



## Department of Biology

Promotion and Tenure Committee  
Department of Biology, Western Kentucky University  
Bowling Green, KY 42101  
August 8th, 2020

Dear Promotion and Tenure Committee:

I request the review of my [Continuance dossier](#),<sup>1</sup> which includes a summary of my teaching and service, from Fall 17 through Spring 2020, as outlined in [The Department of Biology Tenure and Promotion to Associate Professor – Guidelines for Pedagogical Faculty](#).<sup>2</sup> The “Outcomes & Examples” put forth in the guidelines are explicitly addressed in the accompanying tables with supplemental evidence in the supporting figures, links and in my [curriculum vitae](#). This is the three-year mark in my efforts to advance instruction in the Biology Department through development of an innovative, inquiry-based<sup>3</sup> learning environment in our introductory courses. My primary mission is to elevate the biology-major student experience, leading to improved student outcomes and increased retention. With the support and approval of my Mentoring Committee,<sup>4</sup> I have developed hierarchical goals and measurable outcomes ([Figure 1](#)) in line with this mission. I developed a timeline regarding curriculum revision and implementation, which has been revised this year due to faculty changes and the COVID-19 pandemic ([Figure 2](#)).

In pursuit of these goals, I have developed seven primary objectives, which relate directly to the expected and example outcomes from the Tenure and Promotion Guidelines: 1) to gain exposure and familiarity with our introductory biology labs and lectures; 2) to provide a quality educational experience to all my students; 3) to identify needs, implement new practices, and create new curricular experiences; 4) to seek out and participate in professional development relevant to my position; 5) to support and advise graduate teaching assistants and biology students; 6) to collect data from faculty, teaching assistants (TAs) and undergraduates regarding their performance, perspectives, and experiences within our introductory courses,<sup>5</sup> and; 7) to find service opportunities that align with my pedagogical activities.

The COVID-19 pandemic had a profound effect on my activities this spring (review my [S20 Activity Report](#) for an overview of pedagogical and research interruptions with resulting temporal and strategic adjustments). Throughout this document, where appropriate, I highlight the novel pedagogical efforts required to move courses online, provide student evaluations of my effectiveness during the crisis, and indicate how the disruption has affected my overall trajectory of revision.

---

<sup>1</sup> For easiest navigation, use the online version of this packet, [here](#). Links throughout appear in red: Nonunderlined links are to internal pages in this dossier while underlined links are to documents in an online database @ [www.njmprofessionaldocs.com](http://www.njmprofessionaldocs.com). Depending on your platform, use the CTRL+ right click function and “yes” for access. While navigating, you can select “open in a new tab” to save your place in this document.

<sup>2</sup> Please view previous [2018](#) and [2019](#) Appointment Recommendations and [2018](#) and [2019](#) Continuance Approval Letters.

<sup>3</sup> I use the term “inquiry-based” throughout this document to reference all pedagogical techniques leading to a more open, inquisitive, and student-led classroom, including problem- and project-based learning techniques.

<sup>4</sup> Please view my mentoring reports from [2017-18](#), [2018-19](#), and [2019-2020](#).

<sup>5</sup> As pedagogical faculty, my research is driven by questions I can apply to my students, courses, and teaching methods. For that reason, I have included data collection and analysis (Objective 6) under Teaching, in Table 6.



## Department of Biology

**OBJECTIVE 1. TEACHING – PRACTICE & EXPOSURE.** I have taught 3 large (N = 131-181) sections of BIOL 120 Biological Concepts - Cells, Metabolism, and Genetics; 1 section of BIOL 120 Honors; 13 sections of BIOL 121 Biological Concepts Lab - Cells, Metabolism, and Genetics; and 7 sections of BIOL 123 Biological Concepts Lab - Evolution, Diversity, and Ecology ([Table 1. Teaching – Practice & Exposure](#) and [course statistics](#)). I have also coordinated BIOL 121 and BIOL 123, part-time in F17 and fulltime from S18 to S20. Additionally, in S20, I developed and taught a new course, BIOL 369 Cooperative Education in Biology - Learning Assistant Co-Op. Over the past three years I have supervised 28 graduate teaching assistants,<sup>6</sup> two undergraduate teaching assistants, and two willing faculty. I have taught 1,022 students in my own courses (BIOL 120, 121 and 123) and managed 2,884 students across over 90 sections of biology lab.

My original timeline called for a switch from focusing on BIOL 120 to BIOL 122 in the coming semesters ([Figure 2](#)). However, our department has experienced several changes with faculty who usually teach BIOL 120 (e.g., Drs. Rice and Bilyk). Coupled with looming retirements, based on conversations with our Chair and my Committee, it is clearly no longer prudent to plan to step away from BIOL 120 and begin teaching BIOL 122 in the immediate future. Instead, I will begin prepping for revisions to BIOL 122 including observing lecture, conducting a needs assessment with BIOL 122 faculty, and starting conversations about potential revisions based on what has worked in BIOL 120. The pandemic has also impacted my plans to shift focus toward BIOL 123 ([Figure 2](#)). I need (at minimum) one semester of normal, F2F instruction with the new BIOL 121 curriculum, across all sections, before moving to BIOL 123. Once this occurs (hopefully in S21), I will apply the lessons learned in BIOL 121 toward BIOL 123, allowing for quicker implementation.

**OBJECTIVE 2. TEACHING – QUALITY.** Over the past three years, my student evaluations reveal I provided a quality learning environment in BIOL 120 ([Figure 3](#), honors included), BIOL 121 ([Figure 4](#)), and BIOL 123 ([Figure 5](#)). Despite the unique challenges presented by COVID-19, my student evaluations remained high in S20 (calculated separately in [Figure 6](#)). Overall, my scores are above the college and departmental mean in each category ([Figure 7](#)). Student comments and other evaluations were equally positive as were letters of support ([Table 2. Teaching – Quality](#)). In S19, I was the Alpha Delta Pi Faculty Member of the Year and received the Ogden College Junior Faculty Teaching Award. In S20, I was the Alpha Omicron Pi Faculty Member of the Year and a CITL Teaching Honors Nominee. I will continue to monitor any changes in my teaching evaluations as heavier revisions are implemented, particularly focusing on question items where improved trends should be expected with increased inquiry ([Table 2](#)).

**OBJECTIVE 3. TEACHING – DIVERSIFICATION.** Over the past three years, I have identified needs and implemented new methods and content in BIOL 120, 120H, 121 and 123, and developed a new BIOL 369 course ([Table 3.1 Teaching – Diversification: New Methods](#)). In year one, I laid the groundwork for increased inquiry in the biology labs. In F17, I used the pre-existing course materials to allow for informed decision-making regarding changes moving forward. I determined several areas where logistical changes could provide a more systematic presentation of information,

---

<sup>6</sup> unique TAs counted by semester



## Department of Biology

and where adapting new teaching methods could increase organization and efficiency and enhance student access. These changes were implemented, augmented, and fine-tuned in S18. Additionally, I created and curated supplemental content to further independent exploration of concepts and focused on TA preparation (Table 3.1). In years two and three, I focused on BIOL 120, BIOL 120H and BIOL 121. I also developed a new BIOL 369 course to support curricular changes in BIOL 120 entitled, Cooperative Education in Biology: Learning Assistant Co-Op.

**BIOL 120 1Biological Concepts - Cells, Metabolism, and Genetics.** After observing BIOL 120 in F17 and S18, I introduced measures to increase student attendance and engagement; common issues in all large, lecture-based courses. I piloted and implemented use of the Acadly® app to take attendance via Bluetooth technology and created fifteen new 20 minute in-class assignments, now referred to as “Study-Starters,” which students complete in groups and submit in-class through Acadly® (Table 3.1). I piloted and continue to use two other apps for student response: FlashLITE® and MentiMeter®. Students were positive about these applications and the in-class assignments (Table 3.1), and I continued using them throughout F19-S20.

I implemented two new teaching strategies in BIOL 120 Honors in F19 (Table 3.2 Teaching – Diversification: New Content/Procedures & Acquisitions). The first was “Teaching to Learn,”<sup>7</sup> where students create lectures and activities for the class to cover small amounts of content. I plan to revise the introduction to this activity, based on student comments, and use it again in the future. I also introduced a PBL (problem-based learning) project where students were asked to identify a local, national, or global “problem” which was connected to our BIOL 120 content and could be addressed through scientific exploration. Students created scientific posters detailing their research and presented them to the faculty, staff, and graduate students in a poster session held on the third floor of Snell Hall. Based on anecdotal and written responses, the students were engaged in this activity and enjoyed presenting their work (Table 3.2). I plan on using this assignment in future honors sections and am exploring ways to integrate a mini version into the larger lecture sections.

In S20, Dr. Kerrie McDaniel and I developed a module on metacognition<sup>8</sup> to be presented to our students following the first exam (Table 3.2). This module, which I used in BIOL 120, introduces the concept of metacognition to students to improve study habits and help them better understand the difference between “studying” and “learning.” Once we test the outcomes of this intervention, we are hopeful it can be expanded into other courses. I also pilot tested Learning Assistants (LAs)<sup>9</sup> in my large BIOL 120 section (Table 3.2) in S20. My intention was to make the large class feel smaller by placing BIOL 120 students into groups of 10-15 for our in-class assignments and out-of-class study sessions, each led by an experienced upperclassman serving as an LA or “BioCoach.” This approach combines the effectiveness of a small class learning environment with the additional benefits of peer mentoring. The LAs were enrolled in my newly created Biol 369 course so they could receive credit for their efforts as BIOL 120 BioCoaches (Table 3.2).

---

<sup>7</sup> Teaching method wherein students are asked to teach new content to their classmates by themselves (Skinner, 1994)

<sup>8</sup> Integrating evidence-based research developed by Dr. Saundra Y. McGuire, Ph.D at Louisiana State University.

<sup>9</sup> Talented undergraduate students, primarily in mathematics and the sciences, chosen for their broad interest in teaching and prepared to provide support for student learning in interactive classroom environments (Science Education resource Center)



## Department of Biology

***BIOL 369 Cooperative Education in Biology: Learning Assistant Co-Op.*** This course was created for the new Learning Assistants to earn 1 credit hour for their role in BIOL 120 (Table 3.2). I introduced them to my large 120 lecture and split the class into 14 groups of 10-15 students. Each group was assigned a BioCoach whose primary role was to work with these small groups during lecture in which I had an in-class assignment planned (in-class assignments were first implemented in F18 and I quickly realized I was not able to adequately address all student questions during these 20 minute activities). BioCoaches were also tasked to communicate with their group members, set up study sessions, attend bi-weekly 369 meetings and to submit self-reflections on the usefulness of the assignments and the LA-intervention on the BIOL 120 students and for themselves (Table 3.2). I created a new Blackboard organization to house all course materials.

Although this experience was significantly impacted by COVID-19 (discussed later), I think there is potential for this innovation to improve the culture in BIOL 120 considerably. I believe giving students a “small class” experience within a larger one can have a positive impact on retention and student success. I am also confident that this experience will have positive impacts for the LAs themselves. Even with the interruption, they were extremely positive about the experience noting that it allowed them to review foundational content, to build communication skills and to foster a deeper connection to our department (Table 3.2). I will monitor the impact of the LA-project moving forward. If successful, this strategy could be duplicated in BIOL 122.

***BIOL 121 1Biological Concepts Lab - Cells, Metabolism, and Genetics.*** Following the baseline revisions in BIOL 121, I was prepared to begin the curriculum overhaul in F18. I created three new on-line labs to pilot-test in S19, each with three sections: pre-lab, protocol, and post-lab follow-up (Table 3.2). The online nature accomplishes three important things. First, it allows for added depth and texture to the pre-labs. For inquiry-based labs to succeed, students must be extremely well-prepared and should no longer require a 30 minute “mini-lecture” before lab activities can begin. The new online pre-labs are designed with this in mind, and include links to short demonstration videos, PowerPoint presentations, YouTube videos and the BIOL 120 text. Second, the lab protocol can now be linked to research articles, our online library, BIOL 120 content and back to the pre-lab content as needed. As students work through the inquiry-based protocol of each lab, they have access to external links to answer their own questions and conduct their own research. Lastly, the post-lab exercises allow students to submit their work from each lab period (e.g., their proposal, experimental design, data, findings, conclusions, etc.) and complete an on-line “exit slip” so hand-grading exit slips is no longer necessary. The post-lab exercise also connects the lab content with WKU Biology faculty and research, as well as with the BIOL 120 curriculum and e-text. The initial pilot went well in S19. Students seemed to be heavily engaged and preferred the online vs. the paper manual (Table 3.2).

I piloted the full 11-lab version in one section of BIOL121 in F19.<sup>10</sup> Throughout the semester, I kept detailed notes on issues that arose and revised throughout. I also added to the online research library and completed more faculty spotlights to integrate our department’s research into each module. At

---

<sup>10</sup> The e-text is available here: <http://www.121cellmetagen.com>. Please note the current “live” version reflects a hybrid model of BIOL 121 which I am currently preparing for F20.



## Department of Biology

the end of the semester, I re-worked the pre and post-lab assignments into a single submission, called a LABridge,<sup>11</sup> which includes submission of the post-lab assignment from the previous week as well as pre-lab questions for the upcoming lab. I developed a new Lab Set-Up guide to assist in prep for the new curriculum and added to the video demos on our YouTube channel (Table 3.3). Over the winter break, Ms. Naomi Rowland and I worked on establishing a protocol for the DNA analysis activity in Unit 3. She tested various methods I found in the literature, and successfully developed a student-friendly extraction and PCR protocol that yielded consistent results. Although I am still working on permitting to import meat samples from Kenya for analysis, I had planned to use “unknown” meat samples (donated by Dr. Steve Huskey) in S20, so my students could test the protocol and contribute to preliminary research. Full implementation began in all sections of BIOL 121 in S20, which was interrupted due to the pandemic.

**COVID-19 in BIOL 120.** The interruption caused by COVID-19 greatly impacted my intended lecture innovations (Table 3.3 Teaching – Diversification: COVID-19 Modifications). Dr. McDaniel and I had planned to compare the means of exam 1 and exam 2 to determine the potential impact of our metacognition module. This was not possible because exam 2 had to be delivered in an online-only format, invalidating any such comparisons. The BioCoaches (LAs) attempted to keep in touch with their small groups but were met with limited success as we transition to an all online format. Additionally, a planned classroom observation, with the BioCoaches, was not possible. The interruption also forced a pause on plans to begin work on standardizing BIOL 120 across sections.

To transition the course during the pandemic, I recorded all my remaining lectures via MediaSite and also made them available on my newly created YouTube channel and as podcasts. The YouTube videos require less bandwidth so were easier for my students with limited wireless access. I also created eight entirely new online assessments in Blackboard as well as 10 new at-home assignments to replace our in-class assignments. These at-home assignments included use of the LabBench activities, through Pearson’s Mastering Biology, which students found useful (Table 3.3). I will continue to use these assignments in BIOL 120 in the future.<sup>12</sup> To further communication, I used a new app called Slack<sup>13</sup> which allows for easy group texting. I heard from my students daily and could quickly answer their questions and alleviate concerns as they arose in real time. This app also facilitated a community atmosphere in BIOL 120, helping students feel connected to the course and to each other (Table 3.3). Additionally, I hosted voluntary Zoom recitation sessions twice weekly (one during our scheduled course time and one in the evening), so I could address any questions from the online lectures. My BIOL 120 students made it clear, they felt I provided them with the best possible experience despite the interruption (Table 3.3).

**COVID-19 in BIOL 369.** Before transitioning online, the LAs were introduced to my BIOL 120 students and completed two in-class assignments during lecture. We also held two face-to-face 369 meetings. Following the move to online instruction, the LAs continued to communicate with and support their small groups. I created a logbook using the Blackboard forum feature and asked them

---

<sup>11</sup> Credit: Doug McElroy

<sup>12</sup> Example assignment: “Tell Me What I Need to Know,” asked students to describe their current learning environment at-home. I replied to every student based on their submission, which created a useful dialogue I relied on throughout the semester.

<sup>13</sup> Slack is a text-based chat room that keeps phone numbers private in group chats (<https://slack.com>)





## Department of Biology

to check-in regularly. To make up for the lack of in-class experiences, the LAs also conducted a literature review on the topic of learning assistants in large lecture courses and they each developed two new in-class assignments they thought would be valuable for future use.

***COVID-19 in BIOL 121 and BIOL 123.*** Due to the pandemic, only the first four labs in BIOL 121 and BIOL 123 were implemented face-to-face. This disrupted full implementation of the new BIOL 121 curriculum across all sections; only the Diabetes Unit (on cells) was completed. Although disappointing, I gained valuable student and TA feedback that I will use for revision once F2F standard lab sessions are able to resume. The six remaining labs were completely rewritten and the new BIOL 121 e-text was revised to include the new online-only labs (Table 3.3). Delivering the online content was more difficult in BIOL 123, as we were still using the original paper manual, supplemented by Blackboard content. To facilitate online-only delivery, I created a new BIOL 123 online manual, which housed the six newly created, online-only labs (Table 3.3).

In both BIOL 121 and BIOL 123, I kept the original course content schedule. I used a mix of virtual labs, at-home labs, demo videos, documentaries, TedTalks and YouTube videos for students to explore and learn content. Where possible, I asked students to record their own data from virtual labs, or I provided them with data to use for analysis (Table 3.3). Students submitted revised post-labs to receive credit, which included data analysis, content questions, and places for them to submit “selfies” as they completed each lab activity (Table 3.3).

***Looking Ahead.*** Despite the difficulties of this past year, I have learned some valuable lessons I will apply to my courses in the future (e.g., assignments, communication apps, etc.). And, although the status of our F20 semester is unknown at this time, I will continue to progress towards this objective in meaningful ways. I am currently planning F2F and online versions of BIOL 121 and BIOL 123 and coordinating with Dr. Wyatt to “team teach” our BIOL 120 sections together. Additionally, I am working with Pearson on a pilot program to utilize class statistics to adaptively inform assignments and lectures. This program also provides students free, on-demand tutoring. Whatever the fall may hold, I will make progress on standardizing BIOL 120 across sections and hopefully can implement a new (more) standardized course experience in BIOL 120 by S21. I also plan to fully implement the new 121 e-text across all sections, hopefully by S21, and to begin working on a new BIOL 123 curriculum. In addition, during S21, I will begin a needs assessment with BIOL 122 faculty as we look toward revisions in the coming semesters.

***OBJECTIVE 4. TEACHING – PROFESSIONAL DEVELOPMENT.*** I took advantage of many professional development activities offered on and off campus over the past three years. I participated in several WKU-sponsored programs and multiple workshops through the Center of Innovative Teaching and Learning (CITL). I have attended local, state, and national pedagogical conferences (Table 4. Teaching – Professional Development). I traveled with Dr. Nancy Rice’s PicMik (Partners in Caring, Medicine in Kenya) group, funded through a new International Activities Grant (IAG) grant I obtained from the Office of International Programs (\$2,000), to reaffirmed existing partnerships to enhance the eventual curricular offerings in BIOL 121 and BIOL 123. I am currently working with Dr. Nancy Rice to source bushmeat and continue collaborations through study abroad in Kenya between our two Universities. In F19, I attended and presented at



## Department of Biology

the AACU Transforming STEM Education conference in Chicago, where I researched the idea of Learning Assistants for BIOL 120. Although travel was not possible in S20, I did participate in and serve as a panelist for online PD through CITL, and I have another opportunity pending for early fall. I have also started training with Pearson on a new adaptive component available as an “add-on” to their current Mastering content (used in BIOL 120 and BIOL 122). I was selected for this pilot program through Pearson which will provide me and my students free access to the new functions (e.g., real-time student tutoring and access to curated lecture content to address student short-comings based on assignment scores). Lastly, I am exploring the use of e-portfolios across courses (ideas gained from two AACU conferences in S19 and F19) and hope to find more relevant PD experiences to address this idea in the future.

**OBJECTIVE 5. TEACHING – TUTELAGE.** Tutelage in the art of education is one of my primary roles ([Table 5. Teaching – Tutelage](#)) and of course, teaching assistants play a major role in the success of our general biology lab curricula. I have set the groundwork for open and consistent expectations and communication through weekly meetings, Best Practices Protocols and Blackboard organizations to house communications and content. I have also created a TA Manual for BIOL 121. As I developed the new BIOL 121 curriculum and e-text, our TAs were at the forefront of my thought-process. I deliberately created material I felt confident they could implement. However, teaching in an inquiry-based class is very different than the traditional college lab model. I had planned to create a new teaching guide in S20, based on input from my TAs, however, their experience was limited due to the pandemic. As soon as full implementation can occur across all sections, I will conduct an improved “Inquiry-Based Teaching Workshop” to give TAs the support they need to be successful with the new methodology.

I have been active with graduate students as well ([Table 5](#)). In F17-S18 I began to serve as the biology advisor to the Master of Arts in Teaching (0495) program which entails review of all applications from graduate students seeking a Biology emphasis. I also served as the program coordinator for the Master of Arts in Education Biology Teacher Leader (0442) programs, which I helped close-out due to CAPE. I have been working as part of the WKU Biology Graduate Committee helping to ensure we accept qualified students each year. I have also advised graduate students on projects where human dimensions were under study (unofficially) and am excited to be serving on my first graduate student committee, with Ms. Sophia Corde.

I began undergraduate advising activities in S18 and have advised more than 70 undergrad students through the registrations process ([Table 5](#)). I created a “Mountjoy Advisee Organizational Site” on Blackboard, which houses many necessary materials for various tracks in our department. I started serving on my first pre-professional committee in S20 and have met with Drs. Crawford, Pesterfield and Wyatt to better understand this process. I was named the Alpha Delta Pi Faculty Member of the Year in S19, partially due to my success in undergrad advising. In the next year, I plan to take on more undergraduate advisees and increase communication and involvement with my online Master’s advisees. I also plan to begin advising undergrads on research projects through the Medical Center (discussed later).



## Department of Biology

**OBJECTIVE 6. TEACHING – SCHOLARLY ACTIVITY.** A benefit to teaching these courses in various levels of revision is that it allows for collection of baseline and trend data regarding retention, learning, and student/TA/faculty perspectives ([Table 6. Teaching – Baseline Data Collection & Scholarly Activity](#)). As I implement small and large-scale changes, these data provide an opportunity to analyze the effect of revisions and serve as indicators of change and success. Faculty perspectives are particularly important as changes to our introductory courses will affect the quality of students in upper-level courses. I am currently using these and other assessment measures in several projects that will eventually contribute to the pedagogical dialectic through conference proceedings and peer-review; however, my primary impetus is to evaluate the outcomes of my own methods and determine best practices for the BIOL 120-series ([Table 6](#)).

With the implementation of a new online lab manual in BIOL 121, I piloted a class survey in S19 where students were asked to compare the paper version to the e-text in several categories ([Table 6](#)). To better understanding the effects of my revisions, I am working with Ms. Naomi Rowland to analyze the impact of increased inquiry in various types of biology labs using the CURE survey (Classroom Undergraduate Research Experience; IRB #1110796-1), which includes questions regarding the student experience, attitudes towards science, the philosophy of science, learning style, and estimates of learning gains and benefits ([Table 6](#)).

In F19, Dr. Kerrie McDaniel, Ms. Naomi Rowland, and I presented some of this research at the AAC&U's Transforming STEM Higher Education conference. In S20, I began discussing a new project with Dr. Doug McElroy and Dr. Daniel Super, comparing several student success indicators across lecture-based courses with diverse pedagogies. Although this was sidelined by the pandemic, I was able to make requests through IR for preliminary analysis of several courses within our department. I plan to develop this project further in coming semesters. Several research projects, including the Metacognition study with Dr. Kerrie McDaniel, and an analysis of LA effectiveness, were also adversely affected by COVID (for a complete status report on each please see [Table 6](#)). Although the timeline for a "return to normal" is an unknown at this juncture, I plan to move what projects I can forward with literature reviews and preliminary data analysis even if data collection is temporarily paused, and have three manuscripts under construction at this time.

Regarding student retention and with the Ogden Retention Task force, we are assessing at-risk students across Ogden College (i.e., the issues they self-identify and support services they utilize; IRB #1380525-2) via an online survey. We are also surveying student perspectives on our current advising practices across the college (IRB #20-232) via online surveys ([Table 6](#)).

Over the past year, our department has agreed to reaffirm our focus on pre-professional undergrads by providing them with more relevant research experiences. I am exploring opportunities to partner undergrads with research projects through the Medical Center and the wider medical community in Bowling Green with Dr. Doug McElroy ([Table 6](#)). I am currently serving as a Co-PI on three research projects with the Western Kentucky Heart and Lung Research Foundation and Educational Trust. I plan to bring our undergrads into similar experiences in the future, as I continue to serve as a science advisor. Additionally, I plan to construct case studies around these projects, to use in BIOL 120 and 121.





## Department of Biology

**OBJECTIVE 7. SERVICE – UNIVERSITY/PUBLIC/PROFESSIONAL.** Over the past three years I have continuously engaged in one-time and continuing service at the department and college level (**Table 7 Service – University/Public/Professional**). Inquiry-based approaches should increase student success<sup>14</sup> and therefore retention. I have been pleased to supplement pedagogical activities with service that also improves recruitment and retention within our college and department. I have served as the co-chair for the Ogden Retention Committee since S19. My work on this committee has entailed the creation, deployment, and analysis of several surveys (faculty and student) as well as several presentations, including to the Ogden Advisory Board. I am enthusiastic about this role and hope to use it as a platform to increase retention-based pedagogical initiatives across Ogden. I am also pleased that I have been able to serve on the Biology Department Graduate Committee, and with my involvement in many departmental and college-level functions. Throughout the course of my employment, I will broaden my impact on WKU, Ogden College and the Biology Department.

I have relied heavily on advice and guidance from Drs. Simran Banga and Steve Huskey as former lab coordinators. Mr. Mark Clauson's experience and assistance has been invaluable. I have depended on the pedagogical expertise of Dr. Kerrie McDaniel and of Ms. Naomi Rowland (as well as her the molecular proficiency). Drs. Ajay Srivastava and Rob Wyatt were indispensable as I began teaching BIOL 120. Dr. Doug McElroy provided support regarding the new science-process labs in BIOL 121, and Drs. Michael Stokes and Albert Meier contributed useful ideas to implement in BIOL 123. I am grateful for all the faculty and staff support I have received and will continue to gather perspectives regarding the revisions; it is imperative that the BIOL 120-series is reflective of the needs and priorities of all of us, our Department, College and University.

Sustainable change takes time, requiring consistent iterations of implementation and evaluation, which have been interrupted by the pandemic. However, my productivity has not suffered; a monumental pedagogical effort was required, and continues to be necessary, to meet the challenges of COVID-19. I have learned valuable lessons this year that will improve the student experience even after we return to face to face offerings. For these reasons, and with the approval of my committee, I will not seek a delay in my tenure timeline. Thank you for reviewing my progress. I anticipate the thoughtful dialogue and reflection that this process will catalyze. I look forward to applying your input as I expand and implement exciting, rigorous, and valuable learning experiences across our major. Thank you for your time and consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Natalie Jones Mountjoy".

Natalie Jones Mountjoy

---

<sup>14</sup> Kingston, S. (2018). *Project Based Learning & Student Achievement: What Does the Research Tell Us? PBL Evidence Matters*. 1(1), 1-11.

### *The Spirit Makes the Master*

Department of Biology | Western Kentucky University | 1906 College Heights Blvd. #11080 | Bowling Green, KY 42101-1080

phone: 270.745.3696 | fax: 270.745.6856 | web: [www.wku.edu/biology](http://www.wku.edu/biology)

Equal Education and Employment Opportunities • Printing paid from state funds, KRS 57.375, 2006 • Hearing Impaired Only: 270.745.5389

**Table 1. Teaching – Practice & Exposure.** Outcomes and examples in pursuit of objective 1: to gain exposure to, and familiarity with, our introductory biology labs and lectures ([return to cover letter](#)).

Practice	<p>Courses (format, number, and levels; review <a href="#">course statistics, including grade distributions</a>)</p> <ul style="list-style-type: none"> <li>• BIOL 120 Biological Concepts: Cells, Metabolism, and Genetics, WKU main campus, 3 sections in F18, S19 and S20.</li> <li>• BIOL 120 Honors: Biological Concepts: Cells, Metabolism, and Genetics, WKU main campus, 1 section in F19.</li> <li>• BIOL 121 Biological Concepts Lab: Cells, Metabolism, and Genetics, WKU main campus, 5 sections in 17-18 and 4 sections in 18-19 and 19-20, respectively.</li> <li>• BIOL 123 Biological Concepts Lab: Evolution, Diversity, and Ecology, WKU main campus, 5 sections in F17 and two sections in S18.</li> <li>• NEW! BIOL 369 Cooperative Education in Biology: Learning Assistant Co-Op, WKU main campus, 1 section in S20.</li> </ul> <p>Maintenance of good teaching habits</p> <ul style="list-style-type: none"> <li>• <a href="#">Course syllabi</a> are posted on Blackboard and TopNet. Grading policies are in the syllabi and strictly followed. All quizzes and exams are graded and posted within one week.</li> <li>• All sections began on time and no classes were cancelled.</li> <li>• Office hours were posted online and adhered. I host 1-2 two-hour sessions per week and augment as needed, primarily in the weeks before and after exams.</li> </ul> <p>Treating students in a fair, impartial, and respectful manner</p> <ul style="list-style-type: none"> <li>• Mean “Fair Treatment” score from SITES = 4.8, compared with 4.6 for Ogden and the Biology Department (mean scores from F17-S20)</li> <li>• Mean “Fair &amp; Impartial” score from SITES = 4.7, compared with 4.4 for both Ogden and the Biology Department (mean scores from F17-S20).</li> </ul> <p>Evidence of systematic presentation of accurate, current information</p> <ul style="list-style-type: none"> <li>• I created standardized content (i.e., PowerPoints, pre-labs, assignments, and assessments) and pre-loaded each course package into each section for BIOL 121 and BIOL 123.</li> <li>• In F19, I adopted the newest version of BIOL 120 textbook: Freeman et al. (7<sup>th</sup> edition).</li> </ul> <p>Demonstrable efforts to challenge &amp; develop scientific, writing, and critical thinking skills</p> <ul style="list-style-type: none"> <li>• SITES scores were among the lowest when students were asked if our labs challenge them to think. Inquiry-based techniques are a proven means to increase critical thinking among students and I believe these scores will go up as the curriculum is revised.</li> <li>• BIOL 120: Developing these skills is difficult in large, lecture-based courses. In F19 I developed a new inquiry-based scientific poster assignment for the honors section to develop of these skills. I have also developed a series of “Study-Starters” for the large sections of BIOL 120 so students can apply critical thinking during class in small groups.</li> <li>• BIOL 121: Previously, there were no assignments which required scientific writing. The new curriculum now includes a technical report and scientific posters. Students also critically evaluate peer submissions. Additionally, students now develop and test hypotheses in every lab, whereas this practice was limited in the past.</li> <li>• BIOL 123: The existing writing assignment was revised and supplemented with additional resources on formatting, citations, research, and website quality. Additional hypothesis testing is required in this course and will be a large part of the revised curriculum.</li> <li>• The pre and post CURE (Classroom Undergraduate Research Experience) survey has been implemented for four semesters in both BIOL 121 and BIOL 123. This survey asks several indexable items regarding scientific writing and critical thinking skills. I intend to use these student responses to measure changes in these skills as the course is revised.</li> </ul>
----------	---

**Table 2. Teaching – Quality.** Outcomes and examples in pursuit of objective 2: to provide a quality educational experience ([return to cover letter](#)).

Quality	<p>Course Evaluations (SITES) and other Appraisals</p> <ul style="list-style-type: none"> <li>• Mean scores were significantly higher than both the college and departmental average for BIOL 120 (<math>F = 37.844</math>, <math>p &lt; 0.001</math>, <math>df = 84</math>; <a href="#">Figure 3</a>), BIOL 121 (<math>F = 39.68</math>, <math>p &lt; 0.0001</math>, <math>df = 118</math>; <a href="#">Figure 4</a>) and BIOL 123 (<math>F = 41.83</math>, <math>p &lt; 0.0001</math>, <math>df = 67</math>; <a href="#">Figure 5</a>).</li> <li>• COVID-19 presented unique challenges in S20. My mean scores for both courses, during S20, were also significantly higher than both the college and departmental average (<math>F = 67.02</math>, <math>p &lt; 0.0001</math>, <math>df = 79</math>; <a href="#">Figure 6</a>).</li> <li>• Across my sections from Fall 2017 to Spring 2020, the mean response to each question was between agree and strongly agree (4.38-4.88), and higher than the Departmental and College averages across all courses in every semester (<a href="#">Figure 7</a>).</li> <li>• These disparities were most pronounced on questions regarding preparation and organization, feedback, effectiveness, helpfulness, and enthusiasm.</li> <li>• Analysis of <a href="#">all students comments</a> shows they were mostly positive (<math>N=145</math>) vs. mixed (<math>N=23</math>), or actionable (<math>N=19</math>). A subset of positive comments is available in <a href="#">Figure 8</a>.</li> <li>• Peer appraisals were positive (<a href="#">Figures 9, 10 &amp; 11</a>). A planned evaluation in BIOL 120 was not possible in S20 due COVID-19.</li> <li>• Letters of support: <a href="#">Julia Smith</a> (BIOL 120), <a href="#">Phoenix Gray</a> (BIOL 120), <a href="#">Megan Owens</a> (BIOL121) and <a href="#">John Thornhill</a> (revised BIOL 121), <a href="#">Hailey Brandon</a> (BIOL 120H).</li> <li>• Teaching Honors: Alpha Delta Pi Faculty Member of the Year, Ogden College Junior Faculty Teaching Award, Alpha Omicron Pi Faculty Member of the Year, CITL Teaching Honors Nomination (<a href="#">see nominations</a>), and a letter of recognition from The Mahurin Honors College</li> </ul> <p>Evidence of attention to recurring comments (generalized student comments in quotations)</p> <ul style="list-style-type: none"> <li>• “Lab introductions were long and duplicative of content covered in lecture:” There are no more lab “lectures” in BIOL 121. Instead, interactive content has been added to the online pre-labs, which ensures a standardized knowledge-based before the lab begins.</li> <li>• “Directions/protocols in the new BIOL 121 manual are unclear:” Providing enough direction for students to feel confident yet still allow for discovery, is a delicate balance. This will require adaptive revision which is underway for next semester.</li> <li>• “Not enough rigor in BIOL 123:” More rigor will be integrated into the revised curriculum. These comments lessened after implementation of the revised scientific poster assignment.</li> <li>• “Unequal time spent with some lab groups:” I have purposively sought out less-engaged groups and reverse my check-out order every other lab.</li> <li>• “Lectures do not go over big picture ideas:” I now begin each new chapter with the big picture and reference back to it as I build in more detail.</li> <li>• “Honors was too activity-heavy:” I will keep these views in mind but know that some students may prefer a more standard lecture environment, especially successful students.</li> </ul> <p>Thoughtful self-appraisal: My SITES evaluations have been consistently high; however, there is likely some inflation due to my large number of lab sections. Students tend to be satisfied with their lab grades (often very high) and the experience overall. I believe this makes higher SITES scores more probable, independent of style or curriculum. I am confident that as labs are open to more inquiry, and students are not “spoon-fed” answers, that my scores will likely decrease on some items. As an example, there is already some fluctuation (insignificant) in my BIOL121 scores, which I believe is related to increased rigor and inquiry. For these reasons I will consistently supplement my SITES evaluations with other student appraisal and survey responses and look for meaningful trends to highlight directional changes as revisions are implemented.</p>
---------	---

**Table 3.1 Teaching – Diversification: New Methods.** Outcomes and examples in pursuit of objective 3: to identify needs and implement new practices ([return to cover letter](#)).

Diversification (continued)	<p>Universal Changes to BIOL 121 and BIOL 123 in F17-F18</p> <ul style="list-style-type: none"> <li>• Created standardized content (e.g., PowerPoints, pre-labs, assignments, and assessments) and pre-loaded the course package into each section of BIOL 121 and BIOL 123.</li> <li>• Devised new assessment strategies including on-line quizzes, to save class time, for additional explorations through an inquiry-based approach, and TA grading time.</li> <li>• Developed <a href="#">exit slips</a>, for each course, to ensure students knew the key concepts behind each lab activity. TAs use the answers to facilitate discussions and reviews.</li> <li>• Implemented new set-up strategies; supplies are now portioned to each station instead of shared, decreasing student wait time, contamination, mislabeling, and overall lab length.</li> <li>• Enhanced student access to knowledge: Created new <a href="#">supplemental content</a> sections on blackboard for BIOL 121 and BIOL 123 which curate previously available online content and original content specific to student needs.</li> </ul> <p>BIOL 120 Biological Concepts - Cells, Metabolism, and Genetics</p> <ul style="list-style-type: none"> <li>• F17-S18: Class observation- Identified the need to increase attendance and engagement.</li> <li>• F18: Introduced Acadly® a free cell phone app that uses Bluetooth for attendance and provides a lecture back channel where students post questions and submit in-class work.</li> <li>• F18: Implemented 15 new in-class micro-activities in BIOL 120. These “study starters” help students understand how topics are related, collect relevant information across topics, and deepen their understanding of complex concepts (<a href="#">examples</a>). Students find these activities helpful (<a href="#">Figure 12</a>).</li> <li>• F18: Introduced student polling app called MentiMeter® to ask content-based questions throughout each lecture (<a href="#">examples</a>) to increase engagement and ascertain student understanding before and after covering new content. I also received positive comments about MentiMeter® (<a href="#">Figure 12</a>).</li> <li>• F18: Introduced the FlashLITE® App. Students hold up their phones, screens forward, and tell me how they felt about the content: good (green), ok (yellow), not-so-great (red). I can quickly gauge understanding, students can let me know their status privately.</li> <li>• S19: Revised in-class assignments and app-usage based on student feedback.</li> <li>• S20: Pilot tested Learning Assistants (LAs), to make the large class feel smaller. I divided 120 students into 13 groups of 10-15 for our in-class assignments and out-of-class study sessions. Each student group was led by an experienced upperclassman serving as an LA or “<a href="#">BioCoach</a>.” The LAs were enrolled in my newly created Biol 369 course so they received credit for their efforts as 120 BioCoaches. (*interrupted by COVID-19)</li> </ul> <p>BIOL 121 Biological Concepts Lab - Cells, Metabolism, and Genetics</p> <ul style="list-style-type: none"> <li>• F18: Revised the current paper manual to allow for increased inquiry (<a href="#">view paper manual</a>).</li> <li>• S19: Began creation of a new on-line curriculum for BIOL 121. The new e-text was created on the Weebly website platform: <a href="http://www.121cellmetagen.com">www.121cellmetagen.com</a>.</li> <li>• The second half of the new curriculum was piloted in one section during S19.</li> <li>• S19: Integrated MediaSite® video-demos into the new e-text, intended to better students’ understanding before lab begins and give them a resource to go to if they have questions.</li> <li>• F19: The entire curriculum was piloted in one section of BIOL 121.</li> <li>• F19: Developed a new YouTube channel for video demos embedded in the new manual.</li> <li>• F19: A new <a href="#">set-up guide</a> was developed to follow the new lab curriculum.</li> <li>• S20: Created <a href="#">a new content map</a> with lab and lecture connections for all BIOL 120 faculty.</li> <li>• S20: The new curriculum was rolled out, in its entirety, in every section of BIOL 121 (*interrupted by COVID-19)</li> </ul>
-----------------------------	---

**Table 3.2 Teaching – Diversification (cont.): New Content/Procedures & Acquisitions.** Outcomes and examples in pursuit of objective 3: to identify needs and implement new practices ([return to cover letter](#)).

Diversification (continued)	<p>Development of new lecture content</p> <ul style="list-style-type: none"> <li>• F19: Implemented “<a href="#">Teaching to Learn</a>” in BIOL 120H, where students create lectures and activities for the class to cover small amounts of content. Over the course of three classes my students covered 1.5 chapters of content.</li> <li>• F19: Introduced a PBL (problem-based learning) project where students were asked to identify a local, national, or global “problem” that was connected to our BIOL 120 content and could be addressed through scientific exploration. Students created scientific posters detailing their research, which were printed (with funds from my <a href="#">Mahurin Honors Faculty Engagement Grant</a>) and presented in a mini poster session (<a href="#">Figure 13</a>).</li> <li>• S20: Together with Dr. Kerrie McDaniel, we developed a <a href="#">module on metacognition</a> to be presented in large lectures, following the first exam, to help students better understand the difference between “studying” and “learning.” Most BIOL120 <a href="#">students said</a> they would try the new study strategies following the presentation. (*interrupted by COVID-19)</li> </ul> <p>Development of a new course: BIOL 369: Cooperative Education in Biology, LA Co-op</p> <ul style="list-style-type: none"> <li>• S20: In order for the new Learning Assistants (LAs) in BIOL 120 to receive credit, I created a new companion course in which the LAs had to enroll.</li> <li>• Expectations included leading their small groups in 8-10 classes of BIOL 120, setting up review sessions before exams, evaluation of in-class assignments, bi-weekly 369 meetings, reflections on perceived impact on Biol 120 students and on themselves (<a href="#">view guidebook</a>). (*interrupted by COVID-19)</li> <li>• LAs reported this was a valuable experience for them and that they felt it would also be valuable to the 120 students in the future (<a href="#">Figure 14</a> and <a href="#">Figure 15</a>).</li> </ul> <p>Development of new laboratory procedures</p> <ul style="list-style-type: none"> <li>• F18: I wrote a new lab for BIOL 123 to introduce a <a href="#">timeline of earth’s natural history</a> and the metric system. It includes the evolution of all taxa covered in 123 and helps students visualize the temporal scale of evolution, and get comfortable working together.</li> <li>• F18: I re-wrote the <a href="#">Animal Behavior Lab</a> in BIOL 123 to reorganize the presentation of the chi-square statistic. I changed the class assignment from an individually written scientific paper to a group-produced scientific poster. The new assignment still exposes students to scientific writing but is better aligned to the research conducted in lab.</li> <li>• F18: I revised the current paper manual to allow for increased inquiry with assistance from Ms. Katie Laslie (former TA) and Mr. Mark Clausen. The order of activities was changed to best match lecture; duplicative content was removed; reoccurring techniques were grouped in appendices; student response items (e.g., data tables and questions) were moved to end of each lab to make for easy review; Blackboard icons were added throughout where relevant supplemental content was available online; color images were added in labs where colorimetry was involved, and; the format was made more professional. Served as the jumping off point for new online manual.</li> <li>• S18-F19: I created a new curriculum for BIOL 121, with <a href="#">new objectives</a> and <a href="#">student learning outcomes</a>, in an online <a href="#">e-text</a> (screenshots in <a href="#">Figure 16</a>) which is preferred by students vs. the paper manual (<a href="#">Figure 17</a>). Content selection was based on <a href="#">focus groups</a> and individual meetings with BIOL 120 engaged faculty, and the need to move toward an inquiry-based approach. Students were positive following the S18 pilot. The labs follow a similar order to remain consistent with lecture topics (<a href="#">review comparison table</a>) but are grouped in three units (Cells, Metabolism and Genetics) each of which explores a primary related question (<a href="#">view unit summaries</a>).</li> </ul>
-----------------------------	--



**Table 3.3 Teaching – Diversification (cont.): New Content/Procedures & Acquisitions.** Outcomes and examples in pursuit of objective 3: to identify needs and implement new practices ([return to cover letter](#)).

Diversification (continued)	<p>Acquisition of new instructional equipment, capabilities, or technology</p> <ul style="list-style-type: none"> <li>• I utilized new cell phone apps in BIOL 120 including Acadly® for attendance, in-class assignment submission and lecture back-channel, MentiMeter® for real-time classroom response and FlashLITE® for quick assessments of student understanding.</li> <li>• I ordered new electrophoresis supplies, agarose gel practice kits, digital balances, and centromere models for BIOL 121 and introduced pillbug colonies in BIOL 123</li> <li>• I created a new online <a href="#">e-text</a> to serve as the manual for BIOL 121. The manual includes 10 labs, each with pre-lab and post-lab content and submission capabilities.</li> <li>• Obtained easy-to-use glucose monitors to identify carbohydrate content of unknown food samples in the Diabetes Unit of the new 121 curriculum.</li> <li>• Conducted a literature review to identify student-friendly protocols to extract, synthesize and sequence DNA in BIOL 121. Naomi Rowland developed protocol in the biotech center and we organized ordering for this new content (*interrupted by COVID-19).</li> <li>• Created a new (private) YouTube channel to house lecture content and lab demonstrations (<a href="#">view example demo video</a>)</li> <li>• A new <a href="#">set-up guide</a> was developed to follow the new lab curriculum.</li> </ul> <p>Modifications Required by COVID-19: <a href="#">Plan and new syllabus</a> for each course (student comments)</p> <p>BIOL 120</p> <ul style="list-style-type: none"> <li>• All remaining lectures (8 chapters) recorded on MediaSite, uploaded to our YouTube channel, and made available as podcasts. PowerPoints made available on Blackboard.</li> <li>• Instead of 3 remaining exams, we had 8 new, weekly assessments to decrease cheating incentives and maximize retention. Assessments were online via Blackboard.</li> <li>• 10 new assignments were created to replace the remaining participation points and in-class assignments: A new Covid/Syllabus Survey, Tell Me What I Need to Know About You Now, Bio @ Home: Get out of your house, The Biochemistry of Kindness, 5 LabBench Assignments in Mastering, and a short essay on students' perceptions of COVID-19</li> <li>• Two, weekly zoom-recitation sessions one during class time and one during the evening.</li> <li>• Students felt I provided them the best possible course experience during COVID (review COVID related <a href="#">student comments</a>)</li> </ul> <p>BIOL 121 &amp; 123</p> <ul style="list-style-type: none"> <li>• BIOL 121: New pages were added to the 121 e-text to deliver the new online-only curriculum. Examples: <a href="#">Photosynthesis</a> &amp; <a href="#">PCR</a></li> <li>• BIOL 123: No online content existed for BIOL 123 aside from Blackboard assignments, assessments and supplemental content, so a BIOL 123 <a href="#">online manual</a> was created.</li> <li>• 12 labs (6 from 121 and 6 from 123) were replaced with new virtual or at-home labs, and data (like what would have been collected in lab) were provided so analysis could continue. Students submitted their data and/or analyses in post-labs which also included content questions and places for the students to paste selfies of them completing the lab activities (<a href="#">Figure 18</a> and <a href="#">Figure 19</a>).</li> <li>• New Post-Labs were also written for each along with new online-only final exams.</li> <li>• TAs conducted zoom meetings with the class and/or individuals as needed.</li> </ul> <p>BIOL 369: LAs continued to touch base with their groups through email, texting and zoom. To replace their "in-class" responsibilities, LAs developed two new in-class assignments they thought would be good additions and conducted a literature review on the use of learning assistants in large lectures.</p>
-----------------------------	--

**Table 4. Teaching – Professional Development.** Outcomes and examples in pursuit of objective 4: to seek out and participate in professional development relevant to my position ([return to cover letter](#)).

Professional Development	<ul style="list-style-type: none"> <li>• Integrative student and course data, Pilot Program Planning, Pearson, July, 2020.</li> <li>• Online Assessment Panel, Grading During A Pandemic, CITL, May 4, 2020.</li> <li>• Integrative student and course data, Pilot Program Training, Pearson, February 19, 2020.</li> <li>• Association of American Colleges &amp; Universities, Transforming STEM Higher Education conference, Chicago, IL, November 7-9, 2019. (<a href="#">WKU News Article</a>)</li> <li>• Mastery Training with Pearson, teleconference, July 29, 2019.</li> <li>• Association of American Colleges &amp; Universities, Institute on General Education and Assessment, University of Vermont, June 2019</li> <li>• Five Year Scholarly/Creative Plan Workshop, Potter and Ogden Colleges, WKU, May 29, 2019. [Day 2 only].</li> <li>• Problem-based Learning Professional Learning Community, CITL, Feb.- March 2019.</li> <li>• Pearson's Biology Leadership Community Summit, Las Vegas, NV, March 8-10, 2019.</li> <li>• HIPs (High Impact Practices) in the States Conference, WKU, February 20-22, 2019.</li> <li>• Course development planning in Kenya, with an <a href="#">International Activities Grant</a> from the Office of International Programs, November 2018.</li> <li>• Mastery Training with Pearson, teleconference, July 24, 2018.</li> <li>• The Teaching Professor Conference in Atlanta, GA, July 1-3, 2018.</li> <li>• Kentucky Pedagogicon at Eastern Kentucky University, May 19, 2018</li> <li>• Blackboard - 10 Things You Didn't Know @ WKU, February 22, 2018.</li> <li>• 5th Week Assessment @ WKU, February 16, 2018.</li> <li>• Using Micro Activates Workshop @ WKU, January 4, 2018.</li> <li>• iClicker® Training, Steven Kirtley, Instructional Technologist, CITL, Sept.17, 2017.</li> <li>• IT Blackboard Training, On-line @ WKU, September 2017.</li> <li>• <a href="#">Service Learning</a> Professional Learning Community, CITL, Sept.- Oct. 2017</li> </ul>
--------------------------	---

**Table 5. Teaching – Tutelage.** Outcomes and examples in pursuit of objective 5: to support and advise student teaching assistants and biology students ([return to cover letter](#)).

Tutelage	<p>Developing and advising student teaching assistants</p> <ul style="list-style-type: none"> <li>• I coordinate weekly lab meetings for BIOL 121 and BIOL 123 where we discuss issues and trouble-shoot the previous lab, look ahead to the next lab, practice with equipment and demos as necessary, and discuss grading or classroom culture issues.</li> <li>• Time: approximately 1 hour each week for each course.</li> <li>• TA Supervision: 32 Total (review <a href="#">course statistics, including</a> TA assignments) <ul style="list-style-type: none"> <li>○ 17-18: 8 TAs (4 for BIOL 121 and 2 for BIOL 123)</li> <li>○ 18-19: 12 TAs (includes 2 faculty) (6 for BIOL 121 and 4 for BIOL 123 + 2)</li> <li>○ 19-20: 12 TAs (7 for BIOL 121 and 5 for BIOL 123)</li> </ul> </li> <li>• Created <a href="#">pre- and post-course checklists</a>, a <a href="#">Best Practices Protocol</a> and <a href="#">Blackboard tutorials</a>.</li> <li>• Created a <a href="#">BIOL 121 Teaching Manual</a> with prompts and trouble-shooting for TAs. <ul style="list-style-type: none"> <li>○ Revised heavily following the first round of paper manual revisions</li> <li>○ This manual will be revised further to match the new BIOL 121 e-text and curriculum once full implementation across all sections can be reviewed.</li> </ul> </li> <li>• Managed, reorganized and supplemented the BIOL 121 and BIOL 123 Blackboard Organizations for TAs, which now house course content, TA documents, and assessments.</li> <li>• Each fall I conduct a TA Workshop with Dr. Steve Huskey (<a href="#">workshop materials</a>)</li> <li>• I am confident I have created a course in BIOL 121 that can be facilitated by our GTAs. As the new curriculum is rolled out across sections (hopefully by S21) I will rely on their input to create a new “Best Practices Manual” and TA guidebook to inquiry-based learning that can also be used by BIOL 123 TAs in the future.</li> <li>• Letters of support from Graduate Teaching Assistants: <a href="#">Wesley Payette</a>, <a href="#">Samantha Thomas</a>, and <a href="#">Olivia Greaner</a> (121 TAs both old and new curriculum), and <a href="#">Lauren McCaslin</a> (123 TA)</li> </ul> <p>Student Advising</p> <ul style="list-style-type: none"> <li>• Master of Arts in Teaching (0495): Review all applications with BIOL-focus.</li> <li>• Biology for Teacher Leaders, Master of Arts in Education (0442) <ul style="list-style-type: none"> <li>○ Advised 5 graduate students (most lasted just 1 semester)</li> <li>○ Created and managed a new BIOL MAE Blackboard organization.</li> <li>○ Worked with WKU Marketing to improve the webpage.</li> <li>○ Worked to close the program and complete “Teach-Out” plan due to CAPE.</li> </ul> </li> <li>• Graduate Students: Letter of support from graduate students regarding my help with their theses/research projects (unofficial): <a href="#">Brigit Rooney</a> and <a href="#">Lauren McCaslin</a> <ul style="list-style-type: none"> <li>○ Currently serving on one graduate student committee: Sophia Corde</li> </ul> </li> <li>• Undergraduates: Advised 78 for registration since S18 (<a href="#">View Table</a>) <ul style="list-style-type: none"> <li>○ Created a “<a href="#">Mountjoy Advising Organization</a>,” which houses many necessary documents for various tracks in Biology</li> <li>○ Serve on 1 pre-professional committee</li> <li>○ Met with Dr. Crawford and Dr. Pesterfield to improve professional advising.</li> <li>○ Consulted with Dr. Wyatt regarding pre-professional advising.</li> <li>○ Letters of support from advisee: <a href="#">Elizabeth Lyons</a></li> </ul> </li> <li>• In Research <ul style="list-style-type: none"> <li>○ Exploring opportunities, with Dr. Doug McElroy, to partner our undergrads with research opportunities through the Medical Center and the wider medical community in Bowling Green (<a href="#">letter of support from Dr. Annirudha Singh</a>)</li> </ul> </li> </ul>
----------	---

**Table 6. Teaching – Baseline Data Collection & Scholarly Activity<sup>15</sup>.** Outcomes and examples in pursuit of objective 6: to collect baseline data from faculty, teaching assistants (TAs) and undergraduates regarding their performance, perspectives, and experiences ([return to cover letter](#)).

Baseline Data Collection & Scholarly Activity	<p>Student Learning &amp; Perspectives</p> <ul style="list-style-type: none"> <li>• Collated grades across all sections in BIOL 121 and BIOL 123 for comparisons post-implementation of course changes.</li> <li>• Analyzed student SITE evaluations including comments (<a href="#">Table 1</a>).</li> <li>• Conducted “Student Opinion Surveys” regularly in BIOL 120, 121 and 123 to explore student perceptions of new technology, teaching methods and content (<a href="#">Table 2</a>).</li> <li>• Biology Student Concerns During Online-Only Instruction (<a href="#">survey development &amp; analysis</a>) (implemented due to COVID-19 in S20)</li> </ul> <p>TA Perspectives</p> <ul style="list-style-type: none"> <li>• Collected and recorded perspectives on each lab and assessments during weekly meetings.</li> <li>• Conducted an “Allocated Time Survey” with TAs, recorded time spent on various activities in (lecturing, doming, etc.) and out of the classroom (prep, grading, etc.) for comparison as changes are implemented.</li> <li>• TA perspectives are also catalogued in letters (<a href="#">Table 5</a>).</li> </ul> <p>Faculty Perspectives</p> <ul style="list-style-type: none"> <li>• Conducted a focus group with faculty involved in BIOL 120 and 121 to ascertain the most and least important content covered in BIOL 120 and the primary goal of the BIOL 121 lab experience (e.g., to supplement lecture, to learn lab techniques, etc.).</li> <li>• Initiated one-on-one meetings with several BIOL 120-engaged faculty (i.e., Dr. Sirvastitva, Dr. Rice, Dr. Wyatt, Dr. Smith and Dr. Rinehart) to discusses plans for BIOL 121 including the new e-text format and new content and curricular changes.</li> <li>• Biology Faculty Concerns During Online-Only Instruction (<a href="#">survey development &amp; analysis</a>) (implemented due to COVID-19 in S20).</li> <li>• Planning for eventual increases in standardization across BIOL 120 and to begin a needs assessment with BIOL 122 faculty in the coming year.</li> </ul> <p>Scholarly Activity Regarding Retention (Full descriptions and status updates are <a href="#">available here</a>)</p> <ul style="list-style-type: none"> <li>• Why they stay: Analyzing the persistence of at-risk students in the Ogden College of Science and Engineering to identify successful retention initiatives and programs (PI, with the Ogden Retention Taskforce, IRB-approved – Surveyed at-risk students to ascertain what key issues they were facing and what WKU programs they found helpful. The first year of data collection was implemented in F18-S19 (<a href="#">Advisory Board Data Presentation</a>) (on hold due to COVID-19).</li> <li>• Evaluating Advising Practices Across Ogden College: A Needs Assessment (Co-PI, with the Ogden Retention Taskforce, IRB-approved – Planned to issue pilot survey in S20. (on hold due to COVID-19).</li> </ul>
---	---

<sup>15</sup> The university does not require pedagogical faculty to engage in scholarly research. However, scholarship in its broadest sense refers to learning and to building a body of knowledge. The Department of Biology values all relevant scholarly activities; therefore, a pedagogical faculty member is encouraged to contribute to the understanding and practice of teaching, and to disseminate their contributions in publications, at conferences, in other presentations, etc. (See <https://www.wku.edu/policies/docs/30.pdf>).

**Table 6. Teaching – Baseline Data Collection & Scholarly Activity<sup>16</sup> (con’t).** Outcomes and examples in pursuit of objective 6: to collect baseline data from faculty, teaching assistants (TAs) and undergraduates regarding their performance, perspectives, and experiences ([return to cover letter](#)).

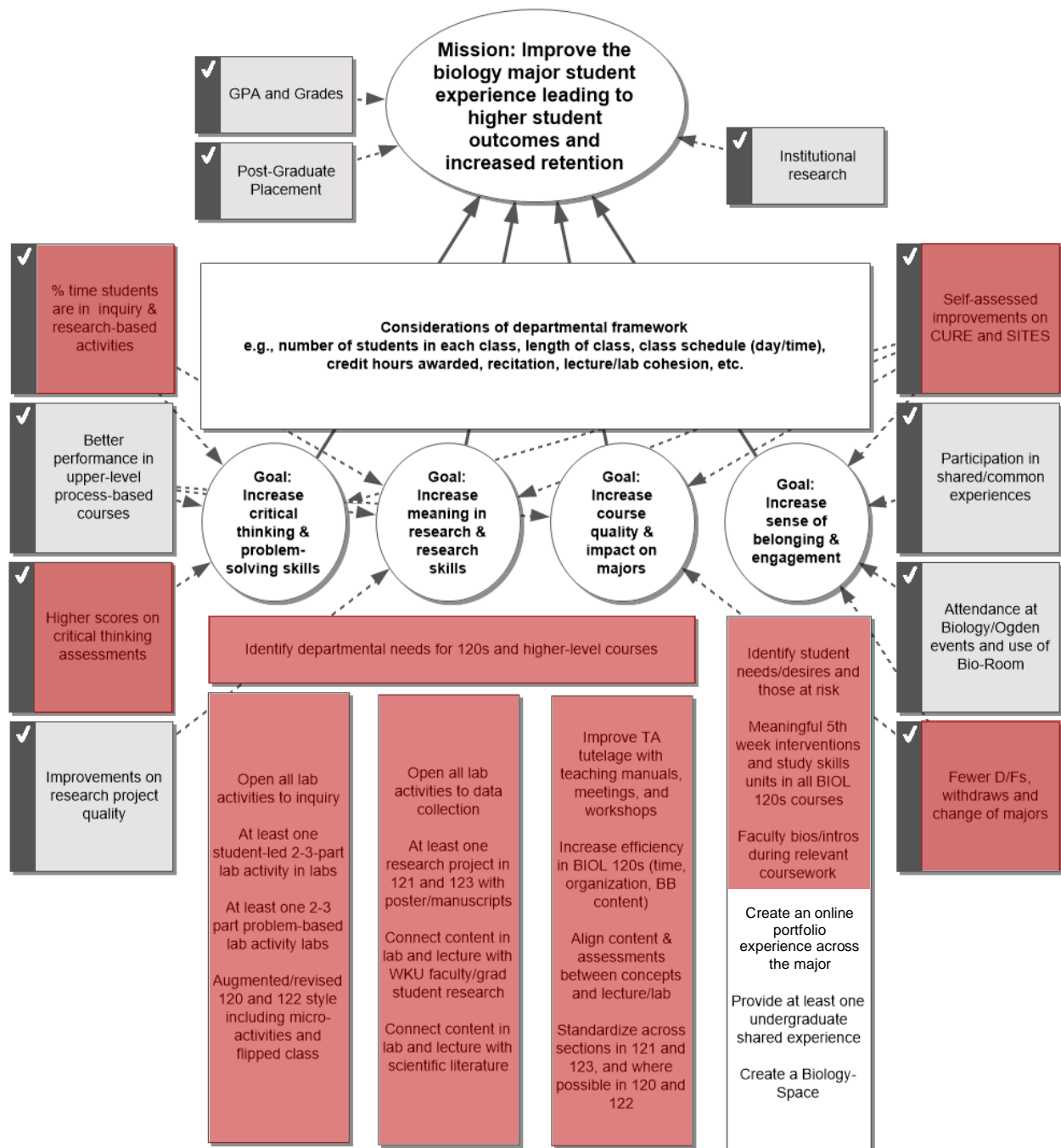
Baseline Data Collection & Scholarly Activity (continued)	<p>Scholarly Activity Regarding Pedagogical Initiatives (Full descriptions and status updates are <a href="#">available here</a>)</p> <ul style="list-style-type: none"> <li>• S18: Following up on 5<sup>th</sup> week interventions: Which type of follow-up measure (announcement, email or meeting) achieves the greatest impact on students’ final grades – Collecting 5<sup>th</sup> week and final grades for all students and coding each based on intervention types: <a href="#">Preliminary Analysis</a>. (on hold due to COVID-19).</li> <li>• Measuring the impact of increased inquiry-based techniques introduced into the biology curriculum across courses and cohorts. (with Ms. Naomi Rowland) <a href="#">Default Qualtrics Report</a>. (on hold due to COVID-19).</li> <li>• F18: Online lab manuals: Student perceptions and learning outcomes – Creating online survey to deploy in section with the paper manual and the section with on-line manual: <a href="#">Pilot Survey Results</a>. (BIOL 121 is complete, will implement in BIOL 123 after revisions)</li> <li>• F19: The effects of using HIPs in gateway courses on student success and retention. Using grade data from different types of lectures across campus. I am working with Dr. Daniel Super and Dr. Douglas McElroy on this project (proceeding).</li> <li>• S20: Learning Assistants in the General Biology Lecture Hall: How peer mentoring and small groups can transform the student experience in large lectures. <a href="#">Preliminary Analysis</a> (on hold due to COVID-19).</li> <li>• S20: Teaching students to learn: The effects of a metacognition-based intervention on student success in large lecture classrooms. I am working with Dr. Kerrie McDaniel on this project. <a href="#">Early Results</a> (on hold due to COVID-19).</li> </ul> <p>Other Projects</p> <ul style="list-style-type: none"> <li>• S20: Telehealth cardiology clinic during COVID-19: Patients’ Perspectives &amp; Satisfaction: I have joined this project as a Co-PI with Dr. Doug McElroy through the Medical Center. Manuscript in progress. (implemented due to COVID-19). <a href="#">Letter of support from Dr. Annirudha Singh</a>.</li> </ul> <p>Conference Presentations</p> <ul style="list-style-type: none"> <li>• Mountjoy, N. J. and McDaniel, Kerrie. It Takes a Department to Shift a Paradigm: Starting in the lab. AAC&amp;U’s Transforming STEM Higher Education conference, Chicago, IL, November 7-9, 2019. [invited &amp; accepted].</li> </ul> <p>Manuscripts in Progress</p> <ul style="list-style-type: none"> <li>• <b>Mountjoy, N.J.</b> Learning Assistants in the General Biology Lecture Hall: How peer mentoring and small groups can transform the student experience in large lectures and provide upperclassman with opportunities to build in-discipline knowledge, confidence, and communication skills.</li> <li>• <b>Mountjoy, N. J.</b> and Rowland, N. A story in inquiry in three labs: How the scale of inquiry and student maturity affects student learning gains.</li> <li>• Singh, A., McElroy, D., and <b>Mountjoy N. J.</b> Telehealth cardiology clinic during COVID-19: Patients’ Perspectives &amp; Satisfaction.</li> </ul>
---	--

<sup>16</sup> The university does not require pedagogical faculty to engage in scholarly research. However, scholarship in its broadest sense refers to learning and to building a body of knowledge. The Department of Biology values all relevant scholarly activities; therefore, a pedagogical faculty member is encouraged to contribute to the understanding and practice of teaching, and to disseminate their contributions in publications, at conferences, in other presentations, etc. (See <https://www.wku.edu/policies/docs/30.pdf>).

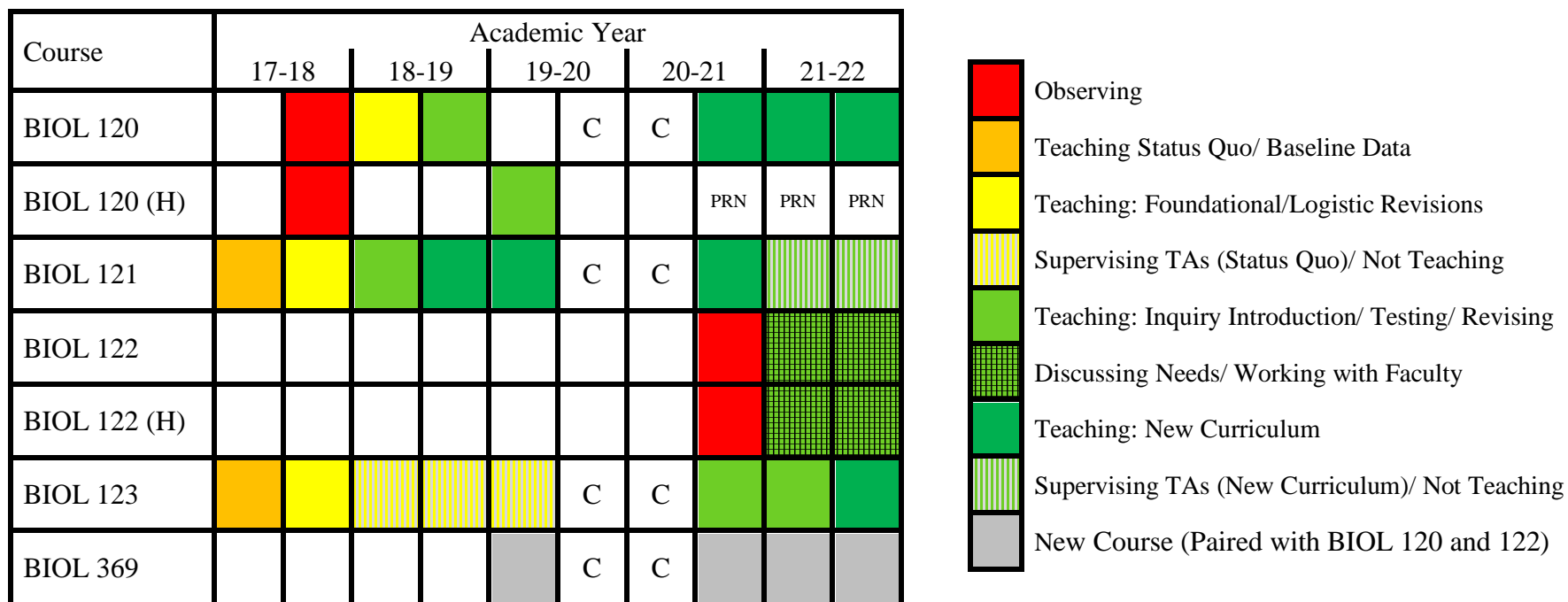


**Table 7. Service – University/Public/Professional Service.** Outcomes and examples in pursuit of objective 7: to find service opportunities that align with my pedagogical activities ([return to cover letter](#)).

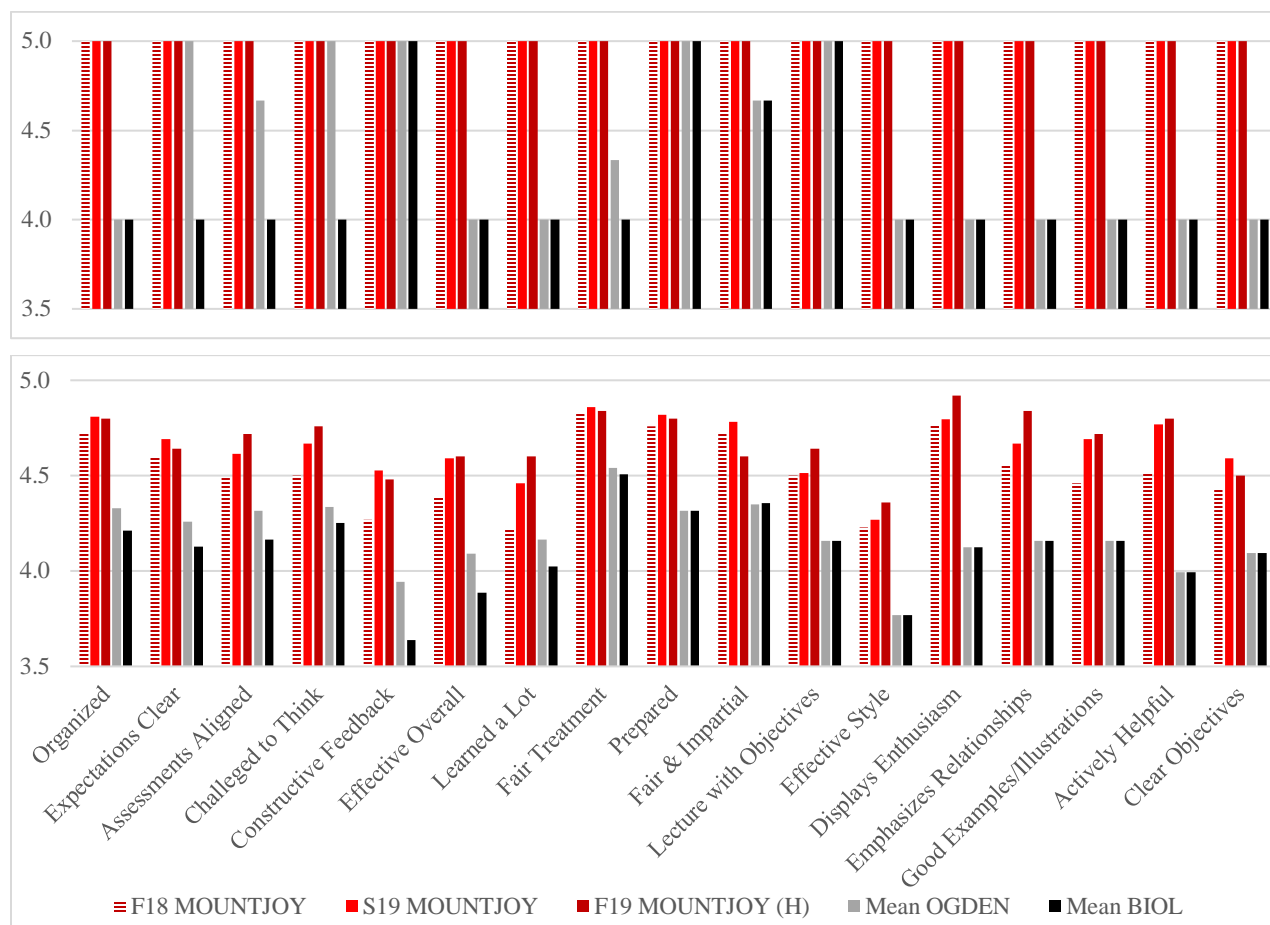
Service – University/Public/Professional Service	<p><b>WKU, Department &amp; College</b></p> <ul style="list-style-type: none"> <li>• 2017-current Ogden College Retention Taskforce, Co-chair 2019-20</li> <li>• 2017-current Department of Biology Graduate Committee</li> <li>• 2017-current MAT-Biology Admission Advisor</li> <li>• 2017-current Department of Biology Retention Committee, Chair 2019-20</li> <li>• 2019-current Department of Biology Advising Committee Member</li> <li>• 2020 CITL Faculty Development Webinar Speaker: Adjustments for Online (invited, TBD)</li> <li>• 2020 <a href="#">CITL YouTube Panelist</a> and Q&amp;A: Assessment during COVID-19 (invited)</li> <li>• 2020 Biology Student &amp; Faculty Concerns During Online-Only Instruction (<a href="#">survey development &amp; analysis</a>)</li> <li>• 2020 Search Committee: Biomedical Faculty, Biology Department</li> <li>• 2020 Search Committee: Department Chair, Biology Department</li> <li>• 2020 Ogden Preview Day</li> <li>• 2020 WKU <a href="#">HerStory Recruiting Event</a></li> <li>• 2017-2019 Program Director and Advisor: MAE in Biology</li> <li>• 2017-2019 Gatton Academy Interview Day</li> <li>• 2017-2019 Gatton Academy Research Fair</li> <li>• 2019 Ogden College Advisory Board Presentation</li> <li>• 2019 WKU Colonnade General Education Curriculum Taskforce</li> <li>• 2019 Biology Clubs and Faculty Meet &amp; Greet</li> <li>• 2018 Ogden Preview Day</li> <li>• 2018 Science Olympiad</li> </ul> <p><b>Professional</b></p> <ul style="list-style-type: none"> <li>• Referee/reviewer of manuscripts Conservation Biology, Case-Studies in the Environment (Pedagogical Journal), Environmental Management, Journal of Environmental Planning &amp; Management, Ecological Economics, Human Dimensions of Wildlife</li> <li>• Memberships in Professional Societies: Association of American Colleges &amp; Universities Associate, National Science Teachers Association, Society for Human Ecology and Society for Conservation Biology</li> <li>• Serving as science advisor to WKHL and the Medical Center on three research projects centered on assessing telemedicine and psychosocial health during COVID-19.</li> </ul> <p><b>Public Service</b></p> <ul style="list-style-type: none"> <li>• Service to regional non-profit: Western Kentucky Botanical Garden, Board of Directors <ul style="list-style-type: none"> <li>◦ <a href="#">Website</a> design and maintenance</li> <li>◦ Science advisory</li> </ul> </li> </ul> <p><b>WKU Mission:</b> <i>WKU prepares students of all backgrounds to be productive, engaged, and socially responsible citizen-leaders of a global society. The University provides research, service and lifelong learning opportunities for its students, faculty, and other constituents.</i></p> <ul style="list-style-type: none"> <li>• I work to meet my students where they are, regardless of their backgrounds.</li> <li>• I believe science affords all of us, students included, the best means to become productive citizens and I regularly highlight that responsibility in my classes.</li> <li>• Collaboration makes all scientist global citizens, which is reinforced in several lab activities in BIOL 121 and BIOL 123.</li> </ul>
--	--



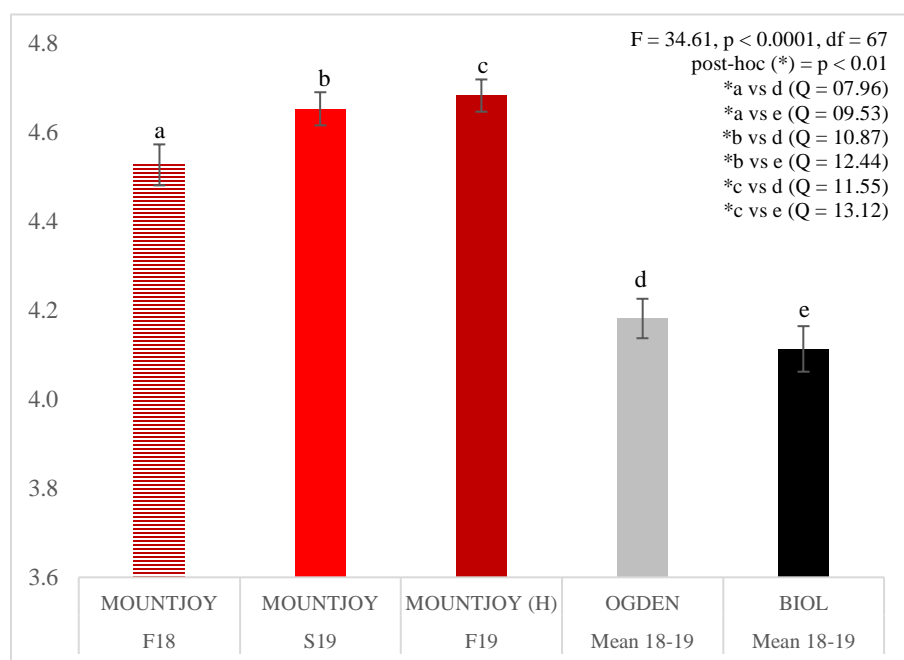
**Figure 1.** Hierarchical goal structure. Four primary goals are circled in the center with corresponding objectives below in boxes. Objectives highlighted in red represent the focus of my first three years. Check-marked boxes show measurable outcomes connected with dashed lines to their respective unit of evaluation. I am currently collecting data to measure the outcomes highlighted in red (return to cover letter)



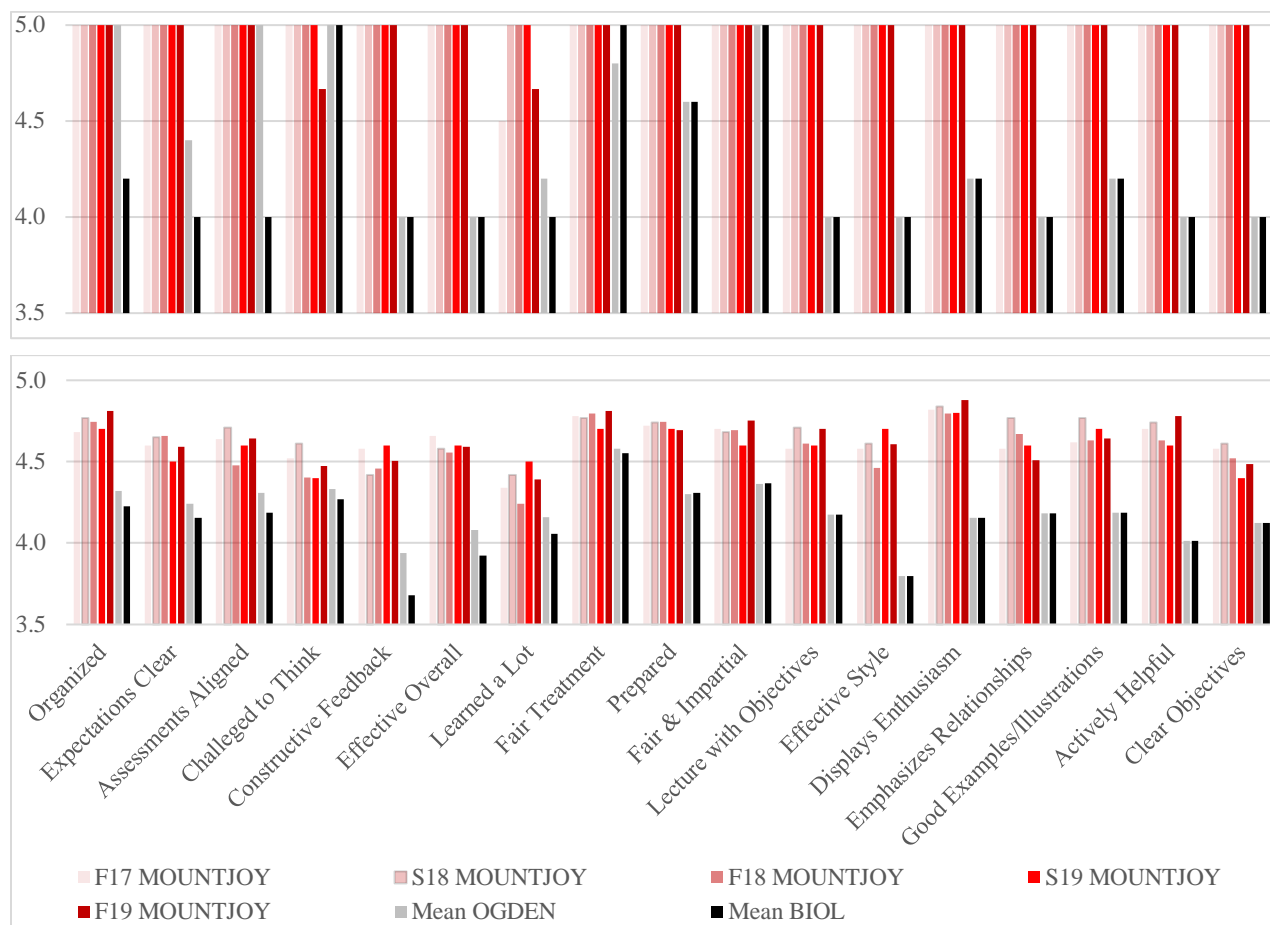
**Figure 2.** Timeline of activities regarding revision of the BIOL 120 curriculum. This revised order of teaching responsibilities will still allow BIOL 120 and BIOL 121 to be fully revised, and corresponding outcome data to be analyzed, before my application for tenure in fall 2022. Due to faculty changes, the timeline for teaching the BIOL 120 H was moved up a year. Due to interruptions (to regular revision and implementation) caused by COVID-19, and changes to the current faculty make-up of the Biology Department, it will be difficult to leave BIOL 120 and begin teaching BIOL 122 in F21 as originally planned. Instead, I will begin working with the BIOL 122 faculty on needs assessment and planning in 21-22, so progress is still achievable (return to cover letter).



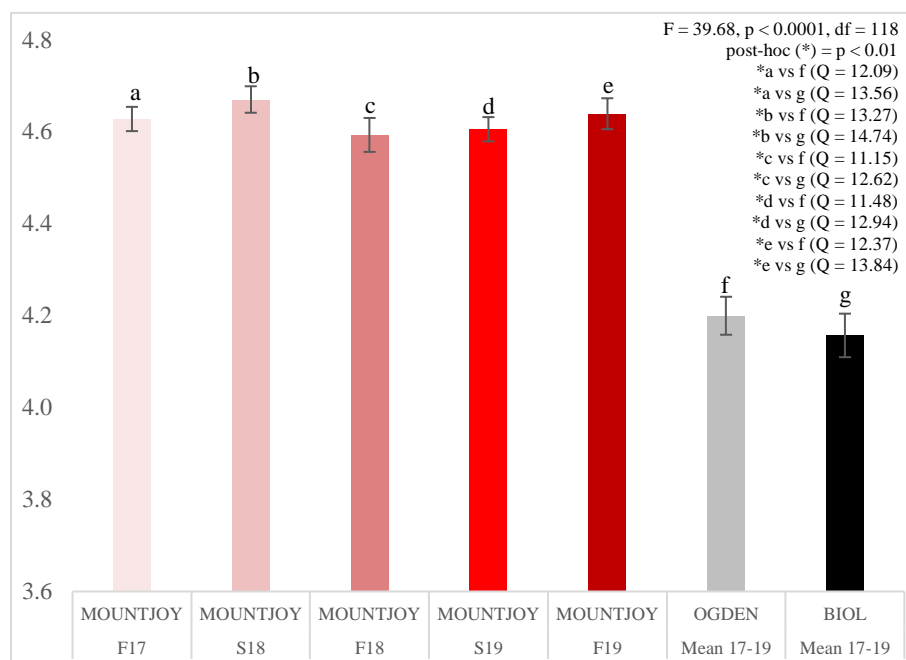
**Figure 3A.** BIOL 120 course evaluation medians (top) and means (bottom) across all questions compared with the mean Ogden and Biology Department scores over the same period (F18-F19).



**Figure 3B.** BIOL 120 overall mean scores with standard error, compared with the Biology Department and Ogden College. Analysis of variance ( $F = 37.844, p < 0.001, df = 84$ ) showed the mean for MOUNTJOY's scores to be significantly higher ( $Q = 7.96 - 13.12, p < 0.01$ ) than those for Ogden College and the Biology Department in all semesters. There was no significant difference between MOUNTJOY's scores across semesters (return to cover letter or Table 2).

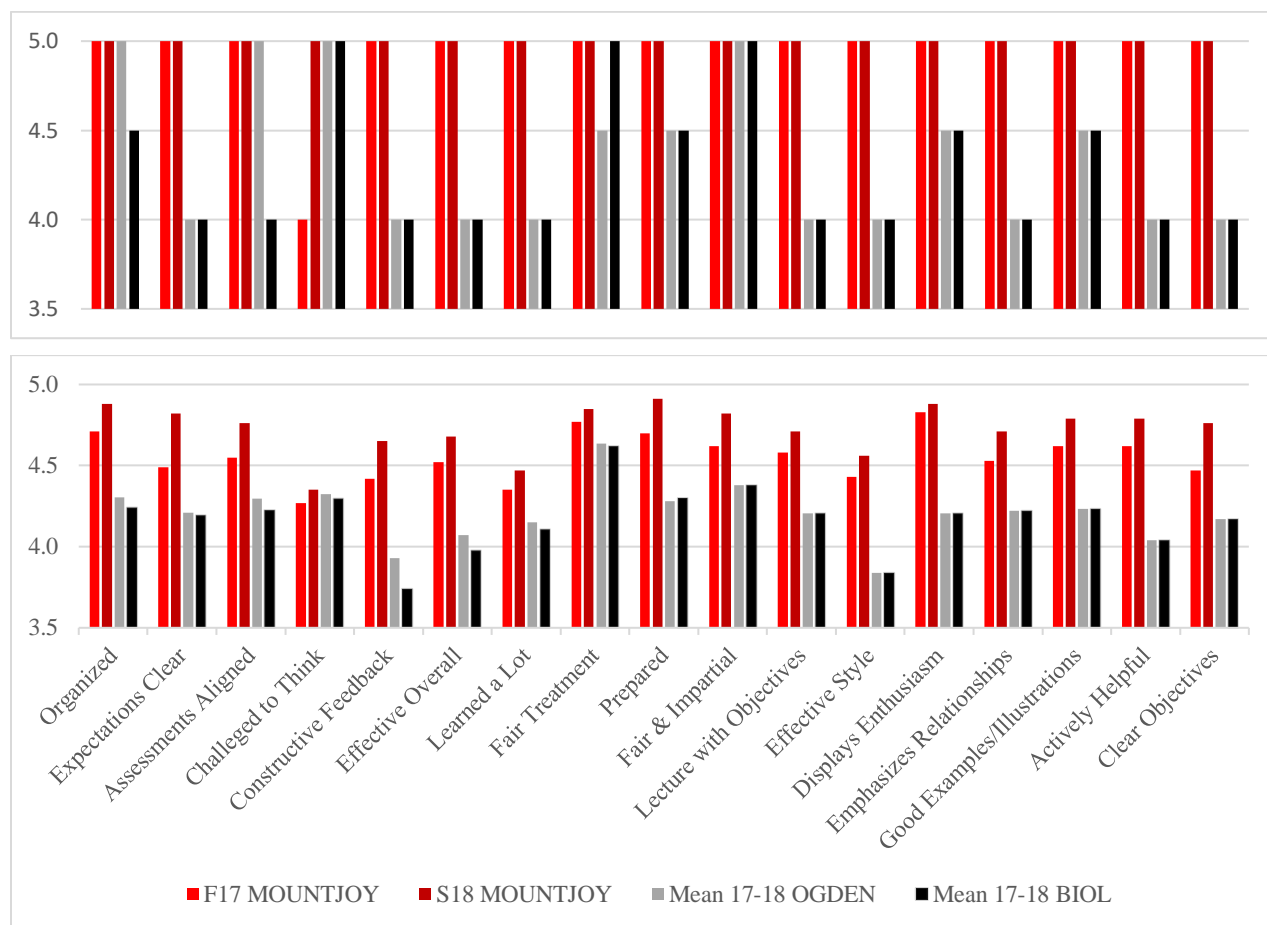


**Figure 4A.** BIOL 121 course evaluation medians (top) and means (bottom) across all questions compared with the mean Ogden and Biology Department scores over the same period (F17-F19).

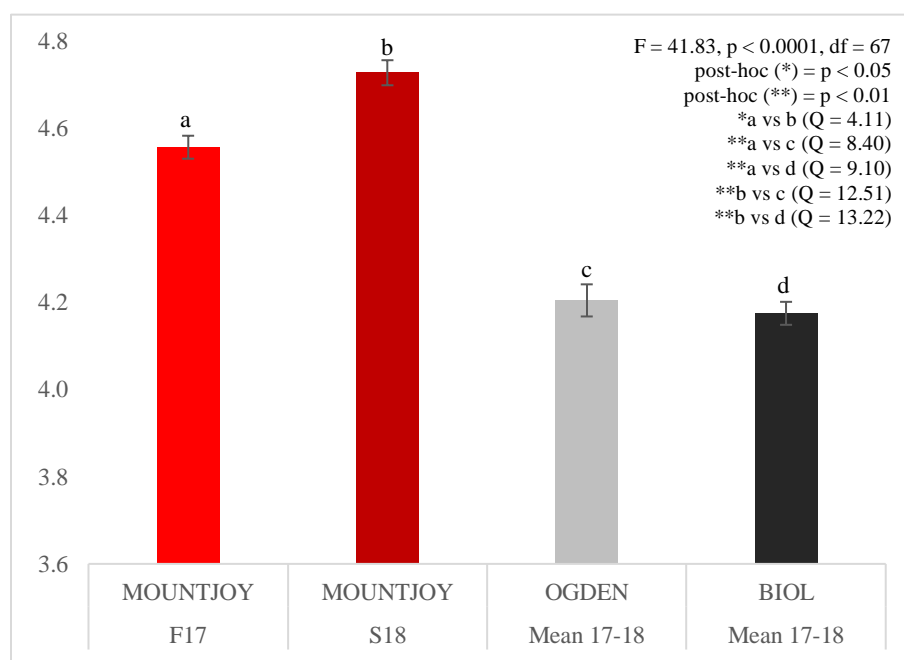


**Figure 4B.** BIOL 121 overall mean scores with standard error, compared with the Biology Department and Ogden College. Analysis of variance ( $F = 39.68, p < 0.0001, df = 118$ ) and Tukey's post hoc analysis showed the mean for MOUNTJOY's scores to be significantly higher than those for Ogden and the Biology Department and in each semester ( $Q = 11.15 - 14.74, p < 0.01$ ). There was no significant difference between MOUNTJOY's scores across semesters (return to cover letter or Table 2).

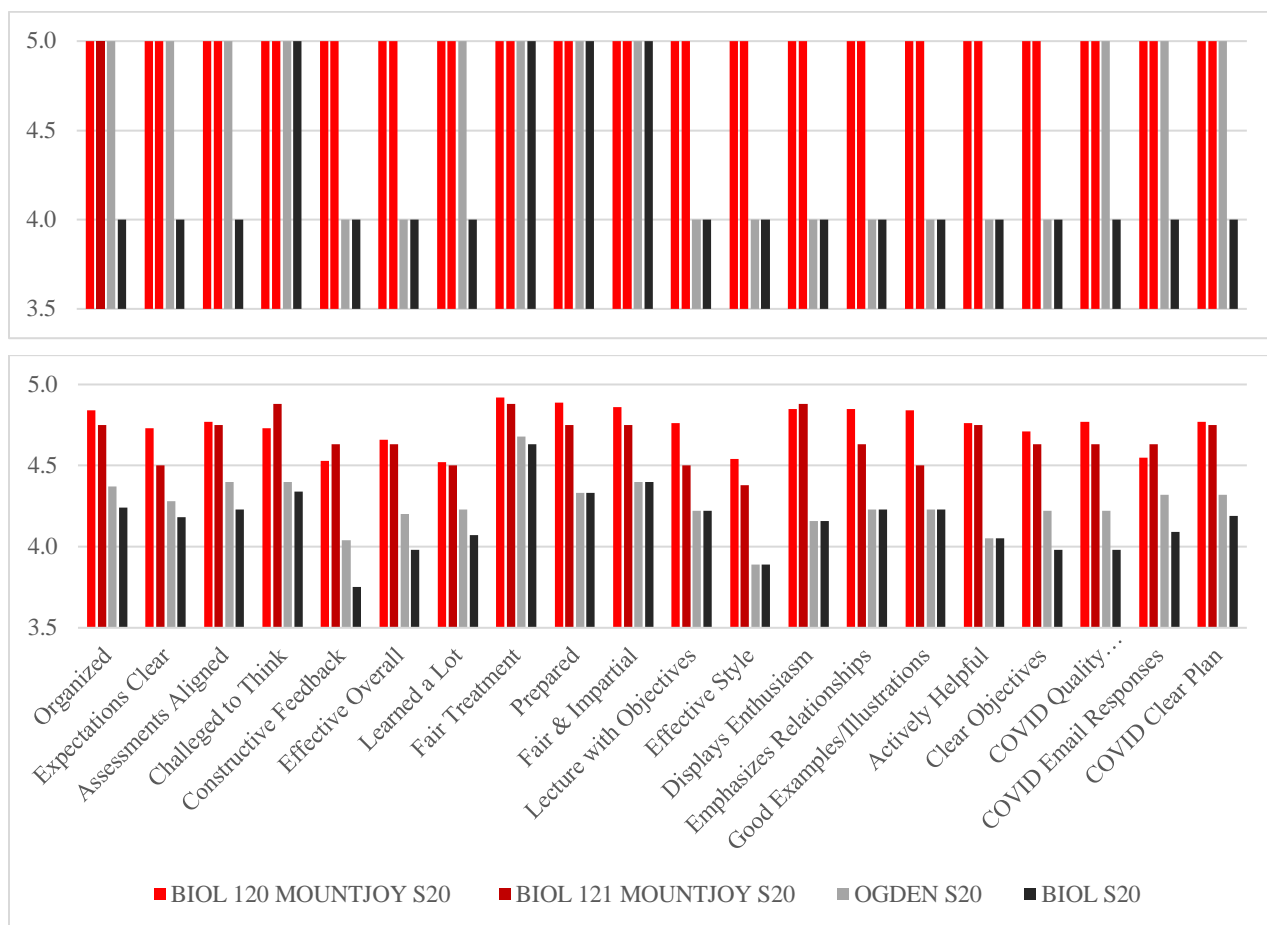




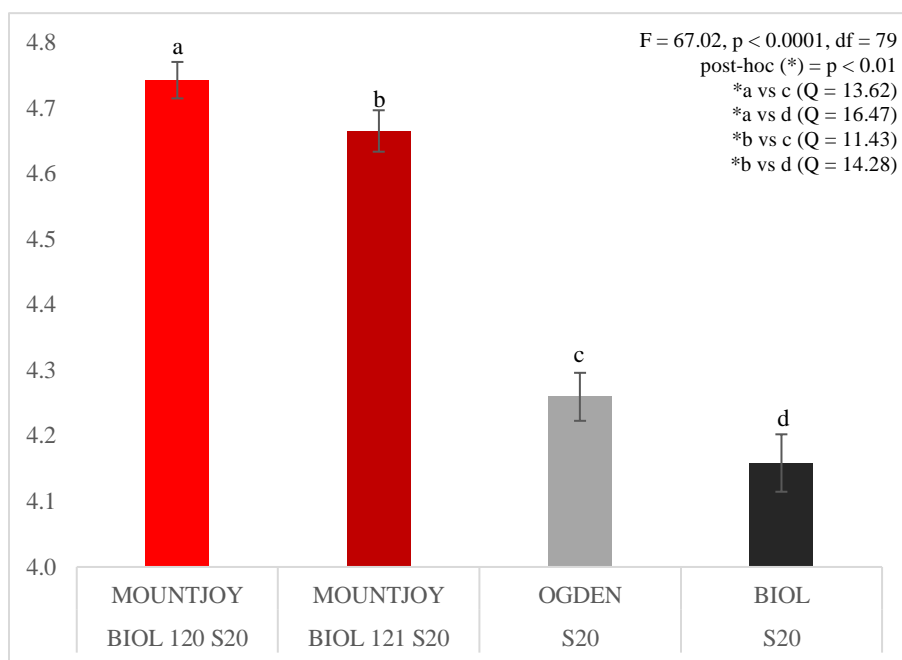
**Figure 5A.** BIOL 123 course evaluation medians (top) and means (bottom) across all questions compared with the mean Ogden and Biology Department scores over the same period (17-18).



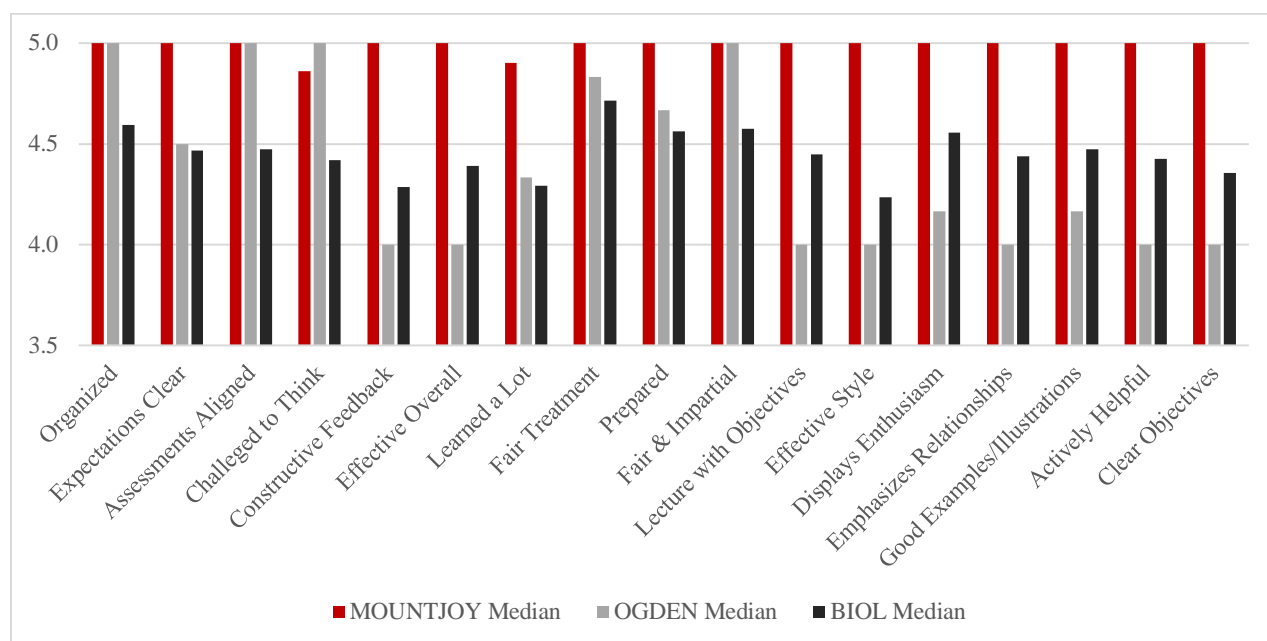
**Figure 5B.** BIOL 123 overall mean scores with standard error, compared with the Biology Department and Ogden College. Analysis of variance ( $F = 41.83, p < 0.0001, df = 67$ ) and Tukey's post hoc analysis showed the mean for MOUNTJOY's scores to be significantly higher than those for Ogden and the Biology Department and in the fall and spring. There was a significant increase in MOUNTJOY's scores between the fall and spring semesters ( $Q = 4.11, p < 0.05$ ) (return to cover letter or Table 2).



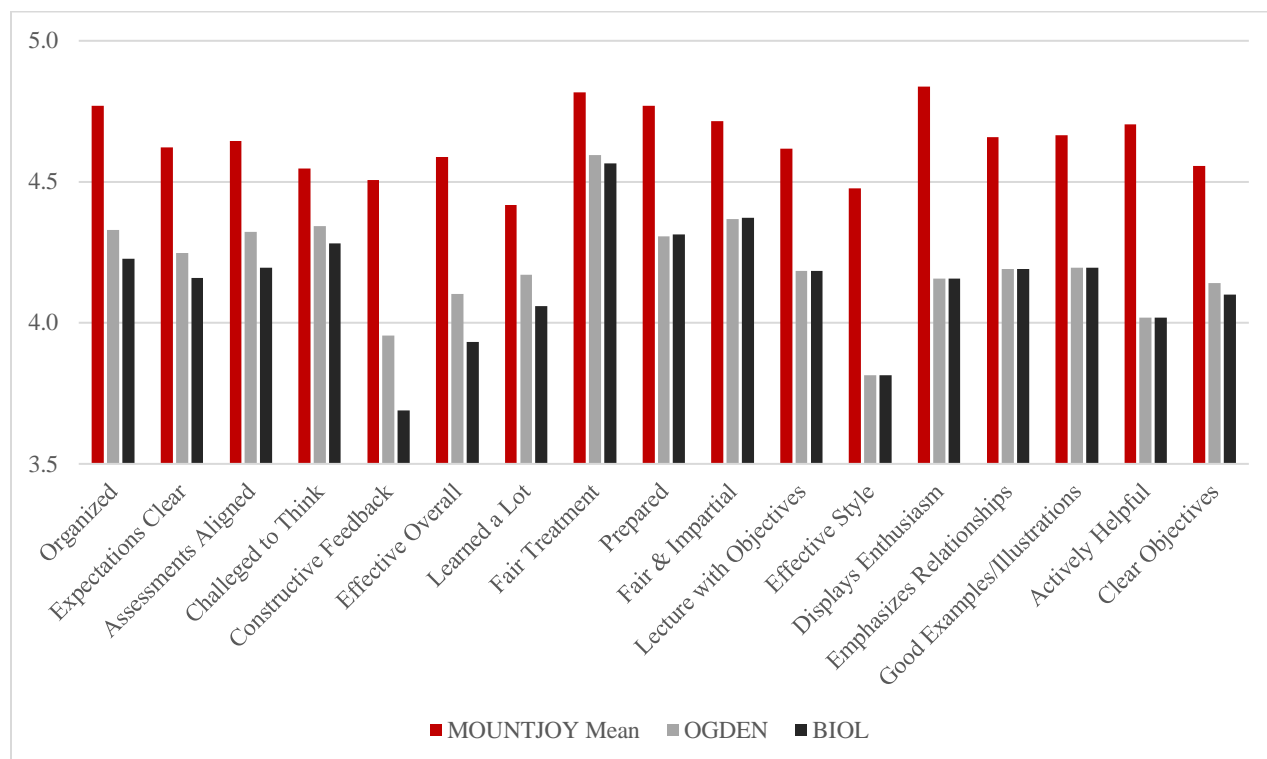
**Figure 6A.** COVID-19 (S20) course evaluation medians (top) and means (bottom) across all questions from MOUNTJOY BIOL 120 and BIOL 121, vs. the mean Ogden and Biology Department scores.



**Figure 6B.** MOUNTJOY scores during Spring 20 in BIOL 120 and BIOL 121 vs. Biology Department and Ogden College. Analysis of variance ( $F = 67.02, p < 0.0001, df = 79$ ) and Tukey's post hoc analysis showed the mean for MOUNTJOY's scores to be significantly higher than those for Ogden College and the Biology Department ( $Q = 11.43 - 16.47$ ) (return to cover letter or Table 2).



**Figure 7A.** Medians between 1 – 5 (highest) from course evaluations by question, calculated across all sections of all BIOL 120 (4), BIOL 121 (13), and BIOL 123 (7) taught by Natalie Mountjoy (i.e., MOUNTJOY) from fall 2017 through spring 2020 compared to the mean median scores across Ogden College and the Biology Department in the same semesters ([return to cover letter](#) or [Table 2](#)).



**Figure 7B.** Means between 1 – 5 (highest) from course evaluations by question, calculated across all sections of all BIOL 120 (4), BIOL 121 (13), and BIOL 123 (7) taught by Natalie Mountjoy (i.e., MOUNTJOY) from fall 2017 through spring 2020 compared to the mean scores across Ogden College and the Biology Department in the same semesters ([return to cover letter](#) or [Table 2](#)).

- Dr. Mountjoy is an awesome teacher. She makes the class not boring and extremely interesting. You can tell that she is very passionate about biology and that she cares about her students. She is clear about when the homework assignments are and is understanding when students have problems. You can easily go to her office hours and talk to her about something you don't understand or to talk about your grade.
- Dr. Mountjoy is a spectacular professor! I have never loved biology more. Her PowerPoints are effective and relay the information visually. We cover a lot of information, but her effective descriptions help me retain the information. She relays the relationships between all subjects and challenges us to use critical thinking. She is always clear in the objectives and ensures our work is purposeful. She is extremely personable and approachable. Dr. Mountjoy allows for work that is challenging, yet manageable and that always leaves me with a deep understanding. This course makes me feel prepared for future courses.
- Dr. Mountjoy is an excellent professor. She always reminds us we are able to email her or come to her office hours with questions, and gives us tips and study strategies to help us prepare for exams. While sometimes she can go through the powerpoints a bit fast, she did a survey on us and saw that we had said this and rectified it which was nice. She listens to our feedback and is always enthusiastic when teaching.
- I could not speak more highly of Dr. Mountjoy. If I could take her for every biology class ever, I would. She is not only the coolest person ever, but she teaches so effectively. I have never seen a teacher of an intro-bio level class care so much about the success of her students. The class is challenging in the fact that there is no much content, but she makes it so much better through her fun explanations and comparisons. She does everything in her power to help each and every student. She makes me want to come to class even on Friday mornings.
- This course was definitely challenging at first but Dr. Mountjoy has made it so much more tolerable than it originally was. The powerpoint slides she uses during the lectures make the content much more understandable and a great study tool. She is ALWAYS willing to help a student and answer any questions we might have. If I can take Dr. Mountjoy again, I definitely will.
- I think Professor Mountjoy brings incredible enthusiasm to every class meeting. Her course is unlike any other collegiate class I've thus taken, but her course is effective. I found the student taught assignments to be interesting but still an effective method of presenting the course material. I appreciate the concern and interest she has for our feedback and opinions within class.
- I could not say enough good things about Mountjoy. She is excited about teaching, and she wants her students to do well while challenging them at the same time. She is prepared, informed, and willing to accommodate students who are willing to reach out.
- It was an absolute PLEASURE to be taught by Prof. Mountjoy!! Every class she was excited to be teaching a subject she truly cared about. With all the students she has, I felt like she knew all of us. That most basic connection to her students made me feel comfortable asking questions and bringing any concerns to her. She looked for common place connections to subject matter and her use of menti-meter, and in class assignments, was a great way to show active involvement in her students' education. I am actually sad her class is almost over!
- My instructor did an AMAZING job of teaching the BIOL 121 course! I learned a lot and the learning environment was always very welcoming, yet reasonably challenging. My instructor made difficult topics interesting and was very enthusiastic and knowledgeable of the topics. She gave constructive feedback and made it a point to make sure her students understood the content being presented to them. It was such a joy to have this instructor. Natalie Mountjoy is a great professor! She makes lab fun and easy to understand. I always feel like I know what to do, and if I don't then I can always ask for her guidance and figure it out.
- I think Dr. Mountjoy is a phenomenal teacher. She will explain things in a couple of different ways for everyone to understand what is going on. She will help us individually and get right beside us.
- The instructor tested an online lab manual, and I think that this method is an improvement over the traditional paper lab manuals.
- Dr. Mountjoy is such a joy to be around. She is very helpful to all her students in class, catering to the needs of each individual student. She is always open to help and has a very open mindset. Her class is very student driven and based on what the students want to do. I highly recommended this class and Dr. Mountjoy.
- She is helpful, but doesn't just tell us the answer. She is good at guiding her students to the answer.

**Figure 8.** Selected positive student comments from SITES. Universal totals across courses and semesters: Positive (N=145), Mixed (N=23), Actionable (N=19). All comments [available here](#) (return to [Table 2](#)).



## Classroom Observation Form for Peer Review of Teaching

Faculty Member: Dr. Natalie Mountjoy

Course Observed: Biol 121 006 Sp18 Cell & Molec Lab  
Prefix Course No Section Semester Name

Time: 2:20-4:20 Date: 3/20/2018 Observer: Dr. Bruce Schulte

**Write a review of the class observed noting areas described in the guidelines.**

28 students enrolled

Class started on time; Dr. Mountjoy made an announcement on the mid-term and how this section did very well.

Topic: Respiration leading into photosynthesis

Observations:

Dr. Mountjoy used projected slides to go over some of the basic concepts and procedures involved in today's lab. The study organism was the crayfish and Dr. Mountjoy showed the proper way to handle the animals, also asking if anyone had a shellfish allergy (none did). She also checked with what was being covered in lecture (BIOL 120) and stated that the lecture would go into more depth on the processes of respiration and photosynthesis. She asked what the body needs (oxygen, water, and food), went over aerobic and anaerobic respiration, covered some 'tips and tricks' for lab, as well as misconceptions. Once the lab started, Dr. Mountjoy continued to assist with procedures and check in on each group of students. They appeared to enjoy her presence in the lab.

Dr. Mountjoy had a clear and energetic presentation style with a good command of the material. There was an excellent rapport between her and the students.

Suggestions:

The students likely understand the style of Dr. Mountjoy at this point of the term. As a visitor, I would have benefitted from a short overview of what was going to go on with an approximate time frame for each. Everything was covered but given that it was several weeks (spring break, mid-term) since the last lab activity, it might have been helpful to the students as well.

Overall, Dr. Mountjoy did an excellent job!

The syllabus is well constructed. You might give further directions about the making up of a missed lab. The directions imply that the Make-Up Lab Request Form on Blackboard provides these directions but some more information on the syllabus would be helpful.

Please double check that you have all the requisite information (you can provide this link on your syllabus): <https://www.wku.edu/syllabusinfo/>

**Figure 9.** Classroom observation report for BIOL 121 S18, by Dr. Bruce Schulte (return to [Table 2](#)).

## Classroom Observation Form for Peer Review of Teaching

Faculty Member: Dr. Natalie Mountjoy

Course Observed: Biol 120 002 F18 Cell & Molec  
Prefix Course No Section Semester Name

Time: 9:35-10:55 Date: 11/15/2018 Observer: Dr. Bruce Schulte

### Write a review of the class observed noting areas described in the guidelines.

182 students enrolled; about 100 students participating in the online review questions

Before class started Dr. Mountjoy was answering questions by students, signing some forms, and in general interacting actively with students.

Class started on time. On the screens, Dr. Mountjoy had the calendar for the remaining classes, assignments, and the final.

Topic: Mitosis (review), Meiosis (finish), Mendelian Genetics (started)

#### Observations:

Dr. Mountjoy used a microphone for this large lecture space and she projected slides on the two screens available at the front of the room. The slides were clear without too much text and many were from the text to reinforce where students could go to see the information again. She used Mentimeter (<https://www.mentimeter.com/>) for live polling of students on review questions as well as applying the concept questions. She used an App to take attendance. Dr. Mountjoy had a clear plan of action and did well adhering to her timetable without appearing rushed. The class had a nice pace and Dr. Mountjoy checked in regularly with students through questions, Socratics questions, and the Mentimeter questions. She also did a six minute group project that will be carried forward to the next several class meetings.

Dr. Mountjoy showed clear understanding of the material and presented with in a lively, engaged manner. She used her own child rearing in discussing genetic mistakes and why females are more responsible than males in sexually reproducing species. The students found this interesting from their vocal responses and body positions. When she projected slides with a higher degree of written text, she explained that these were tables from the text and she did not expect students to write this information down now, but rather to know where to go to obtain the information. She ended class by finishing up the intended material and informing students of what would be covered next.

#### Suggestions:

For the first Menti question, the responses by students was visible from the start, which might have led to a crowd effect for which answer to select. Dr. Mountjoy realized this and for the remaining questions she did not make the responses visible until a large number of students had submitted answers. It was an interesting class. I really liked the use of the group project to break up the long class period and the use of the timer to keep it from lasting too long.

#### Syllabus:

The syllabus is very attractive – I like the green and the use of the biology logo! The pie chart for distribution of points in the course also makes it easy for students to understand the relative importance of different forms of assessment.

All the necessary information is present in a clear and informative manner.

**Figure 10.** Classroom observation report for BIOL 120 F18, by Dr. Bruce Schulte (return to [Table 2](#)).



## Classroom Observation Form for Peer Review of Teaching

Faculty Member: Dr. Natalie Mountjoy

Course Observed: Biol 120 001 S19 Cell & Molec  
Prefix Course No Section Semester Name

Time: 11:30-12:25 Date: 4/24/2018 Observer: Dr. Bruce Schulte

### Write a review of the class observed noting areas described in the guidelines.

146 students enrolled; >100 students present.

Before class started Dr. Mountjoy was answering questions by students and in general interacting actively with students.

Class started on time.

Topic: DNA Synthesis & started with "What did we look at on Monday?"

#### Observations:

Dr. Mountjoy used a microphone for this large lecture space and she projected slides on the two screens available at the front of the room. The slides and video clips were clear and relevant; Dr. Mountjoy integrated them well into her lecture points. She opened with Socratics questioning to have students provide hypotheses on DNA synthesis as part of a review from Monday. The video shown at the start was how she ended class on Monday. She used a nice technique of asking students to visualize the twisted ribbon structure of DNA and then using their fingers pull the DNA apart. She also used an online quiz system (with cell phones) for asking questions. Students were engaged and participated. Dr. Mountjoy had a clear speaking voice and was knowledgeable about the material. I left the class a little early.

#### Suggestions:

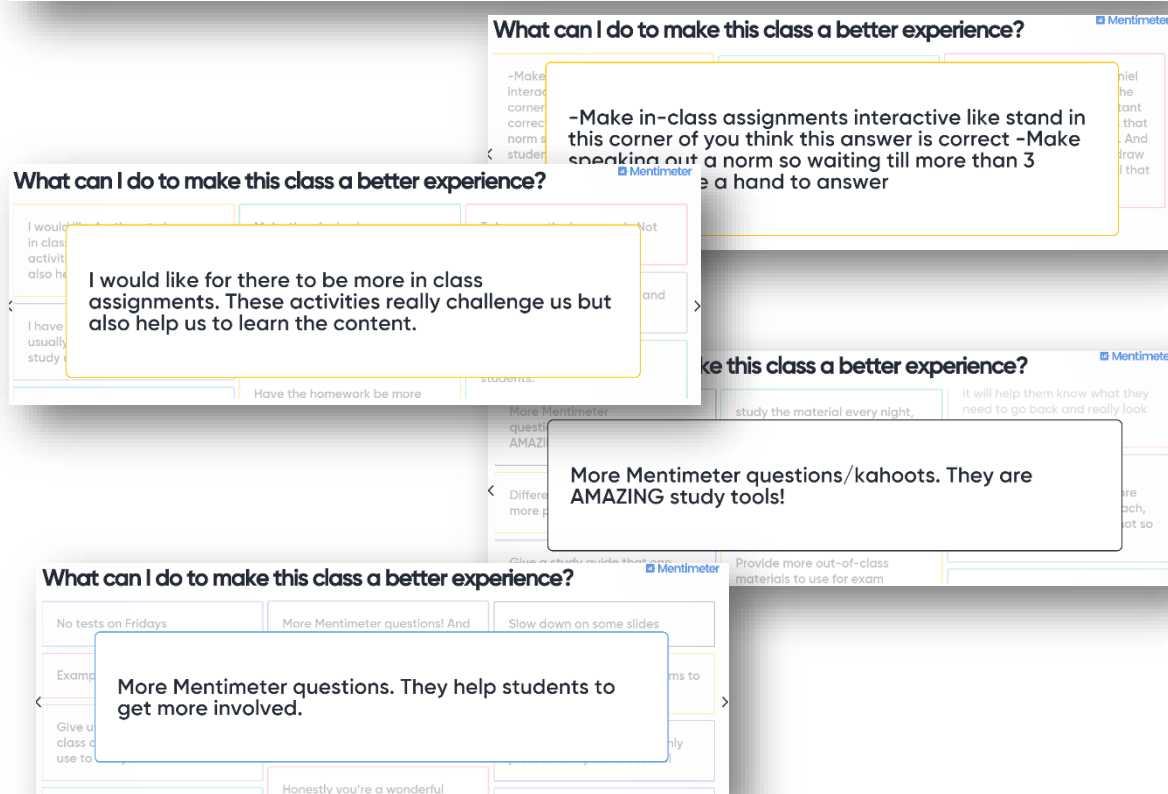
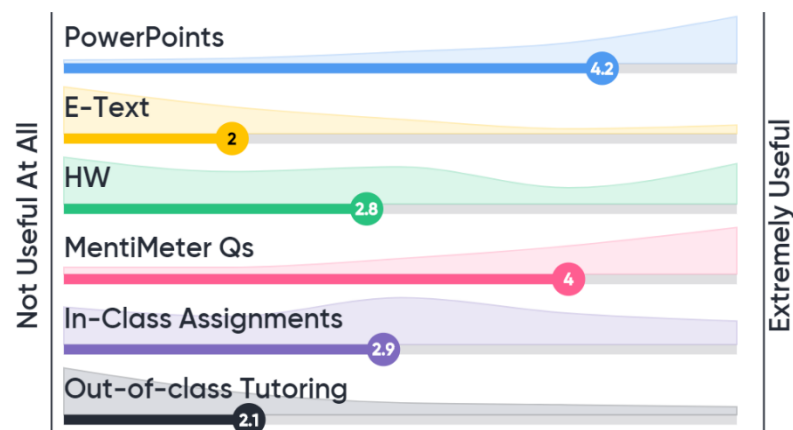
No major inputs as Dr. Mountjoy did a very nice job conducting the class. Given that the material was a direct continuation from the previous class, I wonder how a few in-class questions would have worked at the start to check what was retained and to have an idea of how firm a foundation was built for today's lecture. It could even be done without revealing the correct answers, then ask the questions again later and compared the two distributions. This assumes the software has this capability!

#### Syllabus:

The appearance of the syllabus is appealing. All the necessary information is present in a clear and informative manner.

**Figure 11.** Classroom observation report for BIOL 120 S19, by Dr. Bruce Schulte (return to [Table 2](#)).

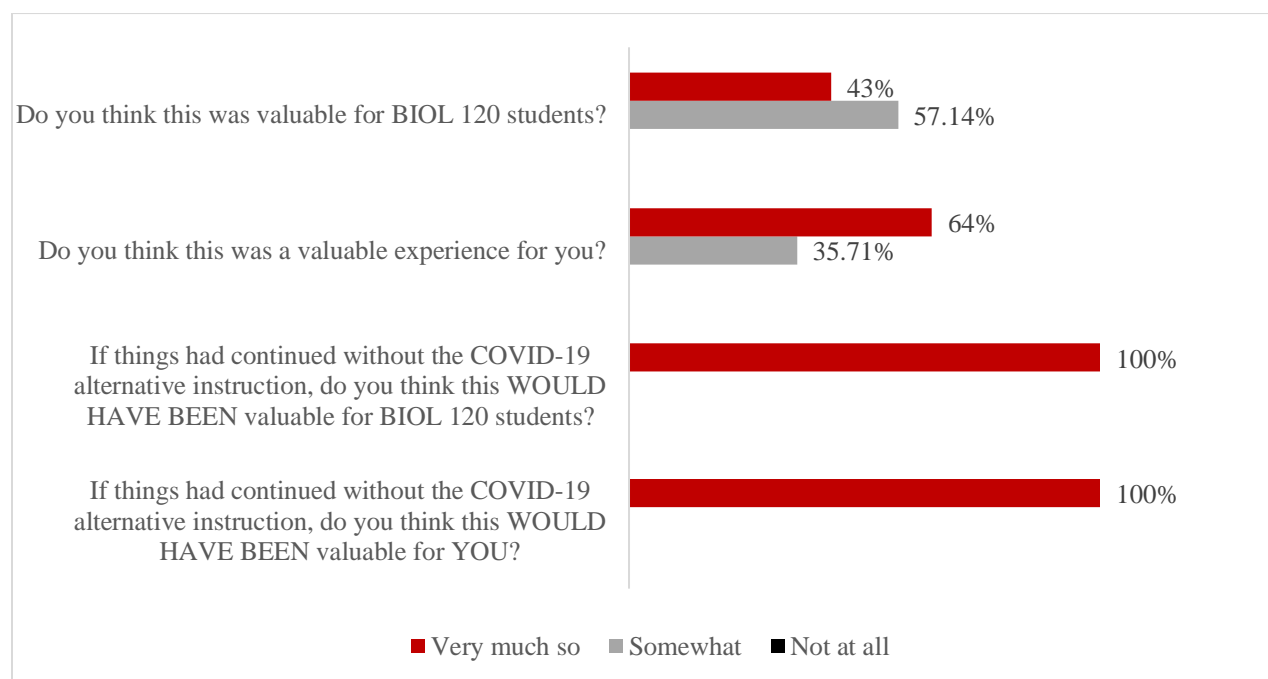
## How useful are the following tools?



**Figure 12.** Student opinion responses from BIOL 120 (S19) regarding use of in-class assignments and MentiMeter® questions. Students ranked the in-class assignments as the third most useful tool in the course (2.9 on a 5-pt. scale). Students ranked the MentiMeter® Questions as the second most useful tool in the course (4 on a 5-pt. scale). Responses obtained through the MentiMeter® app (return to Table 3).



**Figure 13.** Photos from the BIOL 120H Poster Session with faculty, staff, and graduate students. View the top two posters based on audience evaluations (return to [Table 3.2](#)).



**Figure 14.** (return to [Table 3.2](#)).



**Do you think using Learning Assistants in BIOL 120 is a good idea? Why or why not?**

- Yes, as highlighted in my literature review, many studies support it is beneficial for each aspect of the program: students, LAs, and professors. Grades improved, LAs were refreshed on foundational material while also learning ways to teach the material, and professors were made aware of material that was harder to grasp. For Bio120 it is a great idea because the lecture hall is so large. Students don't feel a belonging and it is very hard for them to get behind. Having an LA they can count on could change their outlook on biology as a whole. Being able to ask questions increases their understanding which can increase their satisfaction with the course. This can lead to more students pursuing a biology degree.
- I believe it is a good idea. The literature review over the learning assistance topic really put into perspective the large impact this can have for everyone involved, but from a personal perspective I believe it is great to give students this opportunity. Having someone available that has already been through the class and knows about the difficulties of college as a whole can be beneficial, especially to the freshman you usually have. These relationships can last longer than just this class also!
- Yes, I would have loved to have the option of having an older peer not only talk to me about how best to study for science courses but also to be there for me for scheduling and application advice if I was on a pre-med, dental, pharmacy track.
- I think this was an amazing idea and should definitely be considered for the future! This is a great opportunity for students in BIOL 120 to have extra support within the classroom and outside of it. This also serves as an opportunity for upperclassman students to have this credit, and be more involved in Biology by being in the classroom and helping younger students.
- Yes I do think this is a good idea. These students are just entering their future at Western. Many of them are scared to make connections, ask questions, or do not know how to effectively study. This learning assistants program gave them an extra source that is directly available to them and relatable. Learning assistants gives them a peer to talk to be less intimidating when asking a question or expressing their thoughts.

**Do you think this was a worthwhile experience for you? Please discuss what we intended vs what we could actually implement given the COVID-19 pandemic.**

- ...relearning the material helped me in my current biology class. It also helped me realize that the stuff I learn in each class is in fact important and will be used in later classes. It can seem easy to just learn material for the test but that is not what we are here for.
- I think this was very beneficial. Personally, I was able to review important content and I developed an appreciation for professors. I was able to learn interpersonal skills for how students act when they are confused but are nervous to speak up. I think the study session will be very beneficial in the future. If we are online next semester, I think Zoom review sessions might work as well. However, it is difficult for LAs to communicate with the students if they don't reply.
- This was definitely a worthwhile experience for me. These students gave me a new confidence that I have not had. It made me feel good to know that I could help them out by explaining a thought or even give them the confidence in an answer that they needed for reassurance. This was a whole new level of tutoring and more personable relationships. Had the COVID-19 pandemic not been a factor, I think being in person and seeing where they are struggling with would have given me the opportunity to further clarify a topic they needed help with and also help me to see where they are at and what studying techniques they are using is effective or not.

**Additional Comments**

- I would love to see this continue on in the future or even become available in other BIOL 120 classrooms. I think students need as much support as they can especially in a BIOL 120 classroom with freshman/sophomores who may become easily discouraged or lost. Older students being able to act as mentors and guide them hopefully inspires and motivates them to put in effort. I know students that also don't feel comfortable talking to their professors yet but will reach out to other students so by having us there we were able to connect with them in a way that wouldn't have happened if we weren't there.
- I wish this program was here when I was a freshman. This relationship between students and learning assistants is a huge advantage to have. To have someone be able to relate and guide you to properly studying to actually learn the material and retain it is very nice. Also to have someone, that is not an instructor, to bounce ideas off and not feel dumb about it is really refreshing. Some professors (not you Dr. Mountjoy :) ) give the impression of frustration when asking a question and not being able to answer what they ask. These learning assistants provide a safe space to relate and get clarification.
- If we are on campus and you ever want to do this again, please let me know! I would love to do this again! It's an amazing thing and Bio 120 was one of my favorite classes to this day. One thing I would recommend is making the students attend at least one study session during the semester and having your learning assistance make sure each kid is available for at least one, even if it is one on one. I have some students that really didn't want to attend anything or participate, but I know it would benefit them. I knew this because in class they would listen to me help another student and write it down or would be struggling but refuse to ask for help. I would love to show those students that it is okay to ask for help and that showing up to a study session isn't going to make people think down of you. I did explain this to these student, but in-person is different.

**Figure 15.** Excerpted comments from BIOL 120 Learning Assistants from their self-reflections. All comments [available here](#) (return to [Table 3.2](#)).



**Figure 16.** Screenshots of the new online BIOL 121 e-text. You can review types of content (e.g., “Connections” and “Faculty Spotlights”) on our [about page](#) (return to [Table 3.2](#)).



**Figure 17.** Results of student opinion survey (through MentiMeter®) on the paper vs. online manual. Scores were even on preparedness (3.9) and clarity (3.9) but higher for the online manual on navigability and appealing nature. Overall, student preferred the online manual (N=14 vs. 7; return to [Table 3.2](#)).



Exercise I
Exercise II
Exercise III
Poster Prep!

## Exercise II. Practice Spectrophotometry

Spectrophotometry is an incredibly useful technique! This virtual lab is meant to give you sense of what this technique is like and how it can be used. Hopefully you'll get to use this skill later on in other classes.

1. Enter the virtual Spec-Lab (please update or install your viewing software if prompted). You will see 5 cuvettes. Cuvettes are special spec test tubes. The one labeled 0 is your "blank" and is used to rest your spec. Cuvette tubes 1-3 you will fill with your own mix. Cuvette tubes 4 and 5 are standards and cannot be changed. We will IGNORE tubes 4 and 5.

ENTER SPEC VIRTUAL LAB

### Exercise II. Spectrophotometry Virtual Lab

Run through the simulation by following the directions in our online lab manual. Complete the table below:

Cuvette Tube	Contents	Volume of Blue Solution Added	Volume of Water Added	Absorbance (ABS has no units)	Concentration of Blue Solution (ppm)
0	Water (Blank)	0	----	0	8.0ppm
1	Water & blue solution	20	30	67.7	8.0ppm
2	Water & blue solution	10	50	70	8.0ppm
3	Water & blue solution	80	20	63.8	8.0ppm

Do you think there is a relationship between these two variables? Yes

absorbance there is.  
orption.

### Exercise I.

Paste three selfies in the area below. The third MUST be a selfie of you with your extracted DNA!

**Figure 18.** Screen shot of the BIOL 121 On-line Lab on spectrophotometry and photosynthesis, along with screen shots of student work (with red borders) showing data collection from a virtual lab experiment and selfies with the at-home DNA extraction. View all 6 new labs in Unit 2 and Unit 3 here: <http://www.121cellmetagen.com> (return to Table 3.3).

HOME
EVOLUTION
PROTISTS
ANIMAL BEHAVIOR
FUNGI
ECOLOGY
TERRESTRIAL PLANTS

Before you begin! Open the Animal Behavior Post-Lab. Follow these directions in each exercise closely so you know what to put in your Post-Lab to receive full credit for this online activity.

Exercise I
Exercise II
Exercise III

### FIND YOUR PILLBUGS & RUN YOUR EXPERIMENTS

#### Procedure Part 1

- Find some pillbugs! Where should you look? Think about what you have learned about pillbugs!
- You can find them in cool, moist, dark places. Especially where there is detritus (dead, decaying organic matter): under rocks, logs, trees, woodpiles or bushes.
- Collect as many as you can. You need a minimum of 5 but more is always better! Be gentle with them. They cannot hurt you in anyway. They are relatively hardy, but take care not to smash them while collecting.
- Take pictures while collecting and notes on where you find them.
- Count your final catch and complete Part 1 of Exercise I in your post-lab.

#### Procedure Part 2

- Experiment Set-up
  - Now that you have your pill bugs, you need begin o sides and a flat bottom: tupperware, serving dish, s of your chamber, use any type of cooking, vegetable
  - You will also need some type of holding chamber, li
  - You need to place a papertowel out to fit in the bott
  - You will also need a light source (desk or table lamp, means of providing moisture (a wet paper towel).
  - Need a review on hypotheses? This YouTube vid

Environment	1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	Sum	Mean
Light	4	3	2	2	3	1	3	1	1	2	1	2	25	2.08
Dark	2	3	4	4	3	5	3	5	5	4	5	4	47	3.92

Insert a photo of this experiment here.

1) Redbud  
*Cercis canadensis*

2) Oak  
*Quercus palustris*

3) Pine Tree  
*Pinus virginiana*

**Figure 19.** Screen shot of the BIOL 123 Virtual Lab on Animal Behavior along with screen shots of student work (with red borders) showing data collection with the at-home pillbug experiment and selfies with the at-home tree ID. View all 6 new labs here: <https://www.biol123online.com>. (return to Table 3.3).

**Natalie Jones Mountjoy, Ph.D.**

Department of Biology · Western Kentucky University

Bowling Green · KY · 42101

natalie.mountjoy@wku.edu

\*shading denotes activities since WKU-hire

**EDUCATION**

2014      Ph.D. Zoology and Center for Ecology, Southern Illinois University  
2007      M.S. Biology, Western Kentucky University  
2002      B.A. Biology, University of Kentucky

**PROFESSIONAL EXPERIENCE**

2017-current    Assistant Professor, Pedagogy, Department of Biology, Western Kentucky University  
                    BIOL 120 Biological Concepts: Cells, Metabolism & Genetics  
                    BIOL 120 Biological Concepts Honors: Cells, Metabolism & Genetics  
                    BIOL 121 Biological Concepts Lab: Cells, Metabolism & Genetics  
                    BIOL 123 Biological Concepts Lab: Ecology, Evolution & Diversity  
                    BIOL 369 Cooperative Education in Biology Learning Assistant Co-Op

2012-2016      Director, Life Science Academy, Multi-district, secondary and post-secondary  
                    partnership, Owensboro Community and Technical College

2012-2016      Adjunct Faculty, Owensboro Community and Technical College  
                    PLW 130 Principles of Biomedical Science  
                    PLW 145 Biomedical Innovation

2016              Instructor, Project Lead the Way, University of Kentucky

2011-2012      Graduate Teaching Fellowship, NSF Noyce Program, Southern Illinois University  
                    PBL 270 Interdisciplinary Science Seminar  
                    SCI 503b Scientific Research Methods for Teachers

2011              Guest Lecturer, Southern Illinois University  
                    Human Dimensions of Natural Resource Management & General Biology

2007-2009      Adjunct Faculty, Owensboro Community and Technical College  
                    Bio 112 General Biology Lecture  
                    Bio 113 General Biology Lab

2005-2007      Graduate Teaching Assistant, Western Kentucky University  
                    Bio 123: Biological Concepts  
                    Bio 114: Introduction to Biology

**CURRICULUM DEVELOPMENT**

2020              Emergency on-line only curriculum for BIOL 120, BIOL 121 and BIOL 123, including  
                    development of a new BIOL 123 course website (biol123online.com)

2020              Learning Assistants in Introductory Biology (BIOL 369), for inclusion in BIOL 120  
                    lectures

2019              Inquiry-based curriculum development for BIOL 121 Biological Concepts Lab: Cells,  
                    Metabolism & Genetics (121cellmetagen.com)

2017-current    Inquiry and problem-based revisions to introductory courses for biology majors at  
                    Western Kentucky University.

2012-2016      Inquiry-based curriculum for the Life Science Academy Community Benefit Program

2011-2012      Inquiry-based curriculum for the NSF Noyce Teacher Scholarship Program at Southern  
                    Illinois University

2009-2012	Inquiry-based curriculum for the Budding Biotech Program and Summer Camp for 3rd and 4th grade students through the Owensboro Museum of Science and History and the Western Kentucky Botanical Garden
2008	Shared introductory biology lab curriculum at Owensboro Community and Technical College
2007	Bio 112 General Biology and Bio 113 Introductory Biology Lab courses at Owensboro Community and Technical College
2006	Assisted faculty in developing the curriculum for the new Biology 123 lab course at Western Kentucky University

## RESEARCH EXPERIENCE

2020-current	The effects of using HIPs in gateway courses on student success and retention
2020-current	Learning Assistants in the General Biology Lecture Hall: How peer mentoring and small groups can transform the student experience in large lectures
2019-current	Teaching students to learn: The effects of a metacognition-based intervention on student success in large lecture classrooms
2018-current	Why they stay: Analyzing the persistence of at-risk students in the Ogden College of Science and Engineering to identify successful retention initiatives and programs
2018-current	Identifying the impact of increased inquiry-based techniques into the biology curriculum across courses and cohorts.
2017-current	Assessing the effects of 5 <sup>th</sup> week interventions: Which type (announcement, email or meeting) achieves the greatest impact on students' final grades.
2009-2014	Community-based natural resource management: group capacity, resource management planning and assessing success, Dissertation Research with Dr. Matt Whiles and Dr. Erin Seekamp,
2011	Illinois-Indiana Sea Grant, Researcher, Southern Illinois University with Dr. Erin Seekamp
2009	Watershed Health Integrated Research Program, Graduate Student Researcher, Southern Illinois University with Dr. Mae Davenport
2008	National Science Foundation Math Science Partnership, Research Assistant, Western Kentucky with Dr. Heather Johnson
2005-2007	The effects of human/wildlife conflict on the potential for community-based ecotourism in the Kasigau region of southeast Kenya, Thesis research with Dr. Mike Stokes
2001- 2002	The distribution of the <i>Neotoma magister</i> (Allegheny woodrat) in an isolated, mix-mesophytic forest in Southeastern Kentucky, Independent study with Dr. James Krupa
2000- 2002	Analysis of sex-ratio bias in <i>Marchantia inflexa</i> (liverwort), Lab Assistant with Dr. Nicholas McLetchie

## CONFERENCE PROCEEDINGS (\* student under advisement)

<b>Mountjoy, N. J.</b> , McDaniel, K., Rowland, N. It Takes a Department to Shift a Paradigm: Starting in the lab. AAC&U's Transforming STEM Higher Education conference, Chicago, IL, November 7-9, 2019.
Ayers, R., Dumancic, M., <b>Mountjoy, N. J.</b> , Otto, P., Super, D, and Upright, P. Keeping the promise of colonnade: Needs assessment and action plan. AAC&U's 2019 Institute on General Education and Assessment, Burlington, Vt, June 4-7, 2019.

\*Stallings, A., Vora, S., Towery, N., **Mountjoy, N. J.** And the band played on: hearing loss among percussionists. Project Lead the Way, Posters at the Capital, KY, March 1, 2017.

- \*Murtaza, I., Madai, N., Howerd, J., **Mountjoy, N. J.** The effects of environmental factors on REM sleep. Project Lead the Way, Posters at the Capital, KY, March 1, 2017.
- \*Stallings, A., Jones, J., Vora, S., **Mountjoy, N. J.** An EPIC challenge: the rising costs of epi pens. Project Lead the Way, Posters at the Capital, KY, March 1, 2017.
- \*Embry, A., Buckman, C., **Mountjoy, N. J.** Trotting all over the navicular: the effects of environmental variables on Navicular Syndrome in horses. Project Lead the Way, Posters at the Capital, KY, March 1, 2017.
- Mountjoy, N. J.**, Advanced Research Techniques. Invited speaker, Project Lead the Way, Kentucky State Conference, Shelbyville, KY, October 3-4, 2016.
- \*Cecil, M., Kurtz, L., Linn, E., **Mountjoy, N. J.** Keep it clean, bacteria's mean: a better bioassay to detect bacteria in the emergency department. Project Lead the Way, Posters at the Capital, KY, February 18, 2016.
- \*Martin, N., Hall, W., Muthalali, S., **Mountjoy, N. J.** Protect your blind side or suffer the consequences: an analysis of the impact of concussions on high school athletes' GPAs. Project Lead the Way, Posters at the Capital, Frankfort KY, February 18, 2016.
- \*Miller, A., Millay, R., Hebda-Hobbs, G., Emani, C., **Mountjoy, N. J.** Tracing the ancestry of the asthma gene using bioinformatics. Project Lead the Way, Posters at the Capital, Frankfort KY, February 18, 2016.
- Mountjoy, N. J.**, What is the Life Science Academy? Invited speaker, Owensboro Rotary Club, Owensboro, KY, January 2016.
- Mountjoy, N. J.**, Your Biomedical Program from In-Vitro to In-Vivo. Invited speaker, Project Lead the Way, Kentucky State Conference, Somerset, KY, October 2-3, 2015.
- Mountjoy, N. J.**, Parent and Community Involvement Forum, invited speaker, Project Lead the Way, Kentucky State Conference, Somerset, KY, October 2-3, 2015.
- Mountjoy, N. J.**, Seekamp, E., Davenport, M. A., Whiles, M. R. The effects of community-based group capacity on resource management planning success: Elevating implementation outcomes from good to great. Presented by Natalie Mountjoy at the Ecological Society of America Conference, Minneapolis, MN, August 4-9, 2013.
- Seekamp, E., **Mountjoy, N. J.**, Davenport, M., Whiles, M. 2013. Achieving laser-like vision: An examination of the relationship between indicators of CBNRM group capacity and planning success. Presented by Erin Seekamp at the International Symposium on Society and Resource Management, Estes Park, Colorado, June 4-8, 2013.
- Seekamp, E., **Mountjoy, N. J.** 2013. Alcohol, apathy, and arrogance: Examining the effectiveness of the Stop Aquatic Hitchhikers! Campaign. Northeastern Recreation Research Symposium, Cooperstown, New York, April 5-7, 2013.
- Renzaglia K., Janesie, J., \*Sikorski, J. W., **Mountjoy, N. J.**, Henson, H. 2012. Research Activities and Problem-based Learning Experiences of Rural Teachers in Southern Illinois. NSF Robert Noyce Teacher Scholarship Program Conference, Washington, D.C., May 23-25, 2012.
- Mountjoy, N. J.**, Davenport, M. A., Myers, D. J., Whiles, M. R. An assessment of Illinois Conservation Opportunity Areas: Stakeholders' perspectives on conservation planning, implementation, and threats. A poster presented by Natalie Mountjoy at the Emerging Issues Conference, Atlanta, GA, April 11-14, 2010.
- Mountjoy, N. J.**, Exploring the potential bushmeat epidemic in southeastern Kenya, Walk and Talk Seminar Series, Invited speaker, Western Kentucky Botanical Garden, Owensboro, KY. April 2008.
- Mountjoy, N. J.**, A look at community-based conservation efforts in southeast Kenya: The importance of human dimensions in wildlife conservation. Invited speaker, International Program, Owensboro Community and Technical College, Owensboro, KY, February 11, 2008.

**Mountjoy, N. J.**, Daday, G., Stokes, M., Kimwele, C. Questioning conservation: Social surveys in conservation biology as tools to determine the potential of community-based ecotourism efforts. Presented by Natalie Mountjoy at the International Conference of the Society for Conservation Biology, Port Elizabeth, South Africa, 2007.

**Jones [Mountjoy], N.**, Smith, B., Sutton, B., Kimwele, C., McElroy, D., Stokes, M. Assessment of the bushmeat trade in southeastern Kenya. Presented by Dr. Stokes at the international conference of the Society for Conservation Biology, Port Elizabeth, South Africa, 2007.

**Jones [Mountjoy], N.**, Smith, B., Sutton, B., Kimwele, C., McElroy, D., Stokes, M. Assessing bushmeat availability in Kenya's rural and urban markets. Presented by Natalie Jones at the annual American Society of Mammalogists Conference, 2006.

#### **PEER-REVIEWED PUBLICATIONS**

**Mountjoy, N. J.**, Whiles, M. R., Spyreas, G., Lovvorn, J. R., & Seekamp, E. 2016. Assessing the efficacy of community-based natural resource management planning with a multi-watershed approach. *Biological Conservation*, 201, 120-128.

**Mountjoy, N. J.**, Seekamp, E., Davenport, M. A., & Whiles, M. R. 2014. Identifying capacity indicators for community-based natural resource management initiatives: focus group results from conservation practitioners across Illinois. *Journal of Environmental Planning and Management*, 57(3), 329-348.

**Mountjoy, N. J.**, Seekamp, E., Davenport, M. A., & Whiles, M. R. 2013. The Best Laid Plans: Community-Based Natural Resource Management (CBNRM) Group Capacity and Planning Success. *Environmental management*, 52(6), 1547-1561.

Krupa J, et al.... **Jones [Mountjoy], N.** 2002. Distribution of the Allegheny Woodrat (*Neotoma magister*) in an isolated, mix-mesophytic forest in Southeastern Kentucky. *Journal of Kentucky Academy of Sciences* 65(1): 33-34.

#### **IN-PROGRESS MANUSCRIPTS**

**Mountjoy, N.J.** Learning Assistants in the General Biology Lecture Hall: How peer mentoring and small groups can transform the student experience in large lectures and provide upperclassman with opportunities to build in-discipline knowledge, confidence, and communication skills. Potential Outlets: Innovative Higher Education, Journal of College Science Teaching

**Mountjoy, N. J.** and Rowland, N. A story in inquiry in three labs: How the scale of inquiry and student maturity affects student learning gains. Potential Outlets: International Journal for the Scholarship of Teaching and Learning or Life Science Education

Singh, A., McElroy, D., and **Mountjoy N. J.** Telehealth cardiology clinic during COVID-19: Patients' Perspectives & Satisfaction. Potential Outlet: Cardiovascular Quality and Outcomes

#### **PUBLISHED TECHNICAL REPORTS**

Meyers, D. J., **Mountjoy, N. J.**, Whiles, M. R., & Seekamp, E. 2012. Illinois Conservation Opportunity Areas: Coordination and Planning in Support of the Illinois Wildlife Action Illinois Department of Natural Resource Management Project Number: T-55-P-1. Final Report. Available at <https://www.dnr.illinois.gov/conservation/IWAP/Documents/-SWGReports/T-55%20P-1%20Final%20IL%20COA-%20Coordination-Planning%20in%20Support%20of%20the%20Action%20Plan%20-Revised.pdf>.

**Mountjoy, N. J.**, Seekamp, E., Myers D. J., Whiles M. R. 2011. Making conservation work: ideas from on-the-ground practitioners. Illinois Department of Natural Resource Management Project Number: T-55-P-1. Available at <http://www.dnr.illinois.gov/conservation/iwap/documents/t-55%20swg%20project/2-%20fg%20report%20to%20idnr.pdf>.



**Mountjoy, N. J.,** Davenport, M. A., Meyers, D. J., & Whiles, M. R. 2010. An assessment of Illinois Conservation Opportunity Areas: stakeholders' perspectives on conservation planning, implementation, and threats. Illinois Department of Natural Resources. Available at <http://www.dnr.illinois.gov/conservation/IWAP/Documents/T-55%20SWG%20project/1-%20Original%20COA%20Survey.pdf>.

## GRANTS

2019	Mahurin Honors Faculty Engagement Grant, \$280.00, awarded.
2018	Office of International Programs for travel and course development, \$2,000.00, awarded.
2018	Ogden Quick Turn-Around Grant, \$1,600.00, not funded.
2016	Kentucky Education Cabinet, Work Ready Skills Initiative (collaborator, finalist) \$5,760,000.00, awarded at 50%
2016	Dart Foundation Grant for STEM Education \$5,000.00, awarded
2016	Owensboro Health Community Benefit Grant \$60,500.00, awarded
2016	National Science Foundation, Education, Outreach and Communication (collaborator with C. Emani & C. Wilkerson), \$10,000.00, awarded
2015	Dart Grant for STEM Education, \$5,000.00, awarded
2015	Owensboro Health Community Benefit Grant, \$64,000.00, awarded
2015	Kentucky Department of Education, Federal Perkins Reserve Fund, \$24,000.00, awarded
2015	Women's Guild Grant, \$1,000.00, awarded
2014	Dart Foundation Grant for STEM Education, \$5,000.00, awarded
2014	Owensboro Health Community Benefit Grant, \$52,000.00, awarded
2014	Kentucky Department of Education, Biomedical Sciences Career Pathway Grant, \$15,000.00, awarded
2013	Owensboro Health Community Benefit Grant, \$61,550.00, awarded

## SERVICE

2019-current	Department of Biology Advising Committee Member
2017-current	Ogden College Retention Taskforce, Co-chair 2019-20
2017-current	Department of Biology Graduate Committee
2017-current	MAT-Biology Admission Advisor
2017-current	Department of Biology Retention Committee, Chair 2019-20
2016-current	Board of Directors, Western Kentucky Botanical Garden, Owensboro, KY
2020	Science advisor to WKHL and the Medical Center
2020	CITL Faculty Development Webinar: Adjusting Your Assessments for Online
2020	CITL YouTube Panel Presentation and Q&A: Assessment during COVID-19
2020	Biology Student & Faculty Concerns During Online-Only Instruction (survey development & analysis)
2020	Search Committee: Biomedical Faculty, Biology Department
2020	Search Committee: Department Chair, Biology Department
2020	Ogden Preview Day
2020	WKU HerStory Recruiting Event
2017-2019	Program Director and Advisor: MAE in Biology
2017-2019	Gatton Academy Interview Day
2017-2019	Gatton Academy Research Fair
2019	Ogden College Advisory Board Presentation
2019	WKU Colonnade General Education Curriculum Taskforce
2019	Biology Clubs and Faculty Meet & Greet

2018	Ogden Preview Day
2018	Science Olympiad
2014-2017	Institutional Animal Care and Use Committee (IACUC), Owensboro Community and Technical College
2016	Forum guest on “Female Ph.D.s” at the Girl’s Inc. STEM Event, Kentucky Wesleyan College, Owensboro, KY
2013-2015	Impact 100 Member (women’s service organization) Owensboro, KY
2008-2013	Founder and consultant with the Budding Biotech Program, Owensboro Museum of Science and History, Owensboro, KY
2008-2013	Board of Directors, Owensboro Museum of Science and History, Owensboro, KY
2008	Guest Scientist, Girls Inc., Owensboro, KY, <a href="http://sciencegirlsinc.weebly.com">http://sciencegirlsinc.weebly.com</a>
2005-2006	Co-President, Inaugural Biology Graduate Student Organization, Western Kentucky University

## PROFESSIONAL DEVELOPMENT

2020	Assessment during COVID-19, WKU-CITL, June, 2020
2020	Integrative student and course data, Pilot Program Training, Pearson, February 19, 2020.
2019	Association of American Colleges & Universities, Transforming STEM Higher Education conference, Chicago, IL, November 7-9, 2019.
2019	Association of American Colleges & Universities, Institute on General Education and Assessment, University of Vermont, June 2019.
2019	Problem-based Learning Professional Learning Community, Center for Innovative Teaching and Learning, WKU, February - March 2019.
2019	Pearson’s Biology Leadership Community Summit, invited participant, Las Vegas, Nevada, March 19-21, 2019.
2019	HIPs (High Impact Practices) in the States Conference, WKU, February 20-22, 2019.
2018	Mastery Training with Pearson, teleconference, July 24, 2018.
2018	The Teaching Professor Conference in Atlanta, GA, July 1-3, 2018.
2018	Kentucky Pedagogicon at Eastern Kentucky University, May 18, 2018.
2018	Blackboard - 10 Things You Didn't Know, IT - WKU, February 22, 2018.
2018	5th Week Assessment Training, ACDC, WKU, February 16, 2018.
2018	Using Micro Activates Workshop, Center for Innovative Teaching and Learning, WKU, WKU, January 14, 2018.
2017	iClicker Training, Steven Kirtley, Senior Instructional Technologist, Center for Innovative Teaching and Learning, WKU, September 6, 2017.
2017	IT Blackboard Training, On-line training, WKU, September 2017.
2017	Service-Learning Professional Learning Community, Center for Innovative Teaching and Learning, WKU, Sept.- Oct. 2017.
2015	Core Training in Biomedical Innovation, Project Lead the Way, University of Kentucky, June, 2015.
2012	Core Training in Principles of Biomedical Science, Project Lead the Way, University of Kentucky, June 2012.

## RECOGNITION

2020	CITL Teaching Honors Nominee
2020	Alpha Omicron Pi Faculty Member of the Year
2019	Alpha Delta Pi Faculty Member of the Year

2018	Ogden College Junior Faculty Teaching Award
2016	Project Lead the Way, Kentucky Teacher of the Year
2016	Awarded Master Teacher Status, Project Lead the Way
2012	Graduate Fellowship, NSF Robert Noyce Master Teacher Program, Southern Illinois University
2010	Integrative Graduate Education and Research Traineeship (IGERT) Affiliate, Multidisciplinary watershed science team, Southern Illinois University
2007	John D. Minton Award for Outstanding Contributions, Western Kentucky University
2007	Ogden College of Science and Engineering Outstanding Graduate Student, Western Kentucky University
2007	Biology Graduate Student of the Year, Western Kentucky University
2006	American Philosophical Society, Lewis and Clark Field Scholar
2005	World Topper Scholarship, Western Kentucky University

### **PROFESSIONAL SOCIETY MEMBERSHIPS**

National Science Teachers Association, Society for Human Ecology and Society for Conservation Biology

### **PROFESSIONAL REVIEWS**

Conservation Biology, Case-Studies in the Environment (Pedagogical Journal), Environmental Management, Journal of Environmental Planning & Management, Ecological Economics, Human Dimensions of Wildlife

[\(return to cover letter\)](#)