

TEACHING FELLOWS PROGRAM REPORT

SPRING/SUMMER 2017



Western



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TEACHING FELLOWS PROGRAM

The goal of the Teaching Fellows Program is to enhance teaching innovation and quality at Western by bringing together a cohort of outstanding faculty members to provide educational leadership to their respective Faculties and the wider campus community. Each of the Fellows develops, implements, and assesses the impact of a unique teaching innovation. They also support educational excellence within their own Faculties by mentoring colleagues, coordinating workshops, facilitating learning communities, and providing other instructional development opportunities. To achieve these outcomes, they receive a three-year secondment, funding to conduct their teaching innovations, and support from educational developers in the Teaching Support Centre (TSC). They also participate in a unique development opportunity, the Great Teachers Seminar, in which they engage in a three-day intensive collective learning process of shared information and experiences, self-reflection, and action planning as they explore diverse teaching strategies, innovations, instructional challenges, and solutions. By providing funding to create the Teaching Fellows Program, Western has affirmed its commitment to educational excellence as outlined in its Strategic Mandate Agreement (2012).

In a retreat in 2015, the Teaching Fellows developed a model of educational leadership that they felt guides the

work they do. They perceive their role as one of listening to their students and colleagues within their Faculties to determine the teaching and learning needs specific to that context (**Assessment**); based on this determination of needs, as well as consultation with other campus partners and the teaching and learning scholarship, they develop a vision for innovation and change and champion that vision (**Vision**); they build community by bringing together and collaborating with colleagues, leveraging their own and their colleagues' strengths to make change (**Collaboration**); they serve as mentors for others, creating further capacity for excellence in teaching and learning (**Mentorship**); and they advocate for innovation across the institution - and in some cases beyond the institution - including promoting the development of capacity in terms of institutional buy-in, resources, and recognition (**Advocacy**).

Foundational for their leadership is their passion for teaching and learning; their curiosity in how to further support their students' academic, personal, and professional growth; their creativity in thinking beyond the traditions of their disciplines, pushing boundaries, and developing and implementing change; their courage as reflected in their willingness to take risks and challenge assumptions; and their determination in pushing through challenges and bringing about change.

Since its inception in 2014, there have been two staggered cohorts of Fellows representing eight of Western's Faculties. Their impact on teaching and learning at Western and beyond has been remarkable. A summary of each of the Fellow's teaching and learning innovation and community engagement is outlined in the following pages.

Western's Teaching Fellows' Model of Educational Leadership



Belliveau, Borchert, Buchal, Gadanidis, McLean, Smeltzer, White, Dimitrov, & Meadows, (2015).

2014 COHORT



George Gadanidis (Education)

Teaching Innovation Project

There is a long-standing problem with mathematics that can no longer be ignored: for generations, young children have entered school mathematically curious, enthusiastic and capable only to develop as adults who typically dislike and avoid the subject. To help address this issue, George has developed a freely accessible online Math-for-Teachers textbook, [**What Will You Do in Math Today**](#) for teacher candidates in Western's new 2-year B.Ed. program which can also be used by teachers in the field. The textbook is designed to offer the pleasure of mathematical surprise and insight via classroom videos, interviews with teachers, animations, simulations, and interactive explorations. George has conducted extensive research on the impact of the textbook on teacher candidates and education instructors.

Community Engagement

George has been actively involved in a number of initiatives to bring his project to educators and students across Canada. For example, he has developed an online magazine called *Math + Code 'Zine* to provide ideas and resources for teachers and teacher candidates. Also, documentary-like videos he developed for the project will be hosted on TVO's teachontario.ca. George has been able to secure funding from a number of sources, including SSHRC and the Fields Institute, to expand his project and host a number of events for colleagues in Education, at Western, and around the world. For example, he has presented two Lunch and Learn sessions for Education faculty members and graduate students on *Coding in Mathematics Education* and *Blended Learning Strategies* to which he also invited teachers and educational leaders from the local school districts. He organized an international symposium on Math and Coding and has presented on his project at local, national, and international conferences. Further, he is in the process of publishing three articles on his project.

Publications about the project

- Gadanidis, G., Cendros, R., Floyd, L. & Namukasa, I. (2016). *Computational thinking in mathematics teacher education*. Manuscript submitted for publication.
- Gadanidis, G., Hughes, J., Minniti, L. & White, B. (2016). Computational thinking, grade 1 students and the Binomial Theorem. *Digital Experience in Mathematics Education*. [**Advance online publication**](#).
- Gadanidis, G., LeSage, A., Mamolo, A., & Namukasa, I. (in press). Designing courses for K-12 teacher candidates: A focus on mathematical and computational thinking. In D. Petrarca & J. Kitchen (Eds.). *Initial teacher education in Ontario: The first year of four-semester teacher education programs*. Canadian Association for Teacher Education.



Dan Belliveau (Health Sciences)

Teaching Innovation Project

Dan has developed an online program to support students in the critical, and often difficult, transition from secondary to post-secondary studies. The program, LegUp, introduces incoming first-year Health Sciences students to the discipline while giving them an opportunity to experience university-like expectations and develop a set of university-readiness skills to help them succeed at Western. Each weekly module contains relevant articles, videos, and engaging interactive tools to explore the various dimensions of Health Sciences and university life. Over the two years LegUp has been active, 225 Health Sciences students have engaged with the program. Research on the first year of the program shows that students who participated in LegUp have significantly higher grades in mandatory Health Sciences courses than non-participating students.



Dan has recently received funding from [eCampus Ontario](#) to further develop LegUp for students across Ontario.

Community Engagement

Dan actively supported faculty members in Health Sciences, at Western, and across Canada during his tenure as a Teaching Fellow. For example, he co-facilitated the Part-time Faculty Workshop in his Faculty; co-presented Educational leadership: Extending your teaching beyond your classroom as part of the Teaching Support Centre's Perspectives on Teaching Conference; and organized and co-facilitated two workshops for the

Society for Teaching and Learning in Higher Education's 2016 national conference: Succeeding Before You Start: Giving Students a "Leg UP" to University (with his Ph.D. student, Cortney Hanna) and (Teaching) Fellowship of the Ring: A Journey of Common Purpose to Lead Educational Change with other educational leaders in Ontario.





Sarah McLean (Medicine and Dentistry)

Teaching Innovation Project

To address increasing enrolments and limited resources, Sarah is developing and integrating online simulations into her lab courses. She has developed a series of 'choose your own adventure' experimental simulations for a third-year Medical Sciences course that helps students gain 'hands-on' anatomy experience in a virtual laboratory environment. She has also created an online rat dissection simulation for a fourth-year Medical Sciences lab course and is in the process of developing a digital human kidney model to be used in concert with the rat simulation. Sarah has conducted focus groups and surveyed students to get their feedback on the simulations for both quality assurance and research purposes and is in the process of preparing a manuscript for publication on this research.

2014
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Community Engagement

Sarah has offered two versions of a course on flipped classrooms within her Faculty, and, based on a needs assessment of faculty members in Medicine and Dentistry, a workshop series covering various aspects of technology-enabled learning (e.g., Videos, Vodcasts, and Podcasts for Just in Time Teaching; Best Approaches for Fully Online Courses). She is organizing a series of Teaching Swaps in which faculty members in Medical Sciences form a community of practice to meet regularly and discuss different pedagogical approaches that they have employed or are considering employing in their courses. Sarah has also presented on her innovations at both local and national conferences.





Bethany White (Science)

Teaching Innovation Project

Bethany has been developing adaptive online modules that will help individual students master learning outcomes for difficult but essential statistical concepts, setting them up for success in their Statistics courses. The foundation for this project was laid with the development of non- adaptive video and interactive modules for an online version of an introductory statistics course, a project funded by the Ministry of Training, Colleges, and Universities. To ensure these modules were pedagogically sound before adapting them for her Teaching Fellows project, Bethany conducted research on their impact on student learning. One article has been prepared and another is in preparation based on this research.



Community Engagement

In the Faculty of Science, Bethany organized the e-Learning in Science panel in which panelists discussed and demonstrated technology they use in their classes. She was also actively involved in an information campaign around the Technology-enhanced Learning Innovation Award, as well as providing feedback on applications to both the applicants and the review committee. She has also presented at numerous professional development sessions across the Western campus including sessions on flipping large classes for the Faculty of Engineering and clickers in the classroom for the Teaching Support Centre. Nationally, she organized two multi-day workshops on statistics education that themselves have resulted in Bethany facilitating other related workshops and writing newsletter articles.

Publication about the project

Songsore, E., & White, B. J. G. (2016). *Student accounts of the potential usefulness of statistics after an introductory online statistics course*. Manuscript in preparation.



Peter Ferguson (Social Science)

Teaching Innovation Project

Peter is working collaboratively with university librarians to design online modules that will support the development of Western students' information literacy skills, a critical literacy in our information driven society which is rarely systematically addressed in course curricula. He has inventoried best practices on technology-driven information literacy instruction at Western and at colleges and universities across North America; developed standardized course learning objectives based on the Association of College Research Libraries 2015 Information Literacy Competency Standards; established and implemented training programs on the new Standards and micro-learning for his module developers; and developed module scripts for those module developers.



Community Engagement

Peter has been an active advocate for explicitly integrating information literacy skills into the undergraduate curriculum, including presenting *Innovative Information Literacy Instruction: Possible in One Large Class but not One University?* at the Society for Teaching and Learning in Higher Education's 2016 national conference and *Information Literacy Instruction in a Large Institution Setting* as part of the Teaching Support Centre's 2014 Teaching with Technology Institute. He has also co-authored two academic papers on the impact of his curricular innovation on student learning.

Publications about the project

Ferguson, P. A., & Fyfe, B. (2016). *Evaluating alternate approaches to grey literature information literacy instruction*. Manuscript submitted for publication.

Fyfe, B., & Ferguson, P. A. (2016). *Critical success: Developing a collaborative, fully integrated information literacy approach for a Political Science curriculum*. Manuscript submitted for publication.

2015 COHORT



Angela Borchert (Arts and Humanities)

Teaching Innovation Project

Angela is developing an e-portfolio-based curriculum for the new Certificate in Intercultural Communication in the context of a community of practice in Modern Languages and Literatures. With e-portfolio templates, Arts and Humanities students will be able to create individual learning plans, demonstrate learning outcomes, and showcase creative critical thinking.

Community Engagement

Angela has arranged public events such as *Not Lost in Translation: Practicing Intercultural Communication* and workshops on intercultural communication for her department. She has involved students as integral members of her team who are engaged in all stages of her project. Her team participated in, and co-presented at, conferences such as McMaster University's Change Institute and their Summer Institute on 'Students as Partners', the Innovative Approaches to Second Language Teaching Conference, the Society for Teaching and Learning in Higher Education's 2016 conference (*Designing a Story of Learning: The ePortfolio as a Means to Co-create Curriculum in Intercultural Communication, Take a Walk on the WALs Side: Innovative Teaching in Western's Active Learning Space*), and the International Conference on the Development and Assessment of Intercultural Competence. She is also preparing an article on her project.



Publication about the project

Borchert, A., Caldas, N., Chiarelli, A., Ellis, P., Herra, A., & McGregor, M. (2016). *ePortfolio opportunities: Co-creating curriculum to foster intercultural communication competencies*. Manuscript in preparation.



Ralph Buchal (Engineering)

Teaching Innovation Project

Teamwork is a critical skill for most careers, but is an essential skill for professional Engineers. To support the develop of teamwork skills, Ralph has synthesized a model of collaborative knowledge building on accepted learning theories. Based on that model he evaluated tools designed to engage students in technology-based collaborative knowledge building (TbCKB), and has begun integrating the tools and corresponding collaborative pedagogy in design and project courses in Mechanical and Materials Engineering. He is also undertaking research to determine the impact of integrating TbCKB into his curricula on students' learning.



Community Engagement

Ralph prepared a report for the Western community, including administrators in Engineering and Information Technology Services and the senior administration, outlining the collaboration requirements for different segments of the university community (e.g., research, administration, teaching, clubs), evaluating the currently available options for TbCKB, and making recommendations for the campus-wide adoption of relevant technology. He is also mentoring colleagues in Engineering on the integration of TbCKB, and the use of the appropriate technologies, in their courses. Further, he is developing a community of practice on TbCKB, starting with colleagues in Engineering and expanding out to the broader Western community. Finally, he presented an interactive workshop at the Society for Teaching and Learning in Higher Education's 2016 conference (*Computer Supported Collaborative Knowledge Building*).





Sandra Smeltzer (Information and Media Studies)

Teaching Innovation Project / Community Engagement

International service learning engages students in their learning, helps them develop as global citizens, and provides real-world contexts to develop and apply skills that are critical for their future careers. Sandra's teaching innovation project takes the form of community engagement; she has formed and leads a community of practice for faculty members interested in enriching current international service learning and research. Topics addressed in events for this community include sessions on safety and security in service learning (*International SOS Information Session*), engaging host communities (*What about Host Communities?*), mental health (*Mental Health and International Pedagogy*), and developing critical reflection during study abroad and internationalization at home initiatives (*World Cafe: Promoting Self-Reflection Among Students*). She worked with colleagues in the Student Success Centre to create a database of international service learning courses, and document their design and organization to inform the development of new programs. She has also created community in her Faculty, organizing meetings of Information and Media Studies (FIMS) faculty members and staff involved with experiential learning to share resources and information, and organizing a panel session on experiential learning for all FIMS faculty members.

Further, Sandra has presented her work at conferences such as the Union for Democratic Communication and written an article for the journal *tripleC: Communication, Capitalism & Critique*. Finally, she is developing a new theory/praxis seminar course for the Faculty of Information and Media Studies that critically examines concepts and case studies of service learning and how they intersect with the field of media studies and communications.

2015
COHORT



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s illustrated in the previous pages, the Teaching Fellows have provided exemplary educational leadership in their teaching and learning projects and through their engagement with their Faculty colleagues as well as the broader Western community. They have determined the teaching and learning needs specific to their context; developed and championed a vision for innovation and change to address those needs; built community by bringing together and collaborating with colleagues in order to make the needed change; served as mentors for colleagues and created further capacity for excellence in teaching and learning; and advocated for innovation across the institution – and, at times, beyond the institution. As a result of these activities, as well as their passion, curiosity, creativity, courage, and determination, these educational leaders have enhanced teaching innovation and quality within their Faculties, at Western, and at the national and international levels.



2017 COHORT



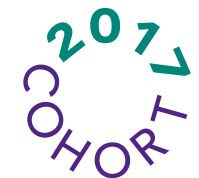
Immaculate Namukasa (Education)

Immaculate's project, *Incorporating Maker Activities in Teaching*, involves developing and facilitating interactive modules centred around maker activities (i.e., technology supported do-it-yourself activities in which participants create physical, sensory, and/or digital objects) for Curricular Studies in Applied Linguistics students and faculty. She will also coordinate workshops to support student learning through making as well as mentoring faculty members in integrating maker-based pedagogy into their curricula. Immaculate plans to create a maker community of practice by means of an online hub through which students and faculty members will share their maker products and experiences. Finally, she will research the impact of maker-based curricula on faculty members' teaching experiences as well as student learning.



David Walton (Health Sciences)

David's project, *Developing Capacity for Collaborative Team Integrated Competency-based Education*, focuses on designing the curriculum for a new one-year course-based Master's degree in Interprofessional Pain Management. This unique program will be the first collaborative team integrated competency-based (CTIC) graduate program in Pain Management in the world. As part of this project, David will define a CTIC curricular framework in consultation with academic colleagues, clinicians, policy-makers, and patients, as well as drawing on the current pain competencies frameworks and relevant research literatures. Using this framework, he will design competency-based learning outcomes and develop and implement pedagogical strategies and authentic assessments to achieve and evaluate those outcomes. The project will explore the impact of this curricular innovation on student learning as well as teaching within Western's School of Physical Therapy and the Faculty of Health Sciences. Finally, David will mentor colleagues in Health Sciences, and from the broader Western community, in CTIC curricular design through resource development, individual and group consultations, presentations, and workshops.



Tom Haffie and Lindi Wahl (Science)



Tom and Lindi's joint project, *Students as Partners in Science Education*, embeds undergraduate and graduate students into Science education as active and essential partners. To achieve this goal, Tom, Lindi, and interested students will develop the Student Fellowship in Science Education to engage a team of undergraduate Science students in educational projects of benefit to the Faculty. Tom and Lindi will also design and teach a new for-credit multidisciplinary course on the theory and practice of science education. Experiential learning will be a foundational component of the course in the form of community engagement with Science faculty members to address challenges in science education at Western.



Tom and Lindi will develop a graduate-undergraduate student mentoring program, to support undergraduate students through their educational experiences as well as promoting the development of important leadership and mentorship skills for graduate students. With the Student Fellows as co-researchers, Tom and Lindi will assess the effect of these innovations on the participating students as well as the impact of the educational projects implemented by the Student Fellows and participants in the science education course on the Science curricula.

Our new cohort of Teaching Fellows continues the tradition of exemplary educational leadership, with innovations that will transform learning and teaching within their disciplines and beyond. The Western community will benefit immeasurably from their vision, creativity, mentorship, and advocacy.



Western

Teaching Support Centre

The D.B. Weldon Library, Room 122

Western University

London, Ontario N6A 3K7

(519) 661-2111 ext. 80346

uwo.ca/tsc | tsc@uwo.ca