



UNIVERSITY OF
CALGARY

CERTIFICATES IN UNIVERSITY TEACHING AND LEARNING

Postdoctoral Scholars

Year-end Report, July 2018

Introduction

The Postdoctoral Scholar Certificate in University Teaching & Learning is a flexible and comprehensive program that helps postdoctoral scholars develop a reflective, evidence-based, and theoretically-informed approach to teaching and learning. In this certificate program postdoctoral scholars explore cutting-edge teaching and learning practices, experiment with the latest learning technologies, prepare for competitive job markets, and build connections with fellow postdoctoral scholars across campus.

The Taylor Institute for Teaching and Learning offers five teaching development programs, through which postdoctoral scholars can earn a digital badge as recognition of their achievement. Postdoctoral scholars who earn all five digital badges complete the Postdoctoral Scholar Certificate in University Teaching and Learning.

The five teaching development programs are:

- 1 Emerging Teachers Development**
- 2 Scholarship of Teaching and Learning (SoTL) Foundations**
- 3 Learning Spaces and Digital Pedagogies**
- 4 Theories and Issues in Teaching and Learning**
- 5 Developing Your Teaching Dossier**

By the end of the certificate program, postdoctoral scholars have:

- Engaged in collaborative, critically reflective conversations with colleagues to explore current issues, theories and research in postsecondary education
- Identified and implemented research-informed teaching methods that enhance participant learning
- Practiced peer teaching, and collecting and responding to feedback from colleagues
- Articulated a research question and developed a plan to conduct a SoTL project
- Evaluated and selected effective learning technologies and maximize spaces to enhance participant learning
- Developed a teaching philosophy/dossier that aligns key beliefs about teaching and learning to sources of evidence drawn from participation in the certificate program

*All postdoctoral work included as exemplars in this report has been approved for inclusion by the postdoctoral scholars.

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Workshops by the Numbers

Workshop registrations

	Overall	Unique
Arts	76	14
Cumming School of Medicine	113	35
Environmental Design	0	0
Haskayne School of Business	0	0
Kinesiology	66	10
Law	0	0
Libraries and Cultural Resources	0	0
Nursing	34	1
Nursing Qatar	0	0
Schulich School of Engineering	88	28
Science	163	35
Social Work	0	0
Taylor Institute for Teaching and Learning	36	3
Veterinary Medicine	13	4
Werklund School of Education	19	1
Other	21	6
TOTAL	629	134

Of the 134 unique postdoctoral scholars, only 14 indicated they are currently teaching. The teaching experience of the postdoctoral scholars in the workshops ranged from never having taught ($n = 33$) to greater than 10 years of teaching experience ($n = 4$).

Teaching experience	N
Not yet	33
< 1 year	15
1-3 years	29
3-6 years	24
6-9 years	15
10 + years	4



Emerging Teachers Development

The Emerging Teachers Development Program offers a series of workshops for postdoctoral scholars interested in developing their university teaching, with opportunities for discussion, practice, and reflection. Postdoctoral scholars who complete a minimum of five workshops in this program, and write and submit a reflection that demonstrates their learning from participation in the workshops are eligible to earn the Emerging Teachers Development badge.

Emerging Teachers Development by the Numbers

	Overall
Arts	1
Cumming School of Medicine	1
Environmental Design	0
Haskayne School of Business	0
Kinesiology	2
Law	0
Libraries and Cultural Resources	0
Nursing	1
Nursing Qatar	0
Schulich School of Engineering	1
Science	5
Social Work	0
Taylor Institute for Teaching and Learning	0
Veterinary Medicine	0
Werklund School of Education	0
Other	0
TOTAL	11

Reflective statements

To complete the Emerging Teachers Development program, postdoctoral scholars write a summary reflective statement identifying what they learned, how they would apply it, and how their beliefs about teaching and learning are developing. Below is an exemplar from a postdoctoral scholar's reflective statement.

"... there are two factors that I believe have drastically changed for me over the course of these workshops. First, and most general, I have become much more reflective in my teaching strategies and philosophies. I feel I have a better understanding of the importance of reflecting on what worked, what didn't work, and always striving to improve my delivering and student engagement during instructing and mentoring. Moreover, this is not a simple process that can be done at times of academic review, but **MUST** be continually engaged in. Second, and more specifically, my initial mindset was very focused on a simplistic and summative teaching assessment. However, following these workshops I feel that is it not only very important for the student, but myself as the teacher, to gain feedback throughout the learning process in a formative manner. This type of assessment can be useful in understanding how my students are learning the material and what I can do to improve this on the fly."

Dylan Kobsar, Postdoctoral Scholar, Faculty of Kinesiology



Scholarship of Teaching and Learning Foundations

The Scholarship of Teaching and Learning (SoTL) Foundations Program invites postdoctoral scholars to join discussion-based sessions focused on foundational SoTL readings, participate in their choice of workshops, and draft a preliminary SoTL plan. Postdoctoral scholars learn about scholarly, evidence-based approaches to student learning and teaching, and have the opportunity to reflect and build upon their own teaching and learning experiences.

Scholarship of Teaching and Learning Foundations by the Numbers

	Overall
Arts	1
Cumming School of Medicine	8
Environmental Design	0
Haskayne School of Business	0
Kinesiology	2
Law	0
Libraries and Cultural Resources	0
Nursing	1
Nursing Qatar	0
Schulich School of Engineering	2
Science	5
Social Work	0
Taylor Institute for Teaching and Learning	0
Veterinary Medicine	1
Werklund School of Education	0
Other	0
TOTAL	20

SoTL plans

Postdoctoral scholars are asked to engage in a meaningful way with a question about teaching and learning that piques their curiosity. They draw from their methodological training and teaching and learning experiences to develop a SoTL plan. Below are exemplars from postdoctoral scholar's SoTL plans.

Proposed title: Enhancing student engagement in an undergraduate research methods course

Research questions:

- What are students' perceptions of engagement in introductory research methods courses?
- How can an introductory research methods course be redesigned to facilitate greater students' engagement?
- Can providing learners with increased application, including some flexibility and control of learning material, enhance engagement and learning?

Leigh Gabel, Postdoctoral Scholar, Cumming School of Medicine

Proposed title: Using virtual reality in neuroscience education

Research question: Do students come to understand complex concepts in neuroscience education, specifically neuroanatomy and neurotransmission, more easily if the concepts are explained using three-dimensional virtual reality systems and/or two-dimensional animated videos?

Toni-Lee Sterley, Postdoctoral Scholar, Cumming School of Medicine



Learning Spaces and Digital Pedagogies

The Learning Spaces and Digital Pedagogies Program offers a series of workshops for postdoctoral scholars interested in learning about how learning spaces and digital pedagogies can be integrated in teaching practice. Postdoctoral scholars who complete a minimum of four workshops in this program, as well as an online exercise, are eligible to earn the Learning Spaces and Digital Pedagogies badge.

Learning Spaces and Digital Pedagogies by the Numbers

	Overall
Arts	1
Cumming School of Medicine	1
Environmental Design	0
Haskayne School of Business	0
Kinesiology	1
Law	0
Libraries and Cultural Resources	0
Nursing	1
Nursing Qatar	0
Schulich School of Engineering	1
Science	4
Social Work	0
Taylor Institute for Teaching and Learning	0
Veterinary Medicine	1
Werklund School of Education	0
Other	0
TOTAL	9

Developing a learning activity

Postdoctoral scholars are asked to design a learning activity that is posted online for peer sharing and feedback. Below is an exemplar from a postdoctoral scholar's learning activity created as part of this badge program.

Interactive 2D game design

"This game could be to introduce the Critical Zone to students. I am designing a course called "Critical Zone Science Field Course" where students are required to demonstrate the key components of the critical zone and use technology for public outreach. In this assignment, students will create a video, game, and online-story board to engage the public in Critical Zone science. Thus, this game will provide an example to the students, contributing to these learning objectives. I posted this game online as an educational game, so anyone can learn more about the Earth's Critical Zone. The online the learning objective was to identify and locate the five elements of the critical zone."

KC Clark, Postdoctoral Scholar, Faculty of Arts



Theories and Issues in Teaching and Learning

In this cohort-based program postdoctoral scholars explore research about how learning happens, discuss how to plan lessons that enhance learning, focus on how to give and receive high quality feedback, and design a learning activity for the group that address a current theory or issue in teaching and learning in higher education.

Theories and Issues in Teaching and Learning by the Numbers

	Overall
Arts	3
Cumming School of Medicine	4
Environmental Design	0
Haskayne School of Business	0
Kinesiology	2
Law	0
Libraries and Cultural Resources	0
Nursing	1
Nursing Qatar	0
Schulich School of Engineering	2
Science	7
Social Work	0
Taylor Institute for Teaching and Learning	0
Veterinary Medicine	0
Werklund School of Education	0
Other	0
TOTAL	19

Developing a lesson plan

In this badge program, postdoctoral scholars plan, lead, and receive feedback on a learning activity about a theory or issue in higher education. Below are two examples of lesson plan created by postdoctoral scholars.

Lesson title: Classroom assessment techniques

Learning objectives: attendees should be able to:

- Describe the aim of classroom assessment techniques, and
- Identify a specific classroom assessment technique they have used in the past or could use in the future

Learning activities:

- Small group activities to identify barriers and facilitators to implementing different classroom assessment techniques
- Think-pair-share

Christine Michaels-Igbokwe, Postdoctoral Scholar, Cumming School of Medicine

Lesson title: Multiple views on multiple choice exams

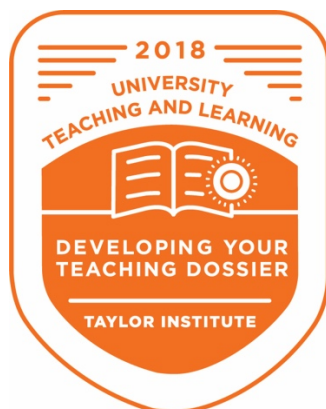
Learning objectives: By the end of this session participants will be able to:

- List and explain some strengths and weaknesses of multiple choice exams
- Explain at least one alternative method of delivering multiple choice exams

Learning activities:

- Evaluate participant views on multiple choice exams through a line-up icebreaker
- Brainstorm pros and cons of multiple choice exams from both the students and instructors perspectives
- Mediated forced debate

Nick Strzalkowski, Postdoctoral Scholar, Cumming School of Medicine



Developing your Teaching Dossier

This intensive, cohort-based series, postdoctoral scholars develop teaching philosophy statements and learn how to integrate them with artifacts of teaching and learning into a dossier format. Working sessions support postdoctoral scholars throughout the process, while peer review sessions provide opportunities to give and receive feedback for further dossier edits and development.

Developing your Teaching Dossier by the Numbers

	Overall
Arts	1
Cumming School of Medicine	6
Environmental Design	0
Haskayne School of Business	0
Kinesiology	2
Law	0
Libraries and Cultural Resources	0
Nursing	1
Nursing Qatar	0
Schulich School of Engineering	2
Science	7
Social Work	0
Taylor Institute for Teaching and Learning	0
Veterinary Medicine	0
Werklund School of Education	0
Other	0
TOTAL	19

Teaching philosophy statements

By the end of the Developing your Teaching Dossier badge program, postdoctoral scholars create organized, integrated, and cohesive dossiers that highlight their current (or future) teaching practices. Below are two exemplars from postdoctoral scholars teaching philosophy statements.

“I reflected on my own experiences as a student and realized that there were teachers that I had looked up to, and I wanted my future students to say the same about me. I was not naïve enough to expect it would be easy to become that teacher, and in the ten years since then I have used mentors, teaching workshops, books, and my own teaching experiences to develop skills toward achieving this goal. However, I rely on the student perspective to develop my teaching philosophy: Great teachers have contagious energy, emphasize the thought process over correct answers, and invest in student success.”

Lauren Benson, Postdoctoral Scholar, Faculty of Kinesiology

“Teaching is an important component of my academic life. I have taught undergraduate and graduate courses and have found both to be gratifying. With undergraduates, I have introduced basic concepts of brain imaging and witnessed students develop a passion for it. For graduate students, teaching advanced methods and professional skills has led to many fascinating discussions which ultimately benefits my own research and knowledge. I believe that good teaching is underpinned by two pillars: first, that the use of different approaches to convey important concepts is essential, and second, that critical thinking must always be encouraged.”

Rebecca Williams, Postdoctoral Scholar, Cumming School of Medicine

Certificate Completion

Completion numbers

	Overall
Arts	1
Communing School of Medicine	0
Environmental Design	0
Haskayne School of Business	0
Kinesiology	1
Law	0
Libraries and Cultural Resources	0
Nursing	1
Nursing Qatar	0
Schulich School of Engineering	1
Science	4
Social Work	0
Taylor Institute for Teaching and Learning	0
Veterinary Medicine	0
Werklund School of Education	0
Other	0
TOTAL	8

Evaluation data

A total of 33 postdoctoral scholars completed badge level evaluation surveys. The following table demonstrates their perceptions of the program.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
I feel MORE prepared for my current and/or future teaching, learning and research experience due to my participation in the program workshops		1	2	11	19
I WILL BE able to apply the material presented and discussions in the program workshops to my future teaching, learning and research experiences		1	3	10	19
Overall, the program workshops met (or exceeded) my expectations	3		1	15	14

"I believe that I will benefit from the network of people that I have met in these seminars in past months. Every person brought a unique view on the theories and issues behind teaching and learning. I have established professional relationships with several colleagues, which I would not be able to make easily otherwise."

Jiri Hostas, Postdoctoral Scholar, Faculty of Science

"I really enjoyed the certificate program and have recommend it to MANY trainees. I think the format and content of these badges is excellent and is a great example of how to provide this training for other institutions. I'm grateful to have been able to participate."

Nick Strzalkowski, PhD, Postdoctoral Scholar, Cumming School of Medicine

Scholarly Dissemination

Manuscripts under review

Nowell, L. Hayden, K.A., Berenson, C., Kenny, N., Chick, N., Emery, C. (in review) Professional learning and development of postdoctoral scholars: A scoping review protocol. Manuscript submitted for publication (in review, *Systematic Reviews*. SYSR-D-17-00348)

Nowell, L. Ovie, G., Berenson, C., Kenny, N., Hayden, K.A., Emery, C.(in review) Professional learning and development of postdoctoral scholars: A systematic review of the literature. Manuscript submitted for publication (in review, *Review of Educational Research*)

Nowell, L., Grant, K., Berenson, C., Dyjur P., Jeffs, C., Kelly, P., Kenny, N., Mikita, K. (in review) Innovative certificate programs in university teaching and learning for graduate students and postdoctoral scholars. Manuscript in preparation (in review, *Innovative Higher Education*)

Manuscripts in Preparation

Nowell, L. Ovie, G., Berenson, C., Kenny, N., Chick, N., Hayden, K.A., Emery, C.(2018) A literature review of professional learning and development initiatives for postdoctoral scholars. Manuscript in preparation (to be submitted to *Review of Higher Educational*)

Peer-Reviewed Conference Presentations

Grant, K., Nowell, L., Mikita, K., Berenson, C. Building SoTL communities through cohort-based graduate student and postdoctoral teaching development programs. Submitted for presentation at the Symposium on Scholarship of Teaching and Learning. Banff, AB November 8-10, 2018.

Grant, K., Nowell, L., Mikita, K., Berenson, C. New cohort programs, new communities of learning: How graduate student and postdoctoral teaching development can impact learning cultures. Accepted for presentation at the 2018 International Society for the Scholarship of Teaching and Learning Conference: Toward a Learning Culture. Bergen, NO, October 24-27, 2018.

Nowell, L., Kenny, N., Berenson, C. Understanding and supporting professional learning and development of postdoctoral scholars with a specific focus on teaching and learning. Presented at the Conference of the Society for Teaching and Learning in Higher Education. Sherbrooke, QB, June 19-22, 2018.

Grant, K., Nowell, L. Real needs, authentic tasks: New teaching development certificates. Presented at the 2018 University of Calgary Conference on Postsecondary Learning and Teaching "Students as Creators, Drivers, Innovators and Collaborators". Calgary, AB, May 1-2, 2018.

Research funding

Exploring the connections between postdoctoral scholars teaching development and student learning (\$39,945) University of Calgary Teaching and Learning Grant

Lessons Learned

Feedback from Educational Development Staff

What worked?

- Flexibility
- Collaboration and leveraging the strengths of the EDU
- Web presence and marketing
- Encouraged the development of new workshops
- Community development amongst participants
- Gathering useful feedback

What needs to be tweaked?

- Timing and scheduling of workshops
- Planning for growth and streamlining of workshops
- Process pieces (registration, tracking, and evaluation)
- Adding certificate contact details to registration pages for workshops that count towards badge/certificate completion
- Clearly identifying which workshops count towards badges and certificates
- Adding blended components
- Opportunities for co-facilitation and attending others workshops

Feedback from Participants

What worked?

- Highly engaging learning activities
- Important conversations about how to focus on student learning, not just teaching
- Ability to form relationship with peers from across campus
- Able to identify how to use concepts in current and future teaching
- Receiving direct feedback on my teaching
- Incorporating evidence into workshop content

What needs to be tweaked?

- Incorporating more flexibility for completion (offering each required option more than once)
- Include flipped/blended components
- More opportunities to lead learning activities/peer teaching
- Scheduling of mandatory workshops
- More content and less group work
- Incorporating more evidence into workshops

