs hiring action duties by conducting Interviews and/or recommending candidates for selection.

- Specifically responsible for exercising IM/IT program management for the formulation and administration of USAISEC's IM policies, procedures, and long and short-range planning.
- Provides for complete C4IM support, budgeting, implementation, and maintenance in order to meet the unique requirements of USAISEC's reimbursable worldwide workforce.
- Advises the Commander as the authoritative source for program-related advice, information and guidance regarding current and future information systems concepts, doctrine, methods, practices, operations and technologies.
- Provides technical management and oversight of the USAISEC Defense Research and Engineering (DREN) lab network infrastructure to include network hardware/software, IA, implementation, procurement, and accreditation.
- Manages the Command Simplified Acquisition Program (SAP) as the single source for procurement and provides technical and policy advice for all USAISEC Performance Work Statements (PWS).
- Served as the Technical Point of Contact (TPOC) for two IT service contracts to provide complete helpdesk, System Administrator (SA), SharePoint development, and portal maintenance to support USAISEC's global missions.
- Represents the Command and interfaces with most echelons of Army and intra-agency personnel through face-to-face, verbal, written communication, and technical means. Specifically serves as the Mission Support Directorate (MSD) representative to the Senior System Engineering Working group, the Command representative to the CECOM SharePoint/Knowledge Management (KM) developers group, the Senior technical advisor to the USAISEC Knowledge Management Working Group (KMWG), and a variety of intra and extra agency senior management boards and working groups generally at the GS-14 to 06 levels. Has consistently represented the Commander and briefed at meetings and working groups with a target audience at the General Officer (GO)/Senior Executive Service (SES) level.
- Provides direct SharePoint development support for the USAISEC KM portal as well as advisory and site collection administration support for all USAISEC SharePoint development efforts. Directly supported the migration of the USAISEC standalone portal, to the CECOM SharePoint instance, and ultimately to the Army Materiel Command (AMC) SharePoint presence under DISA.
- Remains abreast of current and emerging technologies to provide technical advice across various IT/IA/Cyber disciplines in support of varied worldwide USAISEC missions and customers.
- Establishes, maintains, and enforces Directorate and Command C4IM/Cyber policies and ensures Command compliance with additional Army, DOD, CECOM, and AMC regulations.

USAISEC (02/2005 - 08/2006) - Senior Information Technology Specialist

Fort Huachuca, Arizona United States

Supervisor: LTC Wellborn - 520-538-1350; Contact: Yes

Pay Grade: GS - 2210 - 13

Hours per week: 40

- Served as senior Information Technology (IT) specialist and technical advisor to the Director, Synchronization and Integration (S&I) Directorate as well as Senior Project lead (SPL) for various USAISEC portal and customer efforts.

- Was the Senior Project Lead (SPL) with direct oversight of four contractor and two Military personnel for the Installation Information Infrastructure Modernization Program (I3MP) portal. Served as a USAISEC representative to the I3MP program office at PEO Enterprise Information Systems (EIS).
- Distributed work to employees based on priorities and the difficulty of assignments and provided technical advice and instructions to overall team efforts.
- Exercised surveillance over team programs to ensure adequate and timely accomplishment of current and future objectives, adherence to policies, compatibility with short and long-range plans, and completion of required staff actions.
- Assisted in the development of the follow-on Work Plan for the I3MP Portal.
- Assumed the role as the TPOC and SPL over the three civilian, two interns, and eight contractor staff for the development and fielding of Project Resource Information Management Enterprise (PRIME), USAISEC's KM/SharePoint Portal. Supported the portal effort from requirements gathering, through development, to final fielding.
- Provided technical and policy advice/recommendations for USAISEC projects in support Army and DOD customer projects throughout the world.
- Maintained a broad knowledge of existing and emerging technologies to assist and advise USAISEC project leads in supporting a myriad of customers.
- Reviewed procedures, methods, and techniques for performance of work. Furnished guidance on unusual and controversial issues and performed final technical reviews when appropriate.
- Served as the primary interface with USAISEC directorates for coordinating and resolving issues related to service quality, reliability, technical requirements, applications, timelines, and critical operational issues.
- Required to maintain written and verbal communications with all levels of USAISEC leadership and to provide written and briefed project updates to various Project Managers (PM) at program offices.
- Oversaw the development of contract documentation, Performance Work Statements, Task Orders, Lists of Materiel, and justifications, for various USAISEC projects.

USAISEC (02/2004 - 02/2005) - Integration Engineer Team Lead

Fort Huachuca, Arizona United States

Supervisor: Elton Greene - 520-538-3117; Contact: Yes

Pay Grade: GS - 2210 – 13

Hours per week: 40

- Senior Project Lead (SPL) for the Network Common Relative Operational Picture (NETCROP) project. Served as the Technical Point of Contact (TPOC) for three web developers and four programmers as well as the team lead for three Government Civilians.
- Distributed work to employees based on priorities and the difficulty of assignments and provided technical advice and instructions to overall team efforts.
- Acted as the USAISEC Project Manager (PM) for the NETCROP effort to include: coordinating implementation schedules and activities, overseeing Configuration Management (CM) of the NETCROP Army wide, assisting the Army Network Operations and Security Center (ANOSC) with

Program Objective Memorandum (POM) development efforts, and planning for the fielding at Army functional NOSC's worldwide.

- Provided weekly written project updates to USAISEC senior leadership and provided quarterly updates to the NETCROP PM (GS-15) through written and face-to-face briefings.
- Responsible for the development of annual work plans to include: engineering support, integration costs, contract support maintenance, and additional aspects of the project planning process.

USAISEC (03/2003 - 02/2004) – Knowledge Management Subject Matter Expert (SME)

Fort Huachuca, Arizona United States

Supervisor: Elton Greene - 520-538-3117; Contact: Yes

Pay Grade: GS - 2210 – 13

Hours per week: 40

- Served as the KM Subject Matter Expert (KM SME) - USAISEC's expert in business best practices, collaboration tools and processes, and portal technologies and strategies. Specific expertise in business process redesign, human capital concepts, establishing and maintaining communities of interest, managing organization and cultural change, content management, web services, and KM governance practices.
- Served as the focal point and recognized senior IT/IA specialist for providing technical direction, planning, and leadership for KM; provides technical expertise, advice, and guidance for preparation of policies, design plans, and conceptual frameworks for USAISEC and customer information requirements.
- Established USAISEC's technical laboratory and testing environment to support the evaluation, implementation, and configuration management of KM tools and applications such as SharePoint, Remedy, KnowledgeBase, and a variety of emerging tools and technologies.
- Provided specific technical advice and support to USAISEC's Knowledge Management Critical Skill Expert (KM CSE) to support decision briefs and information white papers for a target audience of GS-15's and Commanders.

Western International University (11/2002 - 11/2005) - Adjunct Professor

Fort Huachuca, Arizona United States

Supervisor: Ellie Kallal - 602-943-2311; Contact: Yes

Hours per week: 20

- Adjunct Professor for Western International University.
- Graduate and undergraduate instructor for Computer Science, Information Technology/Systems, Business/Project Management, and Knowledge Management theory courses.
- Responsible for controlling all aspects of classroom management to include lecturing ten to twenty-five students per class using a variety of technical and presentations tools, assigning and grading papers and projects, proctoring and grading tests, and providing hands-on examples of "real world" technology for the students to test and evaluate.
- Required to present and communicate information in a variety of ways in order to convey the requisite course knowledge to students from diverse backgrounds with various learning styles.

- Developed testing material, lesson plans, and course curriculum for a variety of subjects that were used as the standard for all associated courses at the Ft. Huachuca campus.
- Evaluated both written and verbal understanding of course material.

USAISEC (03/2001 - 03/2003) - Information Technology Specialist

Fort Huachuca, Arizona United States

Supervisor: Nick Lebano - 520-538-8385; Contact: Yes

Pay Grade: GS - 334 - 12

Hours per week: 40

- Served as ISECs Information Technology (IT) specialist and configuration manager for PCs, network equipment, printers, and IT related hardware.
- Served as ISECs technical expert on desktop computer technology and provided expertise for enterprise level capabilities to manage the design and implementation of IT systems and networks throughout the command.
- Provided expert technical advisory service in the operation and management of all IT functions within the organization.
- Developed policy and procedures for accomplishment of short and long-range goals and objectives.
- Determined problems items of command interest and escalated them to higher management for decision. Initiated staff actions across Directorates to assure coordinated resolution.
- Developed technical guidelines, standards, and internal procedures for the accomplishment of programs and missions, e.g., network management, equipment standardization, problem resolution, and contingency operations.
- Maintained the Information Management Office (IMO) budget and was responsible for acquisition of all Network Team/IMO equipment and services.
- Established and implemented policy for the acquisition, utilization, and tracking of all ISEC IT assets and equipment.
- Evaluated new technology for potential use within ISEC and served as the Command liaison to all the major IT vendors and various echelons of Army and DoD agencies/
- Assisted in the preparation of contracting support requisitions and renewals.
- Maintained a database tracking system for ISEC PCs, printers, and software.
- Provided hands-on system administration support for IT equipment, software and networking components as a support member of the ISEC Network Team.
- Served as acting IMO as needed. Briefed Commanders, Directors, and staff throughout various levels of ISEC, CECOM, and AMC.
- Assisted the IMO in determining USAISEC's IT/IA needs and building the staff to fully support the Command. Developed Position Descriptions, processed recruitment actions, and conducted interview with the IMO

Validity Corporation (08/1999 - 03/2001) - Systems Analyst

Fort Huachuca, Arizona United States

Supervisor: Harry Brown - 520-538-2938; Contact: Yes

Salary: \$40,000.00 per year

Hours per week: 45

- Served as the team lead of up to 10 contractor employees for the Defense Standard Disbursing System (DSDS) testing effort with responsibility to distribute work to employees based on priorities and requirements of the customer.
- Was responsible for developing testing procedures and interoperability validation for the Department of Defense Information Systems Agency (DISA).
- Specifically responsible for overseeing operational testing on a variety of Defense Finance and Accounting (DFAS) financial systems.
- Responsible for generating/writing testing plans and reports for tested DFAS systems.
- Developed and maintained a CM database application for hosting test data and knowledge management/sharing.
- Provided development support through the use of PL/SQL for programming Oracle interfaces with front-end applications.
- Attended continuous training to improve development and project management skills.

COMPUSA (06/1997 - 07/1999) - Hardware Manager

Phoenix, Arizona United States

Supervisor: Dale Summers - 602-906-0800; Contact: Yes

Salary: \$35,000.00 per year

Hours per week: 45

- Managed retail and technical support sales staff for major computer store.
- Responsible for scheduling and direct supervision of 30 team members. Responsible for establishing and maintaining monthly sales goals.
- Day to day management responsibility for all store operations and over 100 team members across seven distinct departments.
- Programmed scheduling/payroll system using Visual Basic/ MS Access for daily tracking of payroll and sales numbers.
- Complete responsibility for sales floor to include merchandising, stocking, inventory, and price integrity.
- Member of store management team with responsibilities to include - Solo opening and closing, cash office/safe counts, customer relations and problem solving.
- Continued vendor training on computer hardware and software to include - All major IBM compatible machines, Apple PCs, network equipment, and various software titles.

- Responsible for ongoing training of staff on computer specifications, troubleshooting, and sales techniques. Developed Computer Based Training CBTs to provide technical and sales staff with training needs.

EDUCATION

1995 - 1997, BSBA & BSBM, University of Phoenix.

2000 - 2002, MSCIS, University of Phoenix.

H.S. Diploma, 1984 - 1988, College Prep., Shiloh Christian School.

1998 - 1999 Oracle Education San Francisco, CA

Intro to SQL PL/SQL

Advanced PL/SQL

Oracle Designer

1998 - 2000 Mercury Interactive Various Locations

WinRunner

Advanced WinRunner

Test Director

1998 - 2000 Management Concepts Ft. Huachuca, AZ

Defense Finance and Accounting Systems Life Cycle Management Course

U.S. Standard General Ledger

Accounting Procedures in Federal Agencies

2000 - Present Various Sources Ft. Huachuca, AZ

Tivoli Infrastructure 4.1

Spectrum Level I & II

MS SharePoint 2003 Administration

DAU Level I Acquisition Certification - Program Management

DAU Level III Acquisition Certification - Information Technology

Supervisor Development Course

Army Management Staff College - Foundations Course

Army Management Staff College - Basic Course

Army Management Staff College – Intermediate Course (Registered for online portion.)

ADDITIONAL INFORMATION

Ongoing training in project management to include DOD contracting, policy/planning, life cycle management and acquisitions. Performance appraisals with highest possible ratings and a quality step increase awarded.

Volunteer experience as the School Board President for Shiloh Christian School – 2004 to 2010.

Terry M Keene
13895 E Brotherton Street
Vail, AZ 85641
Contact Phone: (520) 229-7005
Email: terryandkris@msn.com

WORK EXPERIENCE:

Army Golden Master Independent Verification and Validation Systems Engineer

NCI Information Systems, Inc. - Sierra Vista, AZ – 02/2016 to Present
40 hours per week; 75 North Garden Ave, Sierra Vista, AZ 85635; Timothy Ash (520) 450-3393; may contact supervisor.

Supports the development and maintain the NETCOM Technical Authority. Updates the latest developments in security guidance issued from; Center for Internet Security, National Institute of Standard Technology, Defense Information Systems Agency, and National Security Agency. Experienced in the security architectural design of mobile computing/cloud environments. Working knowledge of the Department of Defense (DOD) and Army Information Security Policy.

Accomplishments:

- Tracks, reviews, and maintains security settings for seven operating systems and 18 applications.
- Packages and ships to 25 vendors, verifying security settings for each monthly and quarterly updates per established guidelines.
- Designed a solution for developing and building platform-specific baseline configurations for the enterprise level implementation to support the Army Desktops and Servers.

Certification and Accreditation Engineer

Symantec – Tucson, AZ – 06/2012 to 12/2015
40 hours per week; 2350 Cooperate Park Drive, Herndon, VA 20172; John Williams (703) 668-8887; may contact supervisor.

Conducted Certification and Accreditation (C&A) for agency FISMA systems. Facilitated project management in capturing Navy and Marine Corps Intranet. Ensured 20 products were updated semi-annually within compliance in C&A processes. Conducted 12 meetings with 40 Engineers and Product Development Personnel to troubleshoot key issues and provided information on available products. Coordinated with the Joint Information Environment team and achieved targeted goals for consolidating 60 data centers servers. The process included monitoring, backup procedures and securing information with Symantec Information Management products. Technical Lead Risk Management Framework (RMF) with Symantec Public Sector. Provided training to ISC2 Chapter members on RMF concepts and meanings. Worked with early adopters with the Army Information Assurance (IA) team to determine what systems and applications will be

evaluated during the process and this input enabled the Army IA team to categorize and select 48 systems. Worked with the Public Sector Architecture team in developing a plan for best business practice on selling products that enhanced RMF methodologies for the DOD Information Technology sector.

Accomplishments:

- Increased sales 700k with facilitating communication both formal and informal to Symantec employees and management to understand the DOD customers' requirements.
- Managed 20 DOD and Federal C&A activities to include Army and Air Force Certification of worthiness, DOD Information Assurance C&A Process and Approved Products List.
- Participated in eight cross function teams to develop Data Center Consolidation Solution for 10 Federal and DOD organizations.

Enterprise Application Integration Engineer

NCI Information Systems, Inc. – Sierra Vista, AZ – 12/2010 to 06/2012

40 hours per week; 75 North Garden Ave, Sierra Vista, AZ 85635; Timothy Ash (520) 450-3393; may contact supervisor.

Reviewed 15 deployment guidelines to ensure implementation was consistent with design specifications. Evaluated products and solutions including Commercial off the Shelf and Government off the Shelf customized software alternatives. Resolved, advised, and mitigated unforeseen technical issues in Exchange Outlook Mail, Mobile Messaging and Application Hosting Engineers consisted of 100k users. Participated as lead advisor to the Technical Review Boards, Configuration Control Board and Change Advisory Board with different levels of management. Coordinated and directed all phases of project-based efforts while managing, motivating, and leading a project team consisting of six members.

Accomplishments:

- Managed and tracked 200 open trouble tickets and 20 open bug reports monthly.
- Improved Army Information Security posture and reduced Total Cost of Ownership 225k at eight major Army installations for Information Technology services.
- Provided formal and informal technical and product training to 200 Mobile Support Administrators.

System Architecture Engineer

NCI Information Systems, Inc. – Sierra Vista, AZ – 12/2008 to 12/2010

40 hours per week; 75 North Garden Ave, Sierra Vista, AZ 85635; Timothy Ash (520) 450-3393; may contact supervisor.

Integrated Blackberry, NetBackup, and Veritas Solutions to 250 existing client environments. Managed 15 technical resources and Statement of Work for each resource. Developed procedures for Microsoft System Center Operations Manager and Microsoft

System Center Configuration Manager with non-Windows computing platforms at the Army Global Network Operations Center. Determined system specifications, input/output processes, and working parameters for hardware/software compatibility. Setup and installed instant messaging using Lotus Sametime Server allowing 94k users to send messages through their Blackberry device.

Accomplishments:

- Proposed and designed technology application solutions, resulting in a 500k savings over a two-year period to the Army Global Network Center.
- Managed four contract personnel in the production of daily, weekly and monthly project status reports to upper managers, and resolved day-to-day technical defects and issues via the Software Developmental Life Cycle.
- Provided cost analysis for purchasing equipment totaling 2.3 million to the Army Procurement Office during the 2009/2010 fiscal year.

Enterprise Application Engineer

Perot Systems – Sierra Vista, AZ – 12/2006 to 12/2008

40 hours per week; 2300 West Plano Parkway, Plano, TX 75075; Bert Rhoades (520) 459-0475; may contact supervisor.

Project contractor lead for Blackberry contract with the Army Processing Center. Provided technical integration, architecture, and engineering support in the planning, implementing, and management of the Army Infrastructure Migrations. Planned and conducted testing, implementation, and development of automated business processes. Setup and installed Blackberry on eight Enterprise servers.

Accomplishments:

- Monitored and managed 35k Blackberry and Exchange users at the Oklahoma Army Processing Center and 5k users at the Columbus, Ohio Army Processing Center.
- Developed eight technical implementation guides for the Area Processing Center Blackberry server and router.
- Created backup scripts for one-gigabit security files stored monthly on a remote server.

EDUCATION:

University of Phoenix, Tucson, AZ; Master's degree, March 2014; Masters of Information Systems; 3.78.

University of Phoenix, Tucson, AZ; Bachelor's degree, March 2012; Bachelors of Science in Information Technology; 3.68.

AFFILIATIONS:

ISC 2 Tucson Chapter – Presenter/Member and Southern Arizona AFCEA Organization – Member.

LICENSES/CERTIFICATES:

Microsoft Certified Systems Solutions Associate 2016
CEH Certified Ethical Hacker 2015
ITIL Certification 2015
Certified Information Systems Security Professional CISSP 2013
Microsoft Certificate MCPIT 2008
Blackberry Certified System Administrator 2008
Microsoft Certified Trainer 2006 – 2009
Microsoft Certified Systems Administrator: Messaging 2003
Microsoft Certified Systems Engineer: Security 2003
Microsoft Certified Systems Administrator: Security 2003
Microsoft Certified Database Administrator 2000
Comptia A+ Certification
Network + Certification
Security + Certification
Active Top Secret security clearance

U.S. Military Service Information:

United States Air Force - September 1982 to October 2004 – Honorable Discharge.

WENDY M. ZIMMER
201 CHARLES RD, LINTHICUM, MD 21090
410-533-8521
WZIMMER@CABLESPEED.COM

OBJECTIVE: ADJUNCT INSTRUCTOR

EDUCATION AND TRAINING:

- M. B. A, University of Maryland University College Projected December 2016
- M. S. Information Technology Information Assurance, University of MD University College 2014
- B.S. Information Systems Management, University of Maryland University College - Cum Laude 2008
- A.S. Information Systems Technology, Community College of the Air Force 2005
- A.S. Specialized Business in Data Processing, ICM School of Business 1987

CERTIFICATIONS:

- CFCE, International Association of Computer Investigative Specialists 2010
- Certified Basic Digital Forensic Examiner, Defense Computer Investigations Training Program 2006
- Microsoft Certified Professional 2003

PROFESSIONAL TRAINING:

- Introduction to Log Analysis 2015
- Network Intrusions Basics 2015
- P2P Marshal 2013
- Large Data Sets Acquisition 2010
- IACIS – Certified Forensic Computer Examiner Course 2009
- Forensics and Intrusions in a Windows Environment 2008
- Macintosh Forensic Examinations 2008
- Windows Forensic Examinations – Encase 2005
- Incident Response Course 2005
- Introduction to Network and Computer Hardware 2005
- HP OpenView Network Node Managers on Windows 2004
- Implementing & Administering W2K Directory Services 2004
- Windows 2000 Professional & Server 2003
- Network Management System 200 2003
- Advanced Communications-Computer Systems Operations 1999
- Communications-Computer Systems Operations 1988

WORK EXPERIENCE: DOD GOVERNMENT CIVILIAN – 40HRS/WEEK

JUNE 2010 – PRESENT

Defense Computer Forensic Laboratory, Linthicum, Maryland

- **CHIEF COUNTERINTELLIGENCE SECTION**
Manages 15 Senior & Advanced Computer Forensic Examiners. Reviews 140+ exams annually containing over 130 Terabytes of digital data to include cell phone forensics; tracks the progress and quality of examinations to ensure a balanced distribution of examinations throughout the section. Bi-annual presenter of laboratory forensics capabilities at the defense Community Counterintelligence Course. Guided the Counterintelligence Counter Terrorism team through the ASCLD/Lab International Standards Inspection with zero findings across 85+ inspection items.

GENERAL DYNAMICS – ADVANCED INFORMATION SYSTEMS - 40HRS/WEEK

OCTOBER 2008 – JUNE 2010

Defense Computer Forensic Laboratory, Linthicum, Maryland

- **COMPUTER FORENSIC EXAMINER**
Conducts substantive forensic analysis on all types of digital media submitted to Defense Computer Forensics Laboratory (DCFL) using Encase, FTK, and other forensic tools. Maintains the integrity of submitted evidence for ongoing criminal, fraud and counter intelligence investigations. Prepares and

WENDY M. ZIMMER

PAGE 2

presents testimony of relevant evidence recovered during analysis of digital media, mitigates malware and malicious files.

UNITED STATES AIR FORCE - 40+HRS/WEEK

APRIL 1988 – OCTOBER 2008

Defense Computer Forensic Laboratory, Linthicum, Maryland

- **COMPUTER FORENSIC EXAMINER** SEPTEMBER 2006 – OCTOBER 2008
Same as above Computer Forensic Examiner for Defense Computer Forensics Laboratory (DCFL).
- **NCOIC NETWORK ADMINISTRATION** FEBRUARY 2005 – SEPTEMBER 2006
Program manager of Central Information Management Systems (CIMS) for Defense Cyber Crime Center (DC3). Managed the coordination, installation, upgrade, and overall management of CIMS resources at DC3. Analyzed, developed and implemented major computer automation projects and provided technical guidance and support to computer forensic examiners, instructors and research and engineering staff.

690th Intelligence Support Squadron, San Antonio, Texas

- **NCOIC NETWORK SERVICES** AUGUST 2001 – JANUARY 2005
Lead 19 advanced system administrators in the daily operation of 5,000 information system assets valued at \$30 million directly impacting over 14,000 local and global customers for Air Intelligence Agency (AIA). Performed duties as project leader for information systems initiatives by coordinating and managing work flow supporting AIA's network infrastructure. Developed policies and solutions on all network issues for AIA and supporting agencies.

Headquarters United States Air Forces in Europe, Ramstein, Germany

- **COMPUTER SYSTEMS CRAFTSMAN** DECEMBER 1998 – AUGUST 2001
NCOIC, HQ USAFE Global Command and Control System and Joint Operations Planning and Execution System (JOPES) Planning Cell for Joint Chiefs of Staff. Implemented MAJCOM policies/procedures for deployment planning in JOPES for USAFE aerospace expeditionary forces participating in joint, combined, and multinational exercises in USEUCOM AOR. Managed the Time Phased Force Deployment Data in JOPES and validate mobility requirements to HQ USEUCOM.

5th Space Warning Squadron, Woomera, Australia

- **SPACE SYSTEMS COMMUNICATIONS COMPUTER OPERATOR** JUNE 1997 – DECEMBER 1998
Deputy crew chief of shift operations for the Defense Support Program (DSP) satellites overseas ground station communication and computer center. Operated and configured three mainframe computers, three Advanced Radiation Detection Units and two Message Distribution Terminals. Processed critical missile warning data for National Command authorities of two nations.

722nd Air Base Squadron, Diyarbakir, Turkey

- **COMMUNICATIONS SECURITY (COMSEC) ACCOUNTANT** JUNE 1995 – JUNE 1997
Maintained the accountability, management, and security of the Base COMSEC Account. Conducted inspections of user accounts, provided guidance and training on any issues related to COMSEC.

AFELM NATO/ AIRCENT Det 8, Ruppertsweiler, Germany

- **NATO SCARS II OPERATOR** JUNE 1992 – JUNE 1995
Maintained and operated the SCARS II peripheral equipment. Executed system commands to implement system parameter changes, data base changes, and other message handling commands. Consolidated and submitted all daily sub-network site status to Supreme Headquarters Allied Powers Europe (SHAPE).