Professional Contributions in STAR Format

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Abstract

This is a work in progress, i.e., an incomplete draft.

Contents

1   Product Development

C964 BSCS Capstone Website

Situation: The C964 capstone used a holistic rubric confusing students and including unnecessary items in the task directions. Furthermore, BSCS courses do not require nor provide the minimal skill set needed to pass. Students were confused about the requirements and often ill-prepared to complete them.

Task: Provide students with clear instructions and examples of the PA requirements. Provide instruction material where required competencies were not provided by WGU courses.

Action: I took ownership of the problem independently developing a website providing everything students needed to succeed -clear instruction, examples, learning content (code and theory), videos, FAQs, and templates.

Result: C964 BSCS Capstone Website -an agile elegant solution allowing our team to scale to increased caseloads. The content has been so successful that PD has adopted it as the official LR.
This page is amazing. For every class I've had throughout my time at WGU I've felt like there were countless resources scattered amongst multiple pages and sites and nothing was centralized. If every class had their own GitHub page or similar WGU-hosted page, that would have made my life so much easier. Can we petition WGU to add something like this to every class?
-WGU student

C769 IT Capstone Website

Situation: With ever-increasing caseloads, our team needed a platform to better assist asynchronous students.

Task: Provide students with a one-stop place for clear instructions, videos, templates, and examples.

Action: In collaboration with the C769 Capstone team, I developed a website providing everything students needed to succeed -clear instruction, examples, FAQs, videos, and templates.

Result: C769 IT Capstone Website -an agile elegant solution allowing our team to scale to increased caseloads.

D195/D502 Data Analytic Capstone Website

Situation: With ever-increasing caseloads, our team needed a platform to better assist asynchronous students.

Task: Provide students with a one-stop place for clear instructions, videos, templates, and examples.

Action: In collaboration with the D195 Capstone team, I developed a website providing everything students needed to succeed -clear instruction, examples, FAQs, videos, and templates.

Result: D195/D502 Data Analytic Capstone Website -an agile elegant solution allowing our team to scale to increased caseloads.

Statistics Data Analytics and Nursing Support

Situation: Data Analytic and Nursing students were struggling with statistics-related material outside the scope of their CIs' expertise.

Task: Provided Data Analytic and Nursing students statistics and remedial statistics support.

Action: I led a team that created and maintained a teacher exam website providing information and appropriate remedial and practice resources -most of which had to be created.

Result:

Teachers' Licensure Mathematics Exam Prep

Situation: WGU had little to no preparation resources or single informational sources for teaching licensure exams. Worsening the situation is that each state has its requirements, and WGU operates as a national university.

Task: A single one-stop source, directing students to the correct exams and resources for preparation was needed.

Action: I led a team that created and maintained a teacher exam website providing information and appropriate remedial and practice resources -most of which had to be created.

Result:

Subject matter expert (SME) consultation

- C964 Computer Science Capstone. Mathematics, CS, and machine learning SME. Wrote entire course for an updated version (to be released 9/25/2023)/

- D195/D502 Data Analytics Capstone. Data Analytics, statistics, and Capstone SME.

- D342 Cloud Computing Capstone. Capstone SME.

- C960 Discrete Math II. Mathematics SME. Wrote content for induction and section summaries.

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Result:

Various Items

- C952 OA (per multiple student complaints) and Course Planning Tool #9 item identified. Alearted PC and PD. Currently working with PDO on resolution (5/2021)/

- C950 PA online solutions found. Alerted BSCS PC and PD (5/2021).

- C949 pre-A/LR alignment evaluation. Pre-A misaligned items identified and tickets submitted (5/2021).

- CPT (course planning tool) alternative quiz with solutions (missing from official version) (5/2021)

- C952 alternative pre-assessment 30+ problems contributed and aligned with OA (5/2021).

- C952 glossary - a LR better aligned to the assessments (4/2021).

- C952 pre-assessment review videos: Pre-A #1-9, Pre-A #10-22, and Pre-A #23-32 (3-4/2021).

- C951 task 1 & 2 Panopto directions issue identified, ticketed (ticket #PF-226041), collaboration with PC and PD, and FAQs updated. 5/5/2021

- C959 OA problem mistake identified. PC notified, IT-math team notified, and worked with assessments to have the item replaced on 4/2021.

- C952 CPT and OA problem identified and requested fixed.

- C949 pre-assessment and OA item issues. Tickets submitted for errors in Pre-A items 24, 41, 44, 45; 5/8/2021/

- C952 & C950 Maintenance Requests meeting reviewing course issue with PC Mike Peterson, Brianna Bellanti, and Sarah Corbitt 5/20/2021.

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Result:

C169 Programming and Scripting

Situation: Though able to demonstrate programming competency per the performance assessment, students would often fail the objective Assessment.

Task: Help students pass the objective Assessment.

Action: After analyzing the problem, I determined that students were often unable to differentiate between similar programming concepts, e.g., class/object, inheritance/interface, static/instance, etc. I condensed this information to a single short source focusing on key differences illustrated with accessible examples. C169 details!

Result: Improved objective assessment performance for a small but high-demand group of students.

C857 Software and Quality Assurance

Situation: Per "course chatter," emails, live calls, PM discussions, etc., C857 was generating a high volume of complaints about the quality of the course and its alignment to Assessment.

Task: I needed to determine, verify, and offer solutions for the underlying issues

Action:

- As the initial evidence was qualitative, I collected and organized information from PMs, CIs, and student resources.

- I collected specific examples in the learning resource and pre-assessment supporting student and faculty concerns.

- I wrote Python code to collect and describe assessment data! FIG! (for some reason, Assessment could not provide this data).

- I analyzed results identifying key issues 1) an unusually small scoring distribution 2) little change in scoring data in sequential attempts 3) Quality issues with the pre-assessment and alignment with learning resources.

- Created supplementary resources by identifying C188 LR question which overlap with C857 content: link.

- I presented findings to course faculty and senior management and the program chair.

- Working with CIs and the program chair, we proposed solutions for immediate and long-term change (including an example performance assessment).

Result: The objective assessment was rewritten along with improved guidelines. Early data supports a much-improved test and student experience.

C857 Software and Quality Assurance Learning Resource Quality

Situation: Students routinely complained that the assessments covered material not in the learning resource (LR).

Task: First, I needed to determine if student concerns were accurate. If accurate, I needed to provide immediate and long-term solutions.

Action: I collected anecdotal evidence through collaboration with C857 CIs and PMs, reviewing course chatter comments, and direct student communications. As the collective experience supported the claim that LR content was missing, I collected and created temporary supplementary resources to address the content gap [1]. I made an aggressive effort to own student awareness of these issues (over outside sources such as Reddit) through welcome emails, PM presentations, and collaboration, COS page announcements, course chatter comments, etc. I collaborated with the BSCS Program Chair, Mike Peterson, who worked with PD and the LR vendor (uCertify) to verify and identify the gaps.

Result: Identifying the gaps and distributing the resources supplementary resources immediately had an impact on student performance. Furthermore, we took control of student perception of the issues. Transforming it from negativity and frustration to one of a fixable issue under improvement. Previously, PD and uCertify adamantly claimed that no content was missing. However, once the program chair got involved, he was able to confirm that there was a difference between what PD and students saw. Per the program chair, the missing content was added to the LR. Moreover, further cause was identified to rewrite the assessment [2]

C857 Software and Quality Assurance Assessment Performance

Situation: Students consistently expressed concern about a specific question on the assessment claiming it had no correct answer. This is particularly concerning because data showed the assessment distribution to be very narrow.

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[1] See: C857 Lesson 2: Bug Management and LINK (Elaine credit)

[2] It should be noted that all of the C857 assessment and LR issues cited in this document existed for approximately three years before being fixed. During his time, CIs, students, and PMs reported problems that Assessment Service and Product Development failed to verify or fix.

Task: I needed to determine if the complaint was legitimate and, if so, find a solution.

Action: I interviewed CIs and students who described the question and choices consistently verifying the issue. I first contacted Assessment, but they reported that no issue existed. I then asked the program chair to look at the assessment upon which it was discovered that the question had no correct answer. I then gathered data to identify students who were potentially not rewarded competency due to faulty problem

Result: On an assessment where 98% of scores fell with four questions, we identified and fixed a faulty question that the Assessment had missed for years. Adding this to a long list of quality issues, we provided the assessment's replacement impetus. Albeit early, it appears student outcomes will be greatly improved.

C857 Software and Quality Assurance Assessment Integrity

Situation: Students were asking questions about the C857 assessment, which seemed unusually detailed, and I suspected that some students had obtained copies of our high-risk assessment.

Task: Determine if copies of C857 assessment questions existed, and if so, have the copies removed and the leaked problems replaced.

Action: Conducting a web search, I discovered that a large number of C857 assessment questions had been captured with a simple camera. I alerted the program chair, initiating a deeper investigation to find more leaked assessment questions.

Result: The leaked problems were removed from the web and the high-stakes OA protecting the academic integrity of our high-stakes assessment.

C949 Data Structures and Algorithms I

Situation: As a prerequisite for C950 (Data Structures and Algorithms I), C949 covers both coding practice and abstract computer science concepts such as Big-$\mathcal{O}$ time complexity far beyond the scope of the OA. Though the C949 has a high pass rate and students are often prepared to pass quickly, the inclusion of this material confused students and slowed their progress.

Task: Improve student performance by correcting competency expectations.

Action: First, I reached out to PMs to learn, discuss, and open the opportunity for collaboration. PMs are the best tool for reaching students, so I presented on C949 at PM team meetings. I

created an accessible guide LINK, learning resources, and practice problems aligned to the OA LINK. Additionally, I reached out to students directly via course chatter, course tips, and emails and shared resources with my colleagues.

Result: Per PM comments, student course chatter comments, and student interactions; we saw a reduction in student apprehension regarding the algorithm section.

C950 Data Structures and Algorithms II SME

Situation: The C950 performance assessment (PA) directions contain self-conflicting and vague instructions. The issues caused student frustration, lost CI time, unnecessary multiple submissions, and gave the appearance of poor academic quality

Task: Find immediate and long-term solutions for the above issues.

Action: I contacted the Evaluator supervisor (Goran –) and the program chair (Mike Peterson), outlining the issues in a detailed specific document LINK. To provide immediate results, I rewrote the task directions to correctly align the rubric, evaluator guide, task overview, and CI experience with what evaluators accept. I then worked as a SME with PD and evaluation to have the official task directions rewritten.

Result: There has been a reduction in student questions, frustrations, and returned submissions.

C950 Data Structures and Algorithms II Performance

Situation: Students were often confused and overwhelmed by the C950 performance assessment.

Task: Provide students with the means to understand and complete the performance assessment while maintaining academic integrity

Action: Collaborating with colleagues, I identified several factors impeding student progress: 1) They misunderstood the problem they needed to solve 2) They lacked basic Python programming skills 3) They struggled with program design. Together these lead to student inertia further exacerbated by an LR, which aligns poorly with the PA. 1 and 3 were addressed through a series of webinars (Link) and distributing a FAQ (LINK). Problem 2 was addressed by providing instructional videos targeting accessible Python skills relevant to the PA.

Result: Students can make adjustments to Python are now manageable, and begin the

project with an understanding of what is required.

C950 Data Structures and Algorithms II Task Directions

Situation: Students were often confused and overwhelmed by the C950 task directions and rubric.

Task: Provide a single resource with accessible explanations of the requirements, answers to common questions, and targeted supplemental LRs. So that CIs can continue student support under growing caseloads.

Action: Collaborating with Evaluation and colleagues, I identified common pitfalls and questions. Aligning the official evaluator guidelines, evaluator practices (per CI experience), task directions, and the rubric; I rewrote and distributed the task directions: version 2 and version 1.

Result: Students have a readable and consistent set of directions. Student questions, frustration, and returned submissions have decreased.

C951 Artificial Intelligence Tasks

Situation: Students were often confused by the task directions, taking more time than necessary due to overworking the requirements, and CIs spent much time repeatedly answering the same questions.

Task: Provide a single resource with accessible explanations of the requirements, answers to common questions, and targeted supplemental LRs. So that CIs can continue student support under growing caseloads.

Action: Collaborating with Evaluation and colleagues, I identified common pitfalls and questions. Aligning the official evaluator guidelines, evaluator practices (per CI experience), task directions, and the rubric; I rewrote and distributed the task directions:

- C951 Task 1 alt. directions and FAQ
- C951 Task 2 alt. directions and FAQ

I also created intro videos discussing the task requirements and answering common questions. The videos are meant to preempt typical student mistakes and make the tasks seem more technically accessible.

- Getting started with Task 1
- Getting started with Task 2

Result: Students have a readable and consistent set of directions. Student questions, frustration, and returned submissions have decreased.

C952 Computer Architecture Performance

Situation: The LR uses an edited version of COD (LINK), a 1000-page technical textbook designed for 2-3 rigorous semester-long courses -not a six-week course. Students were failing to make expected progress and became overwhelmed with the depth and scope of the material. Furthermore, the LR edited reference information creating a disjointed reading experience.

Task: Determine and distribute an achievable six-week study plan.

Action: Combining collective experiences from students and colleagues with the preassessment, I developed an easy-to-follow plan reducing the required reading to about a fourth and radically eliminating the need to engage rote, technical information. I also gave presentations at PM team meetings outlining the problems and advising best practices.

Result: Students are aware of competency expectations and how to best approach the course. Pass rates have met or exceeded goals

C952 Computer Architecture

Situation: Students (even those having recently passed (C958-C960) were struggling with relatively simple computational problems.

Task: Determine the reason and find a solution.

Action: Comparing the preassessment and student experiences with the LR (zyBooks) revealed that the LR aligned poorly with the assessments in terms of scope, depth, and (to a lesser extent) style. Furthermore, the LR lacks sufficient, relevant practice problems. Students often score around 50% on the preassessment *before engaging the LR* but typically struggle with 12% which are problems of this type.

- I created and distributed an C952 online quiz, complete with detailed solutions, of relevant practice problems.
- I wrote a second set of C952 problems v2 and Python wrote code using randomization to produce more problems. The source files have been made available to faculty; students now have an infinite supply of practice problems.
- I wrote a shortened list of relevant vocabulary: C952 terms to know,
- I hosted a webinar series focusing on the computational skills and incorporated these into the above-mentioned study plan to promote asynchronous learning: C952 Pipelining and binary problems and C952 CPU time problems.

- I created and distributed detailed solutions on how to handle preassessment problems #38 & #44 which have errors representative of what students have reported seeing on the assessment. The errors are such that they confuse students but do not necessarily interfere with finding the correct solutions [3].

- I created and distributed a guide on C952: two's compliments.

Result: Students now have resources focusing on the correct scope and depth for computational computer architecture content. Students now have the means to practice and hone the technical skills required for the assessment, and CIs have resources to target specific student needs as indicated by coaching reports.

C960 Discrete Math II

Situation: The learning resource did not provide sufficient practice problems. Provided practice problems were often misaligned with the assessment. The problem was worst in competency sections identified by product development as the most challenging.

Task: Having well-aligned practice problems is critical for any course but particularly.

Action: I worked with the PDS and set up a meeting with the course owner. In preparation for the meeting, I wrote a collection of example problems. During the meeting, the PDS presented students' impact and requested my example problems be inserted into the LR. However, the course owner claimed that cost prohibited this. Unable to work through product development, I wrote a collection of problems organized by the competency sections. I then created LaTeXtemplate for creating more problems, moved the source files onto a cloud service, and gave the IT Math team full access to the account.

Result: The practice problems became a key tool in helping students. Course comments from students frequently recommend this resource. Furthermore, the IT Math team still uses the problems and can develop more, though they have not found this necessary.

C960 Discrete Math II Assessment Quality

Situation: The C960 pre-assessment contained many errors. As students were often already struggling with the already difficult content, the errors had a particularly negative impact. CIs wasted much of their time re-explaining the errors. The lack of quality reflected poorly on the academic value of WGU.

Task: Find and fix the errors.

Action: Working collaboratively with the C960 CIs, I created a process to submit tickets non-redundantly and track them until closure. The latter step was important as product development was prolonged to cause content-related problems. As psychometrics did not identify most of the issues, I had to make convincing mathematical arguments for product development.

Result: Most issues on the pre-assessment were fixed -reducing time wasted by CIs and student frustration. The academic integrity of WGU's computer science program was improved.

C960 Discrete Math II Learning Resource Quality

Situation: The learning resource has many typographical and content errors.

Task: Improve the learning resource or provide alternative resources.

Action: Systematically submitted tickets identifying errors. As product development was prolonged to fix even minor typos (they had to work through zyBooks), the process was prolonged, and tickets needed to be tracked. In areas where organization and design made the issue too difficult to fix, I began to collect and develop alternatives.

Result: Some issues were fixed -reducing time wasted by CIs and student frustration. The academic integrity of WGU's computer science program was improved.

C960 Discrete Math II SME

Situation: Product Development requested CI assistance in writing content for the C960 learning resource. Though zyBooks was contracted to create this resource, they were unable to provide introductions and summaries for many chapters.

Task: After volunteering, I was asked to write introductions and summaries for a chapter section yet to be written (this is backward, but it wasn't my choice). Furthermore, I was given little direction for the coming content or expectations. Throughout the process, my task was redefined and necessary completion exceeded initial estimates.

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[3]I have submitted tickets for both of these problems -but asked they not be corrected until corresponding problems are checked on the OA. As it is better that students have an opportunity to practice dealing with these issues.

Action: Contacted the WGU project manager working with zyBooks, to clarify expectations and the need for better communication. I adapted to PDs evolving needs and worked with my manager to balance time; during this period I continued to maintain my CI SLEs at a high level of performance. All deadlines were met, and even with the unusual circumstances, wrote quality content.

Result: Though the zyBooks learning resource has much room for improvement, some of the more rigorous sections had improved accessibility for students. The PD project manager gave positive on my contributions.

C964 Computer Science Capstone

Situation: Capstone students are randomly sending emails to and making appointments with CS CIs. Students are often confused about the requirements, unprepared for the appointments, and generally lost. Moreover, upon communicating with the student, we often find that they should be working with another CI.

Task: Facilitate capstone student support by organizing practices for directing non-ACI support, practicing better communication between ACI and non-ACIs, and establishing student and capstone expectations of non-ACI capstone support.

Action: After discussing anecdotal experiences with my manager and BSCS CIs, I reached out to the C964 CI manager. Speaking at their team meeting, we discussed the issues and clarified what we needed to contribute. As a result, C964 created resources and began outreach to non-ACIs, clarifying their role and need. A survey defining areas in need of non-ACI support and asking for volunteers was created.

Result: A previously muddled process has begun to be replaced by procedure and collaboration. Students are more likely to be connected with non-ACIs who are willing and able to assist them.

BSCS Playbooks NOT DONE

Situation: Management asked CIs to write course playbooks. The deadline was short notice, at the end of term, and approaching an academic summit

Task:

Action:

- C951
- C952

Result: Playbooks meeting the requirements were written with the highest standard within the limitation of provided time and resources.

2 Collaboration/Leadership

Math Meeting

Situation: WGU has no forum to discuss common issues, interests, or professional development for our mathematics/CS faculty.

Task: Provide WGU mathematics/CS faculty with a forum to discuss common issues, interests, or professional development. Furthermore, I sought to establish better inter-college collaboration, camaraderie, and morale.

Action: I founded, organize (including scheduling speakers), and facilitate the Math Meeting, a university-wide gathering to promote collaboration, development, and networking of WGU faculty interested in math and math related fields.

Result: WGU mathematics/CS faculty now have a forum to discuss common issues, interests, and professional development. Furthermore, we have built better inter-college collaboration, camaraderie, and morale.

- **Gary Malkasian**, **WGU Computer Science alumni.** *Introduction to Neural Networks and their Use in Predicting Outcomes in Foster Care Adoption.*
- **Erin Hodges, PhD.** *Using R with High-Performance Tools on a Windows Laptop.*
- **Lauren Gilroy, PhD.** *SecureWorld global conference cybersecurity presentation.*
- **Mike Peterson**, **PhD.** *Base number Systems ...and the perception of numbers.*
- **Yu Ku and Sharon Mosgrove**, **PhDs.** *Replacing the math hotline with WebEx study halls.*
- **Gideon Weinstein, PhD.** *Mathematicians are lazy-oops-efficient: Connecting students to concepts through vocabulary.*
- **Jim Ashe, PhD.** *Cauchy's Rigidity Theorem. A quintessential "book proof."*

NC Tech Talk Panelist

Situation: WGU NC needed a representation for an NC Tech Talk episode, *Competing With Urban Markets For Top Talent.*

Task: Represent WGU as a student-facing CS faculty member, a CS SME, an NC WGU employee knowledgeable institutional operations.

Action: Though given little preparation time, I worked with IT College Provost, Elke Leeds, and WGU NC chancellor, Catherine Truit, to study current data in preparation for an array of possible questions.

Result: An excellent, well-received panel discussion. WGU's potential to play a role in fulfilling NC's growing IT employee demand was recognized.

FIT Representative

Situation: An initiative led by VP Paul Bingham, the Faculty Innovation Team, collected peer-elected course faculty to collaborate with upper management on innovative projects.

Task: I was nominated and elected by my peers as the representative of my group.

Action: I contributed until my promotion to the IT Capstone team in 2022.

Result: The main goals of FIT were to collect feedback and build trust between upper management and faculty. In this, my participation contributed considerably. One such example, was achieving college-wide transparency regarding hiring practices that resulted in high student caseloads following the COVID pandemic

WGU NC Blog Contribution

Situation: WGU NC Public Relations Manager, Glenn Gillen, needed a CI SME contribution for the blog *Spotlight on WGU's College of IT*.

Task: Glenn asked that I write a contribution highlighting what distinguishes WGU's College of IT from other schools

Action: I accepted the request, made some further suggestions on how to best define the CI title outside WGU, and submitted the contribution before the requested deadline.

Result: The blog post was written and pushed onto social media: Helping North Carolina companies hire in-state IT talent.

BSCS Team Leadership

Situation: Following the growth of the CS program, the CS team split from Kristina Hollands's team, creating a leadership and organizational gap.

Task: Fill the leadership gap.

Action: Consulting with the previous manager, I organized meetings and resources, facilitated meetings, kept meeting notes, met semi-regularly with team members, helped with interviews, etc.

Result: I provided leadership, and organization, and fostered a positive team atmosphere. As cited during the 1/6/2021 IT Fireside Chat meeting, we consistently exceeded team goals during this time.

PM and CI collaboration.

Situation: PMs are not current on course best practices, and CIs are not current on term planning best practices.

Task: Share information on course best practices with PMs, gather input from PMs, and develop a practice of better communication.

Action: Collaboration meetings

- C769 PM presentation (2022–). Regular ($\approx$ bi-annual) presentation overview and collaborating on best practices for student success.
- C964 PM presentation (2022–). Regular ($\approx$ bi-annual) presentation overview and collaborating on best practices for student success.
- D195 PM presentation (2022–). Regular ($\approx$ bi-annual) presentation overview and collaborating on best practices for student success.
- "Ride along" collaborative meeting with VP, Dean of Cybersecurity Paul Bingham.
- CI peer coaching new BSCS CI, Clifford Kettemborough (5-6/2021).
- C964 and C951 alignment and C964 problems/solutions meeting with C964 CI Candice Allen (4/9/2021).
- C952 alternative pre-assessment development team organization with Sidney Rubey & Jack Lusby (5-6/2021).
- C952 LR development problems/solutions meeting with C952 CIs (4/8/2021).
- Team email policy meeting with CI Amy Antonucci (4/7/2021)
- Solutions so CIs can scale student service to growth. Meeting with Sr. Mgr Jason Gribbins (4/2/2021).
- CDE Designation Requirement Faculty and Student research requirements discussion with Lauren Gilroy (4/1/2021).
- C951 CI introduction questions, Cemal Tepe (3/25/2021).
- Program Chair meeting covering playbook update requirements (3/24/2021).
- Collaborative meeting with Math Center CI, Josh Dodge, to discuss professional development and project opportunities.

- Meeting with psycho-metrician, Heather Hayes, to discuss C950 assessment data (12/3/2020).
- PD/CI collaboration meeting with PD specialist Jessica Bullock and Farah Malik (11/11/2020).
- C950 evaluation process meeting with PD and evaluation ($\approx$5/30/2020)
- C949 mentoring meeting with CI Jess Schwarz ($\approx$4/15/2020)
- C857 meeting with LR vendor and BSCS Program Chair regarding unshuffled OA reports being sent to students (2/7/2020).
- C951 collaborative meeting with evaluation manager, David Couch, on revising C951 standard evaluation comments (2/19/2020).
- *Bridge the Gap* (led by Connie Ozmer) participant (9/3/2020)
- C950 mentoring CI new CI Cemal Tepe ($\approx$8/1/2020)
- PM mentoring activity with new hire PM, Marcus Click (8/13/2019)
- PM collaboration meeting PM, Christopher Ruffin (8/8/2019)
- C960 SME consult with PD quality assessment manager, Scott Yorkavich (1/25 and 2/14/2020).
- C950 mentoring CI new CI Jack Lusby (7/15/2019)
- C958 meeting with C958 CIs, BSCS manager Kristina Holland, IT Math manager Carol Mortensen, and BSCS program chair to discuss issues and solutions for the C958 BSCS Calculus course (4/26/2019)
- C958 meeting with C958 CIs, BSCS Program Chair, and Senior Manager Eric Lagally to discuss issues and solutions for the C958 BSCS Calculus course (4/23 & 4/29/2019).
- Collaborative meeting with PM leader Eric Rasmussen (4/23/2019).
- IT-math collaborative meeting with PM leader Joyce Dahlhauser (4/23/2019).
- C958 collaborative meeting wiht C958 CI Brad Fehnel (4/22/2019).
- C960 Big-$\mathcal{O}$ and preassessment issues summary report written for C958 PDS meeting with PD (approx. 3/15/2019).
- Mentoring new CI, Jack Lusby (4/2 & 4/3/2019).
- IT-Math collaborative meeting with C958 CI, Brad Fehnel (1/23 & 3/21/2019).
- Collaboration meeting with PM, Bryan Chun, on best practices (3/12/2019)

- Collaboration meeting with PM, Rebekah Coggin, on best practices (3/11/2019)
- Collaboration meeting with Elaine Moran on C857 issues and additional LRs (1/14/2019).
- Collaboration meeting with PM Becky Stovall's small team to answer questions regarding C857 (1/7/2019).
- Collaboration meeting with PM Kelcey Asuao to answer questions regarding C857 (12/10/2018).
- Small team meeting with C952 CIs to discuss issues and solutions for C952 (11/15/2018).
- Collaboration meeting with PM Margaret Epperson regarding outreach practices for inactive students (10/8/2018).
- Collaboration meeting with PM Karitsa McCoy regarding outreach practices for inactive students (10/3/2018).
- Collaboration meeting with PM Megan Parker regarding assessing student assessment readiness (10/2/2018).
- Collaboration/mentoring meeting with CI Mike More regarding practices to increase course completion and assessment attempt rates(9/27/2018).
- Collaboration meeting with Program Chair Mike Peterson regrading C960 assessment and LR issues (9/25/2018).

Presentations

- *BSCS Course Diagnostic: A CI perspective LINK*. All BSCS team meeting
- C857 qualitative issue review with PM leaders, Assessment representative, CI manager (Kristina Holland), Senior Manager (Peggy White), and BSCS Program Chair Mike Peterson. An hour-long presentation summarizing assessment and learning resource qualitative issues (approx4/1/2020).
- C949 SWAD team presentation assisting CI Jess Schwarz (11/11/2020)
- C949 & C950 PM team presentation (8/21/2019).
- C952 PM team meeting presentation. ($\approx$6/15/2020)
- *WGU Math Meeting* presentation: *Cauchy's Rigidity Theorem*.
- C950 playbook revision CI meeting (3/4/2021)
- C951 CI & evaluation collaborative meeting (3/5/2021)

Result: PMs have a better understanding of how to help and advise students

BSCS CI Peer Coach

Situation: The BSCS manager asked for CI Peer Coach volunteers to help train new CI hires.

Task: Serve as a CI Peer Coach, and help train new CI hires.

Action: I meet 2-3 times per week with the new hire, sharing best practices, motivating, and assisting in the fulfillment of training requirements. Additionally, I set up and organized an appointment calendar to assist with call shadowing.

Result: The new CI completed training and smoothly transitioned into being a productive team member

BSCS Calculus

Situation: BSCS students were failing to meet OTP due to Calculus (C958).

Task: Underlying causes needed identification, management needed to be aware of issues, and both feasible short and long-term solutions needed to be proposed.

Action: I organized small team meetings with stakeholders able to contribute: CIs, program chairs, and IC managers. Identified poor course design, poor prerequisite algebra skill proficiency, entry standards, a lack of properly aligned preparation materials, and a platform that does not allow flexible CI input as key issues.

Result: The program chair took these concerns to PD and collaborated with C958 CIs, improved the LR to suit student needs better, advised changes in PM degree policy, and directed enrollment to raise prerequisite requirements. Collectively these changes had a significant impact on student performance.

C952 Playbook development

Situation: The C952 is out of date and the information written by third-party vendor(s) contains incorrect and misleading information.

Task: Fix the playbooks so they are usable as a PM resource.

Action: Met with C950 CIs to gather input (3/4/2021).

Result: Resolved.

3   Student Support

Mathematics Course Support

Situation: Students receiving inadequate mathematics support

Task: I was asked, volunteered, or suffused the responsibility to support these students.

Action: I learned the subjects, familiarized myself with the courses, found resources, developed resources, and adopted these students' support into my workflow with no additional compensation, recognition, or resources.

Result: Students got the support they needed. I can support any mathematics/statistics-related course at WGU or any university.

Computer Science and Programming Course Support

Situation: Students receiving inadequate mathematics support

Task: I was asked, volunteered, or suffused the responsibility to support these students.

Action: I learned the subjects and technical requirements (including but not limited to Python, Java, Lua, CoppeliaSim, AIML, ARM, LEGv8, Computer Architecture, Software Quality Assurance, and Machine Learning), familiarized myself with the courses, found resources, developed resources, and adopted support of these students into my workflow.

Result: Students got the support they needed. I can support any computer science/programming-related course at WGU or any university.

Computer Science Capstone Support

Situation: Students receiving inadequate SME support for the computer science capstone. Capstone students were setting up appointments with CS CIs with little understanding of what they needed help and often with the wrong SME.

Task: I was asked, volunteered, or suffused the responsibility to support these students in all questions related to math, descriptive and inferential statistics, and machine learning.

Action: I learned the subjects and technical requirements, familiarized myself with the capstone requirements, and adopted these students' support into my workflow. I also collaborated with capstone and CS CIs to develop better student support practices.

Result: Students are getting the support they need from the correct SME. Practices to better manage student expectations and CI involvement are being developed.

Computer Science Students Support

Situation: Graduate school referrals

Task: Regularly, I'm asked by students to write graduate school recommendation letters. I am unaware of anyone else who does on our team.

Action: Referrals include (but are not limited to):

- Brian Betancourt
- Leon Gadaguer
- Rachel Leon
- Ryan Hilde
- Shaunak Amin
- Taly Huang
- . . .
- And more. This list has become too long to maintain.

Result: Reputable programs typically require referral letters for admission. According to our program chair, our students have a record of successfully being admitted to and completing graduate programs.

4 Professional Development

4.1 WGU Presentations

- *Creating Professional Portfolios with GitHub* Women on IT workshop. 9/20 & 9/27/2023.

- *Optimization, Modeling, and Exploration. An intro to learning to use Machine Learning.* Women of IT. 9/21/2023

- *Student & Faculty Solutions. Building developing content with GitHub and GitPages* Lunch and Learn IT college presentation. 11/17/2022.

- *The new old maths: D420, D421, & D422: A fun tour of concepts covered in our upcoming new courses.* Lunch and Learn IT college presentation. 5/22/2022.

- C769 PM presentation (2022–). Regular ($\approx$ bi-annual) presentation overview and collaborating on best practices for student success.

- C964 PM presentation (2022–). Regular ($\approx$ bi-annual) presentation overview and collaborating on best practices for student success.

- D195 PM presentation (2022–). Regular ($\approx$ bi-annual) presentation overview and collaborating on best practices for student success

- *BSCS Course Diagnostic: A CI perspective LINK*. All BSCS team meeting

- C857 qualitative issue review with PM leaders, Assessment representative, CI manager (Kristina Holland), Senior Manager (Peggy White), and BSCS Program Chair Mike Peterson. An hour-long presentation summarizing assessment and learning resource qualitative issues (approx4/1/2020).

- C949 & C950 PM team presentation (8/21/2019).

- C952 PM team meeting presentation. ($\approx$6/15/2020)

- *WGU Math Meeting* presentation: *Cauchy's Rigidity Theorem*.

4.2 Training & Webinars

- *Workshop on the Geometry of Circle Packings* as part of the *Thematic Program on Geometric Constraint Systems, Framework Rigidity, and Distance Geometry* invited conference participant.

- *Emerging Leader Program* training course completion (7/1/2020).

- *Accelerating AI Adoption with Machine Learning Operations* webinar attendance (3/31/2020).

- *Leo Phase II* pilot participant (10-11/2020).

- *Bridge the Gap* faculty training participant (9-10/2019)

- *PEARLS* asynchronous faculty training (1/30/2019)

- *WGU Security training* (1/8/19)

- *Data Science Central Webinar: Mathematical Optimization + ML: Featuring Forrester Survey Insights* (9/17/2020)

- Invited to *Summer Circle Packing Symposium 2018* at James Madison University (8/13-17/2018)

- *How to Learn Math for Teachers: A Growth Mindset.* Stanford Center for Professional Development Course No. XEDUC115N-011. satisfactory course completion. 6/7/2016-12/31/2016.

- *DAACS Part 1 and 2: Math Center Mentor* course completion. 5/10/2017.

4.3   Research

- *Circle Packings with Generalized Branching*. 2016. James Ashe, Edward Crane, & Kenneth Stephenson. *The Journal of Analysis* vol. 24, 251-276.

- *Circle Packings with Deep Overlaps*. expected publication in 2021[4]. James Ashe.

- *Cauchy's Rigidity Theorem*. WGU Math Meeting! 2020.

- *Circle Packing: A Visual Introduction*. 2014. UNCA junior colloquium.

- *Generalized Branching in circle packing: A discrete Ahlfors function*. 2014. AMS Southeastern Spring Sectional Meeting.

- *Modeling the Thomson Problem with Circle Packing*. 2012-2013. HBCU-UP mini-grant student research project.

- AMS Mathematical Research Communities. 2012. *Discrete and Computational Geometry*, Conference participant.

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[4] All major results have been proven and reviewed. This paper will generalize standard circle packing results to include overlaps up to π on the plane, disc, and sphere. The latter case will be a generalization of the famous Koebe-Andreev-Thurston theorem.