Teaching Dossier
J’Nelle Young
Ph.D Candidate
Cell and Developmental Biology
University of British Columbia, Vancouver

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Teaching Philosophy

As a teacher of science, my philosophy is simple and straightforward. I find the ability to recall scientific terms and formulas almost useless in this field and should never be confused with true comprehension. This is consistently my experience as a Teaching Assistant in the Gross Anatomy Lab. For example, students who memorize anatomical terms can correctly label structures of the heart but when asked to describe the direction of blood flow through the heart, they stumble. I believe that as an instructor, it is important to challenge students to do more than memorize facts. A quality education inspires students to think critically about the questions they will encounter in and out of university. This teaching philosophy highlights my beliefs about learning-centered education and my goals for achieving it. There is a change that takes place in a student when a scientific concept is fully comprehended. The level of performance increases from simple recall to application and even synthesis of the information. Research has cited that traditional, lecture-style teaching does not lead to this level of comprehension. Rather, engaging students in interactive discussions has proven to foster retention of information and develops higher-order thinking skills. These skills can transcend the classroom. They serve as a tool when students are confronted with new concepts in subsequent courses and a general framework of knowledge to apply to the world around them. Achieving this level of understanding is highly dependent on the classroom environment. Establishing a level of trust helps students to become fully engaged in the coursework. Often, students will complete a required course not knowing if they have gained any personal benefit other than a mark on their transcript. With this lack of control over their education, students blindly put their trust in the instructor, hoping they will be provided with the necessary tools that they need. I believe that it is vitally important for an instructor to make students aware of the learning outcomes of their education at every step. It should be clear to students what they will gain from an entire course and from each individual day they engage in it. By supplying students with learning outcomes, I hope to allow them to feel in control of their education and establish that level of trust with me. Another important aspect of classroom environment is that each class, large or small, has a diversity of backgrounds and educational experiences and therefore unique perspectives to offer. When faced with a new concept I find this diversity to be of immense benefit. Through interactive learning, for example, group collaboration, students are able to grapple with new information, practice using it, and come to an understanding together. I believe this process is particularly useful to lead to a deeper understanding of scientific concepts. I believe, as an instructor, that it is essential to regularly assess student progress. Regular assessment allows a form of communication between instructor and student. Both are able to identify areas of strength and
areas that need improvement. This assessment can take many forms. For example, it could be a quiz, peer evaluation, or presentations. Regular assessment allows for adjustment of the pace and instruction to achieve ideal outcomes. Rather than a source of facts, I view an instructor as a facilitator of deep learning and critical thinking. My personal objective is to provide the enthusiasm, inspiration and learning environment that students need to reach these levels of comprehension.

Teaching Activities:

Teaching Assistant

**Fundamentals of Body Design** (UBC Faculty of Medicine) September 2007-present, ~300 first-year medical students/4 hours per week

This course navigates students through the various body systems of the thorax, abdomen and pelvis. It includes a lecture and lab portion. As a TA in this course, I attempt to facilitate the application of concepts that are provided in lectures to the individual students' dissections.

**Brain and Behavior** (UBC Faculty of Medicine) September 2007-present, ~300 second-year medical students/4 hours per week

The responsibilities for this course are the same as for FOBD but the entire course is dedicated to Head and Neck Gross Anatomy.

"Anatomy Club" September 2008-present, ~4-8 graduate student teaching assistants/2-3 hours per week

This club serves to prepare graduate student TAs who may be inexperienced or need a refresher in the Gross Anatomy lab dissections. The group practices the weekly dissection together and discusses potential problems and questions that may arise from the medical students in an attempt to help the lab to run smoothly.

**Fundamentals of Body Design** (UBC Faculty of Dentistry) September 2011-December 2011, ~45 first-year dental students/4 hours per week

This course is similar to FOBD with an emphasis on Head and Neck Anatomy due the importance in the field of Dentistry. As TA in this course, I attempt to facilitate the application of concepts that are provided in
lectures to the individual students' dissections.

DHYG310 (UBC Faculty of Dentistry) September 2010-December 2010, 22 students, 3 hours

I prepared and taught a two-hour review in gross anatomy for third-year dental hygiene students on local anesthetic nerve blocks. The students worked together in groups to identify location of needle insertion on human prosections and potential complications that a practitioner may encounter with each block.

DHY206 (UBC Faculty of Dentistry) September 2010-December 2010, ~25 students, 3 hours

I assisted the course instructor with set-up and implementation of review on head and neck anatomy for second-year dental hygiene students.

MIDW (UBC Department of Family Practice) September 2011-December 2011, ~20 students, 3 labs of 2 hours

As a TA in this course, I attempt to facilitate the direct application of concepts that students are provided in lectures to the lab portion (prosected human specimens) of the course.

Publications and Professional Contributions:

Publications:


J’Nelle S. Young, Yoshimi Takai, Katarina L. Kojic and A. Wayne Vogl, Internalization of adhesion junction proteins and their association with recycling endosome marker proteins in rat seminiferous epithelium.

http://jnelleyoung.wordpress.com/


**Presentations/Abstracts:**


**J’Nelle Young** and A. Wayne Vogl. Multi-tasking focal adhesion protein zyxin is present at tubulobulbar complexes (2011) Poster presentation at the international FASEB conference in Washington, DC.

**J’Nelle S. Young** and A. Wayne Vogl. Rab 11 is associated with nectin 2 positive vesicles in sertoli cells at newly forming adhesion junctions with early elongating spermatids in rat testis (2010) Poster presentation at the international FASEB conference in Anaheim.


**Guest Lecturer**

http://jnelleyoung.wordpress.com/
Because of my research on the seminiferous epithelium, I was invited by a colleague at the British Columbia Institute of Technology (BCIT) to give a talk to her class of radiology technician students. I gave a brief lecture on my research and the male reproductive system. As my first teaching experience outside of UBC, this experience was especially valuable. Please see “Assessment – Student Feedback” section for student evaluations of the lecture.

This lesson that I taught to a first year Biology class was an attempt to incorporate active learning into a large classroom environment. The subject of the lesson was Female Reproductive Anatomy. I invite the students to email me with any questions, comments or concerns about the lesson rather than asking them to fill out a formal evaluation. Please see “Assessment – Student Feedback” section for student evaluations of the lecture.

Scientists & Innovators in the Schools (SIS) is a program that helps address British Columbia’s need for more scientists, engineers, technologists and technicians to promote students’ interest in these areas. The goal is to inspire students with exciting, in-school presentations by real scientists.

As a volunteer for the program, I created and presented a one-hour, interactive lesson on the heart for children between the ages of 8 - 12.

I have given the lesson to over 200 students in the Vancouver area.

As part of my role as a Ph.D student in the Vogl lab, I supervise and collaborate with undergraduate students. These bright and ambitious students participate in the lab for directed studies work and as volunteers. I have been fortunate to work closely with the students listed below.
A. Marc De Asis, Undergraduate in Physiology and Microbiology, UBC  
B. Katarina Kojic, Undergraduate in Pharmacy, UBC  
C. Nelly Saber, Undergraduate in Science, UBC

**Activities to Improve Teaching and Learning**

**Instructional Skills Workshop**

A three-day workshop designed to enhance and develop instructional skills for graduate students. Participants benefit from practicing skills and sharing ideas with peers and trained facilitators. The workshop provides an opportunity to teach three mini-lessons and try new and challenging ideas. All of the theories that are introduced are learning-centered.

*Certificate of Completion: Appendix E

**Biology 535 – Teaching and Learning in the Life Sciences**

A 14-week course designed to introduce graduate students to pedagogical concepts and allow development of skills required for teaching science at university and college-level. Students explore teaching from a learner-centered approach based on the Constructivist Theory of Learning.

Pedagogical concepts are integrated into teaching practice by literature analysis, classroom discussion, and intense personal reflection. Students get experience in delivering a lesson to a small group of peers, a lab or tutorial, and a large classroom.

**Assessment**

**Student Feedback**

This section of my teaching dossier includes student feedback that has made me reflect on and change – at least in some part – the way I teach.

**Biol 153 – Large Classroom**

"Hello this is a student from the Biol 153 class that you lectured last week. I am emailing you because I wanted to give you some feedback about your lecture. I found your entire lecture very engaging. I found you very easy to listen to and interesting. You seemed to be very interested in the subject and know a lot about it. The thing that stuck out most to me about your
lecture is that I found, being a woman, your lecture really empowering. I am a biology major in my fourth year and therefore have learned about the reproductive tract before, however teachers always talk quite poorly of women’s reproductive systems, claiming they are "complicated" and a "default". I really appreciated the way you portrayed women’s bodies as important, strong and respectable. I am a really big fan of Dr. “X”, however he does not always talk about women with the respect I would like. Many science textbooks to this day still portray the past’s values and ideals of women. This views women as passive, weak and not in control. I felt like your lecture made women’s bodies appear very strong (when you talked about the many muscles) and complex (NOT complicated). This, for me, was felt throughout the entire lecture. I found it very inspiring and you made me proud to be a woman!! So thanks, I think you will make an awesome Professor one day!!"

"I really really enjoyed your time with us (bio 153) this afternoon! I learned a lot in the 30 minutes that you were here and it really inspired me to do well and go for my dream to go to med school. I really liked how you really broke down the layers of the FRS and how we immediately applied what we learned to real-life situations. Overall, a great interactive lecture and I hope you do well with your future endeavours :)."

After my first attempt at active learning in a large classroom setting, these two emails were very encouraging to receive. They provided me with the confidence I needed so early in my teaching career and I felt proud to have had this impact on students. Upon further reflection, I considered the potential impact an instructor can have on a student. Instructors can be very influential figures at formative times in a student’s life with the ability to transform thoughts on topics that may be close to their hearts. Certainly, not every student will be impacted to such a high degree but this feedback made me realize that the responsibility an instructor has as a role model is not to be taken lightly.

**BCIT- small classroom**
I had the misconception that as students of a technical school, my audience may not be as receptive to the detail that I was used to giving to medical students. I was completely wrong on this account. This group of about 30 radiology students made it clear that they could handle a lot more information that I had prepared for them and their evaluations of the lesson reflected this.

BCIT student #1:
This was a great experience for me to learn about the problems that an instructor can encounter when making assumptions about their student audience.

**Literature**

Below are examples of literature in the field of higher education that had an impact on the way that I teach:

Bain, Ken. What the Best College Teachers Do. Cambridge Massachusetts: Harvard University Press, 2004
**Summary:** Bain conducts a thorough investigation of what defines a successful university instructor and closely examines a cross-section of individuals who fit the parameters of the definition. Bain and his researchers explore six areas that they found lead to success:

- What they know and understand
- How they prepare to teach
- What they expect of their students
- What they do when they teach
- How they treat their students
- How they check their progress and evaluate their efforts

Participants in the study showed common attributes in regards to these six categories. Bain also shares various anecdotes of teachers who are not considered successful and compares and contrasts their attitudes toward education with those who were in the study.

**Assessment:** This book was based on a study of three-dozen teachers from a cross section of disciplines from medical-school faculties to undergraduate departments. After extensive interviews with students and colleagues, classroom and laboratory observation, and examining course materials, Bain concludes that the quality of teaching is measured not by whether students pass exams but whether they retain the material to such an extent that it influences their thoughts and actions. This is a common theme in the active learning movement. All of the articles that have caused a paradigm shift in my attitudes toward teaching have had an element of giving and expecting more of a university education. This book confirmed for me that a learner-centered education is not only possible - it’s imperative.

**Reflection:** Reading this book resulted in reflection on my university education. After finishing an undergraduate degree, I concluded that my professors were all-knowing science deities that had very little responsibility for my learning. This concept is common in my generation and comes from an experience of lecture-based, traditional teaching. Since reading this book, my feelings toward the responsibilities of an instructor have changed dramatically. Bain gives numerous examples of the benefits of learner-centered instruction and questions long-standing traditions that harm student development rather than fostering it. I’ve taken away an appreciation for the type of environment students thrive in, what motivates them, and how to best assess and evaluate their learning.

**Holtzman, M. Demystifying application-based multiple-choice questions.** College Teaching. Vol. 56 No. 2, Spring 2008 114-120.
Summary: Mellisa Holtzman raises the issue of how to test large introductory courses with a multiple-choice question exam that has application-based problems. In other words, an exam that requires a higher order of performance other than simple recall. Repeatedly, Mellisa Holzman was receiving feedback from her students that her exams were “tricky” and “too wordy” and therefore “too difficult to understand”. Holtzman realized that the students were struggling mostly with the difficulty posed by application questions. The questions that were the most difficult for the students dealt with recognizing concepts in context. She appreciates that although the students may understand the concepts being addressed, they need direction and practice in recognizing information within a context.

Holtzman introduced course modifications that showed significant improvements to her students’ grades and their feelings toward her course.

First, a series of quizzes were introduced. The quizzes were designed to acclimate students to the type of questioning that would show up on their exam.

Next, Holtzman would use the previous quiz as an example in a “how-to” lecture. This lecture was dedicated exclusively to a dissection of the quiz questions in order to equip them with the recognition skills needed to answer the questions correctly.

Lastly, she required the students to work on their own application-based question. She considered the best practice for answering these types of questions is being able to write them. She had the students pass around their questions for other students to critique which allowed them to get feedback and exposure to a variety of application-based multiple choice questions.

With these new additions to her course, Holtzman saw a significant improvement to her students’ grades, grade distributions and a decrease in complaints. She makes a compelling argument that with proper instruction, it is possible to assess higher order thinking with a multiple-choice test.
Assessment: Most instructors would agree that multiple-choice questions are a handy tool for examining a large course. Much of the literature on multiple-choice questions suggests that there are many pros and cons that accompany this assessment method. This article addresses two lingering questions. 1. Can multiple-choice questions legitimately assess the ability of students to comprehend rather than just recall? 2. How do you prepare students for this type of multiple-choice question?

Holtzman challenges her students to perform at a higher order in Bloom’s Taxonomy rather than recognizing and recalling the correct answer. The student feedback indicates to her that the students are struggling with this challenge. In modifying her course she is able to give students the guidance and skill that they need to succeed in her course and subsequent courses. She makes the critical point that it is only possible to ask and get more of students if you, as an instructor, are willing to give more.

Reflection: Before reading this article, I associated higher order categories of Bloom’s Taxonomy with essays, dissertations or oral exams. I was in doubt that a multiple-choice question could assess more than simple memorization. Mellisa Holtzman proves that it is possible to assess students with an application-based multiple-choice question. Throughout the article there is an underlying theme of instructor/student balance. If rote memorization is the goal of a course, passive learning and simple recall is a proper assessment method. A low amount of effort from the instructor = a low amount of effort from the student. If comprehension and application is the goal of a course, active learning and application skills are necessary for success. Holtzman shows that the investment that she made in course modification “continues to be worth the effort”. She is convinced (and so am I) that her students are better prepared for a variety of subsequent courses.


Summary: This article contains a number of significant points about how students learn and the ineffective job that American universities do in addressing their needs as learners. The extensive research revealed that only 35% of faculty strongly emphasize their institution’s curricular goals. Only 12% utilize feedback from earlier students, and 8% use the viewpoints of experts in instruction. Although the faculty claimed that
effective thinking was their primary educational purpose, their course goals indicated otherwise. Over 4,000 goals submitted related to teaching concepts in their disciplines rather than developing the intellectual skills they claimed were important. Gardiner emphasizes the importance of active learning in fostering retention of information, application of knowledge to new situations, and development of higher-order thinking skills. He claims that discussions foster this learning much better than lectures do, however, 70-90% of professors use the traditional lecture as their primary instructional strategy. Gardiner offers an overall damning report for traditional teaching but gives hope and motivation to change.

**Assessment:** What makes this article so credible and powerful are the countless studies and associated data Gardiner presents. His beliefs about interactive learning echo [Ken Bain's research](http://jnelleyoung.wordpress.com/) and [Melissa Holtzman's teaching style](http://jnelleyoung.wordpress.com/). The goal of the paper is to emphasize the importance to change university learning before it's too late. He claims that if America does not get its "academic house in order" other systems of education will step in to do so and in some instances, have already begun.

**Reflection:** This article provided one of the first opportunities for me to reflect on many aspects of a university education. I considered the onus put on university students from the rigorous admission process to the financial cost, not to mention the life alterations it causes. Then I began to think about what a student is promised for this sacrifice - an education. But what does an education offer? Ideally, a student will leave university with a well-rounded base of knowledge and skills that will be useful in the workforce and in their everyday lives. Gardiner's observations of what learners need to be successful and what they are often provided with are very different. My own education mirrors Gardiner's reports. For the cost and effort, I have retained relatively little from my undergraduate education. Fortunately, this leaves me with the unique perspective of what doesn't work and how to change that in the way I teach.

**Growth**

In [Ken Bain's book "What the best College Teachers Do"](http://jnelleyoung.wordpress.com/), he emphasizes that mental models change slowly. I found this to be especially true when I was first introduced to pedagogical theories. On this page, I attempt to chart my growth as an instructor to record personal breakthroughs and the metacognitive process that led me to them.

Previous to attending the ISW and completing BIOL 535, I had a tendency to "teach as I had been taught". My idea of a university education came
from a traditional perspective. Success depended on the ability to recall facts and formulas and to meet deadlines. I viewed group activities as a potential for lazy students to take advantage of my hard work. I was often afraid to ask questions of my professors in case they were "dumb".

When first introduced to the Constructivist Theory of Learning, I was doubtful that its platforms would be practical in a real classroom setting. The idea of students having epistemological assumptions that prevent them from understanding made sense to me, but attempting to address all of them seemed a waste of time. With such a huge body of information to convey, I felt that there is no time for probing what obstacles to learning were in place. It took some solid discussion and reflection to understand that conveying a huge body of information to people who can not comprehend it is the real waste of time.

Although seeing the importance of changing mental models, I felt it was an impossible task. Equipped with my previous experiences of collaborative learning, I was unconvinced that it works. Nevertheless, I had the opportunity to try some new interactive techniques in a BIOL 153 tutorial. The student reaction to the lesson and the learning that took place were evidence that this method of teaching was much more beneficial than a traditional lecture.

My view of teaching changes with each new experience. I've gone from viewing the role of an instructor as a distributor of knowledge, to one of a careful facilitator. An instructor has the ability to support students through a process that leads to higher cognitive thinking and therefore, enlighten them.

Appendices

A. Essay for Killam Graduate Teaching Assistant Nomination
B. Curriculum Vitae
Appendix A.

Essay for Killam Graduate Teaching Assistant Award
J’Nelle Young

After five years as a Teaching Assistant in the Gross Anatomy Lab, I have come to recognize patterns amongst the medical students in regards to learning. Medical students are, without a doubt, an ambitious group. These students have jumped through some of the highest academic hoops available to the undergraduate population. In order to be admitted to medical school, they have had to consistently outperform their peers in undergraduate coursework, volunteering, research, etcetera. The criteria that medical students strive to meet is onerous in time and energy. A result of this rigorous agenda is that many students in medical school have learned to successfully “skim”. This is the best way I have to describe the method of consuming only the information that an individual views as useful and reproducing it for an exam. Having never been able to acquire this skill, I am amazed that students can manage to do so well academically without investing their time into more of a deep, conceptual understanding of course material. What has clued me into this practice of skimming is to experience students’ frustration when trying to apply it to their first course in Medicine- Gross Anatomy. A large percentage of students in the course are mostly concerned with identifying structures. Some hurry through their dissections so they can tick the box that they had completed this task of the week. When it comes time to apply these terms to a real-life example of anatomy, they fail. Humans are so varied that to understand how a human body is designed, higher order levels of comprehension are required. In order to teach these students who have previously relied on “skimming” to learn, I have taken a number of steps to encourage a deep understanding of anatomical concepts. Firstly, I attend a meeting every week called the “Anatomy Club”. This club is comprised of instructors and teaching assistants in the gross anatomy lab. The purpose of the club is to allow new teaching assistants an opportunity to practice the dissection before the lab and become comfortable with the material being presented. These sessions are valuable for me in two ways. Firstly, they are an opportunity to practice my teaching skills to a group of peers and to improve on explanations of the material that may be unclear. Secondly, I view this as an opportunity to arm the other teaching assistants with a heads up in regards to common obstacles that the students run in to year after year. Secondly, I attempt to engage students in active learning in the lab. Rather than simply identifying structures that are on their to-do lists, I try to push the boundaries of their comprehension. I ask them thought-provoking questions about the structures they are dissecting to allow them to see how important the material will be to their careers as practitioners. Finally, I attempt to create an environment for students to feel comfortable to make a mistake or be able ask me anything – even if they think it’s a stupid question. I try to inspire them with my enthusiasm for Gross Anatomy, especially as the demanding semesters begin to take their toll.

http://jnelleyoung.wordpress.com/
I have found that by employing these simple methods, students who have fallen into the bad habits of “skimming” become quite receptive to learning that will have long lasting benefits.
Appendix B
Curriculum Vitae

J’Nelle Young

2350 Health Sciences Mall
Vancouver, BC
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Research Interests: Clathrin-mediated endocytosis, intercellular junctions, cytoskeletal remodeling.

Education:

BSc Biomedical Sciences, Grand Valley State University, Allendale, MI 49401
September 1999-May 2003

Ph.D Candidate Cell and Developmental Biology, University of British Columbia, Vancouver, BC V6T 1Z3
September 2007-present

Abstracts/Presentations:

J’Nelle Young, Marc De Asis, Julian Guttman, A. Wayne Vogl. Cortactin knockdown reduces tubulobulbar complex length (2011) Poster presentation at the international ASCB conference in Denver.

J’Nelle Young and A. Wayne Vogl. Multi-tasking focal adhesion protein zyxin is present at tubulobulbar complexes (2011) Poster presentation at the international FASEB conference in Washington, DC.

J’Nelle S. Young and A. Wayne Vogl. Rab 11 is associated with nectin 2 positive vesicles in sertoli cells at newly forming adhesion junctions with early elongating spermatids in rat testis (2010) Poster presentation at the international FASEB conference in Anaheim.


J’Nelle Young, Marc De Asis. Julian Guttman, Wayne Vogl (2008) Tubulobulbar Complexes are Intercellular Podosome-like Structures that Internalize Intact
Intercellular Junctions During Epithelial Remodeling Events in the Testis. Poster presentation at annual ASCB conference in San Francisco.


**Publications:**


**Teaching:**

**Teaching Assistant**

**University of British Columbia Faculty of Medicine**  
Vancouver, BC, September 2007- present  
Fundamentals of Body Design – Gross anatomy component  
~360 first-year medical students/ 3 hours per week  
Brain and Behavior – Head and Neck Gross Anatomy  
~300 second-year medical students/ 6 hours per week

**University of British Columbia Faculty of Dentistry**  
Vancouver, BC September 2010 – December 2010  
DHYG 310 - Prepared and taught a two-hour review in gross anatomy for 22 dental hygiene students on local anesthetic nerve blocks.  
DHYG 206 - Assisted course instructor with set-up and implementation of review on head and neck anatomy
Vancouver, BC September 2011-December 2011
Fundamentals of Body Design- Gross anatomy component
~40 first-year dental students/ 3 hours/week

Guest Lecturer
University of British Columbia Zoology Dept.
Vancouver, BC November 2008 and November 2009
BIOL 153 - Prepared and delivered a one-hour lecture on pelvis and perineum to a classroom of 150 undergraduate students.

British Columbia Institute of Technology
Vancouver, BC April 2010
Prepared and delivered a one-hour lecture on pelvis and perineum to a classroom of 25 radiology students.

Teaching Dossier
http://jnelleyoung.wordpress.com/
*Includes teaching philosophy, large classroom experience

Work Experience
Laboratory Services Representative
Spectrum Health
Collection of blood from patients and analysis for diagnostic purposes

Tour Guide:
Museum of Anthropology
Vancouver, BC March 2007-2010
Facilitated cultural awareness while conducting private tours of groups from one to forty people through the museum’s galleries.

Volunteer Experience:

Scientists and Innovators in Schools (Science World)
Vancouver, BC, September 2008-2010
Created and presented a one-hour, interactive lesson on the heart suitable for children between the ages of 8-12.
Have given lesson to over 200 students in the Vancouver area.
http://www.scienceworld.ca/scientists_in_schools.html

WISH drop-in centre:
Vancouver, BC, September 2010-May 2011
Duties include various tasks including serving meals to marginalized women who practice high-risk behavior on the Downtown East Side.

Professional memberships:

http://jnelleyoung.wordpress.com/
American Association of Anatomists
American Society for Cell Biology

Prizes and awards:
Graduate Entrance Scholarship (University of British Columbia) 2008
Four-Year Fellowship 2009
Pacific Century Graduate Scholarship 2010
American Society for Cell Biology (ASCB) Predoctoral Travel Award 2011

References:
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