2021 Small Teaching and Learning Exploration Grants & Priority Areas of Learning and Teaching Grants

Frances Tuer

Project title: *Do LinkedIn Learning Paths Enhance Student Interest and Workplace Confidence?*
Collaborators: **Jeannie An, Nidia Cerna, and Ines Perkovic**

Dr. Frances Tuer is an Assistant Professor in the Human Resource and Management Area of the DeGroote School of Business at McMaster University (Hamilton, ON, Canada). After a fifteen -year career in retail banking she earned her MBA from the Ivey School of Business at Western University (London, ON, Canada) and her Ph.D. in OB and HRM from McMaster University. Frances' research interests include teams, diversity and inclusion, and teaching with technology grounded in the Community of Inquiry model. Over the past five years, she has presented her research at the Academy of Management, Administrative Sciences Association of Canada, Canadian Society for the Study of Higher Education and Society for Teaching and Learning in Higher Education, Diversity in Organizations, Communities and Nations, and the Ubiquitous Learning and Education conferences. Frances is an award-winning educator who has taught a wide range of OB, Management and HRM courses across all four years of the undergraduate Commerce program as well as OB and HRM MBA courses.

Project Abstract:

The main objective of this project is to assess the impact of offering McMaster students the opportunity to build and pursue two LinkedIn Learning paths, as part of their academic program. Each learning path will focus on one area of academic/employability skills, specifically creative problem solving and persuasive communication.

The motivation for this project comes from several angles. One of the most important is McMaster University's "Forward with Flexibility" strategy, which seeks to make education and educational materials more accessible by following the principles of Universal Design for Inclusive Education (Flexibility, Accessibility, Variety, and Explicitness).

This project will benefit McMaster students by:

- Making students and instructors more aware and more open to alternate resources to complement traditional academic learning methods and materials.
- Increasing the variety and scope of content that students can access to personalize their learning journey.
- Providing McMaster students with micro-credentials that document and allow easy sharing of professional learning with instructors and other important stakeholders.
- Helping to attract students to McMaster University who value digital innovation and are open to new experiences.
- Helping employers see that McMaster University students possess up to date learning and relevant skills

Bosco Yu & Gerald Tembrevilla

Project title: *Evaluating and Enhancing the First-Year Engineering Experience Using Surveying, Experiential Learning and Gamified Active Learning Methods*

Collaborators: **Liza-Anastasia DiCecco, Dakota Binkley**

Dr. Yu obtained his BASc (2010) and MASc (2012) from the University of Toronto. For his Master's thesis, Dr. Yu conducted research on the design of cellular lattice materials for automotive impact attenuator applications. Following his MASc, Dr. Yu was grateful to receive a full scholarship (Croucher Cambridge International Scholarship) to pursue his PhD at the University of Cambridge, working at the Cambridge Centre of Micromechanics. During his doctoral research, Dr. Yu collaborated with Hexcel Corporation in the development of a new type of carbon fibre composite laminate with high impact resistance and damage tolerance, for use in airplane fuselages and other aerospace applications. He obtained his PhD in 2017.

After his graduate studies, Dr. Yu held a one-year postdoctoral fellowship at the University of Toronto (2017-2018) collaborating with the National Research Council Canada (NRC) and the Nuclear Waste Management Organization (NWMO) on developing a cold-sprayed copper coating with high toughness for use in nuclear waste storage applications. Dr. Yu joined McMaster University in 2018, working as a postdoctoral fellow and a sessional instructor. He helped investigate the mechanics of graded metal hybrids and additive manufactured heterogeneous cellular materials. During these two years, he was a successful co-applicant for a DFG grant and will be helping to organize an international conference focusing on biomaterials for trauma surgical applications. He has also served as a reviewer for the Journal of Materials Science and Nanotechnology and the Journal of Materials Research, and he is currently an editorial member of the journal Composite Materials.

Dr. Yu is passionate about teaching and sharing knowledge. During his two years of teaching experience as a sessional instructor, he explored an new engineering pedagogical approach ("Darwinian learning") that mimics genetic algorithms – where multiple groups of students working on a design project would collaborate both within and across groups, iterate new versions of the design, and compete to develop the design best suited to the application. This collaborative, iterative, and integrative approach has the potential to accelerate the pace of learning and enrich the experience of the students in the classroom.

In 2020, Dr. Yu was pleased to join the faculty at McMaster University as a teaching Assistant Professor (CLA). He is excited to be involved in the development of a new first year engineering curriculum and will be teaching the new first year course (1P13). He hopes to contribute to the transformation of engineering education so that students are well-equipped to face the challenges of the future in engineering, and can build core engineering competencies in a more self-motivated and confident manner in a diverse and inclusive learning environment.

Gerald Tembrevilla

Dr. Gerald Tembrevilla obtained his master's degree in Curriculum Studies in Physics and Science Education at Okayama University, Japan through a very generous scholarship funding from Sato Yo International Scholarship Foundation, Tokyo, Japan. Prior to this, he was a recipient of Japan's Ministry of Education, Culture, Sports, Science and Technology Teacher-Trainee Scholar's Program.

In November 2020, Gerald completed his Ph.D. in science (physics) education in the Faculty of Education at the University of British Columbia

(UBC), Vancouver, Canada as an International Student and UBC Department of Curriculum and Pedagogy scholar.

During his Ph.D. program, Gerald worked as a research specialist at the Center for Teaching, Learning, and Technology and the Institute for the Scholarship of Teaching and Learning at UBC. He attended several research fellowships in STEM education and technology design as a UBC Public Scholar Initiative and Mitacs-Canada Globalink Research Awardee, and as a UBC Go Global Scholar. These fellowships were hosted by the Graduate School of Education & Information Studies at the University of California in Los Angeles, the Faculty of Education at the University of Cambridge in England, and the Solid-State Physics & Physics Education Lab at ETH-Zurich, Switzerland.

Currently, Gerald serves as a postdoctoral fellow for the PIVOT, an interdisciplinary blueprint to transform undergraduate engineering students' learning experience in the Faculty of Engineering at McMaster University, Hamilton, Ontario, Canada.

Project Abstract:

The Faculty of Engineering at McMaster University has experienced a significant increase in undergraduate student enrolment over the past 14 years, with projections of even larger cohorts for future years. The challenges associated with increased class sizes demand changes to the way we practice education, moving away from traditional lecture-based courses to prioritize personalized, meaningful, and engaging learning activities. McMaster Engineering launched a transformative initiative, known as the Pivot, which reimagines the classroom as learner centered. The most recent academic year (2020-21) was the inaugural start of the Integrated Cornerstone Design Projects in Engineering (ENG 1P13), which created a new curriculum allowing for cooperative learning and the development of critical thinking skills through design-based projects and experiences. The implementation of this course was entirely virtual (due to the COVID-19 pandemic), where the classroom was altered to put learners in the driver's seat and accelerate their education through cooperative learning activities, interactive lessons, and group design projects.

The purpose of this research project is to further enhance the learning experience of students in the Pivot program, particularly by: (1) surveying ENG 1P13 students and upper-year cohorts to gain an understanding of the overall effectiveness of ENG 1P13; and (2) developing a gamified active learning approach for future teaching of materials science-focused content in ENG 1P13. This research will yield significant information regarding the implementation of experiential learning in large classrooms, suggest improvements for future iterations of the course, and offer insights that can be applied in furthering the Pivot approach in upper-level courses. Immediate outcomes of this work will help summarize best practice methodologies for implementing experiential labs, explore the development of new gamified methods anticipated to improve learner engagement, assess the quality of new engagement strategies used and learning experiences in ENG 1P13, and propose improvement suggestions for current lab experiences. Notably, with the implementation of the assessments described, we anticipate outcomes to include: (1) immediate and continual feedback on the effectiveness of ENG 1P13, (2) identification of areas of the course that need to be improved or modified for future course iterations, and (3) provide insights to student learning goals, which will be beneficial to all departments within the Engineering Faculty.

These objectives will be further met by the implementation of focus groups selected from survey users to gain a more in-depth understanding of the learning perceptions on experiential-based learning. Moreover, we anticipate that the gamified methods proposed will enhance learner engagement and experience and will be able to be adapted for a larger range of interdisciplinary projects within the engineering program.

Kyle Ansilio
Project title: *Building Continuity in Community-Engaged Programming*
Collaborators: **Beth Levinson, Abigail Hudecki**

Kyle is a McMaster University Engineering Physics graduate that works as an Educational Developer within the Faculty of Engineering. He is the lead for the MacChangers Program, a community-engaged co-curricular program that pairs multidisciplinary teams of students with community members to propose innovative solutions to community-defined priorities. He also developed the framework for the McMaster branch of the Grand Challenges Scholars Program, the first branch to launch at a Canadian institution, which seeks to support global leaders in developing the competencies necessary to meet the needs of our everchanging world. Currently, Kyle focuses on additional community-engaged and experiential education, such as the Pivot in Engineering. He is also a project manager for the faculty's micro-credential offerings, an emerging method of recognizing achievement that is complimentary or in addition to traditional education.
As part of the PALAT Grant, Kyle will be focusing on how best to support the continuity of student projects that focus on community priorities, such as those in the MacChangers Program or CityLAB Semester In Residence Courses. His goal is to develop and pilot a framework that prepares students to continue their work in either a curricular context, such as a final-year project, or in an independent context, such as such as a business startup. As a long-time participant in the MacPherson Institute Student Partner Program, Kyle will be collaborating with undergraduate students to develop a learner-centered framework that may be utilized across campus.

Project Abstract:

Community-engaged experiential education provides students with an opportunity to apply their disciplinary knowledge outside of the classroom. There are curricular options available to students, such as the minor degrees in Sustainability or Community Engagement programs, as well as co-curricular options, including the MacChangers Program. These offerings provide students with a fundamental understanding of how to navigate complex challenges in their surrounding communities and engage in a principled manner with the individuals who live with these challenges. For community-engaged ideas and projects conceptualized while students are enrolled, pursuing implementation can be very challenging with few projects continuing past the end of the academic term. Our objective is to develop a framework or standards of practice that eases the transition of projects from the university ecosystem into the community or start-up initiative. We will work with two graduates from the MacChangers Program that are collaborating within industry implementing the solution they conceptualized during the program. We will leverage their experience to answer the question: how might we best support students in implementing their community-engaged projects? The outcome(s) of this project will be a module or workshop that can be integrated into these existing offerings or delivered independently for students who are interested in how they might best pursue the continuation of their ideas. This content will be disseminated initially to participants in the MacChangers Program before being offered to other users.

Tara Packham

Project title: *Pursuing Excellence and Innovation in Applied Qualitative Health Research at McMaster University*

Collaborators: **Drs. Sandra Moll, Michelle Phoenix, Evelyne Durocher, Sandra Vanderkaay, Meredith Vanstone& Susan Jack**

Dr. Tara Packham is an occupational therapist and Assistant Professor in the School of Rehabilitation Sciences within the Faculty of Health Sciences. Her program of research uses mixed and multiple methodologies to address the complexities of pain, rehabilitation, and knowledge translation. Her teaching is situated in graduate training with the dual focus of professional preparation in occupational therapy as well as rehabilitation research.

Project Abstract:

Applied qualitative health research (AQHR) is increasingly used across health care disciplines to understand complex health conditions, health systems experiences, and to support implementation of innovations in health care. Methodological excellence in AQHR is grounded in high-quality training for graduate students and post-doctoral fellows, and ongoing skill development opportunities for research staff and faculty. However, formal and informal education and training offerings at McMaster are limited. We are proposing to conduct a needs survey to identify and prioritize the qualitative research training needs of graduate students, research staff, and faculty across the Faculty of Health Sciences (FHS) disciplines. Further, we will identify barriers and facilitators to timely training, sustained engagement and scholarship in AQHR within the FHS, and develop recommendations for potential solutions.

By identifying potential synergies and opportunities to strengthen interdisciplinary scholarship in qualitative health research methods across disciplines, schools and departments in FHS, this work will be foundational to positioning McMaster University as a leader in excellence for AQHR. It will identify potential innovations in training to support student success both within McMaster and in their future research endeavors. We anticipate our next step would be to use this information to engage in a co-design process to expand AQHR training opportunities with key stakeholders representing the areas of gap identified by the survey findings. Educational innovations may include expanded coursework options intended to bring together learners from across FHS, trans-disciplinary continuing education offerings for MacPFD, building infrastructure to support a network of communities of practice, and creating regular immersive interdisciplinary experiences (such as trainee ‘boot camps’) or other collaborative pedagogical innovations emerging from the co-design process.

Anita Acai
Project title: *Assessing the Quality of Narrative Comments in Psychiatry*
Collaborators: **Dr. Sheila Harms, Dr. JoAnn Corey, & Ms. Jillian Lopes**

Dr. Anita Acai is an Assistant Professor and Education Scientist in the Department of Psychiatry and Behavioural Neurosciences at McMaster University. She is an interdisciplinary researcher whose work combines qualitative and quantitative methods to understand and address issues related to physician equity and wellbeing. She also conducts research in the areas of assessment, learner engagement in classroom-based teaching sessions, and the scholarship of teaching and learning. Dr. Acai has been recognized for her contributions to teaching and learning in higher education through fellowships from the International Society for the Scholarship of Teaching and Learning (ISSOTL) and the Society for Teaching and Learning in Higher Education (STLHE). She is an elected member of the STLHE's Council of Fellows.

Project Abstract:

Postgraduate medical training programs around the world are transitioning to a new model of education, known as competency-based medical education (CBME). Under this new model, narrative comments, which often take the form of written comments on workplace-based assessments known as Entrustable Professional Activities (EPAs), constitute an important source of feedback and assessment data for medical learners (i.e., residents) and their programs. Existing literature and a pilot study conducted in the psychiatry residency training program at McMaster University have pointed to challenges with narrative comment quality prior to CBME implementation. However, limited evidence exists about the extent to which these challenges persist in a CBME context. The purpose of this project is to evaluate the quality of narrative comments provided on EPA assessments using two previously validated measurement tools. Focus groups with two competence committees in psychiatry, which use narrative comments to help contextualize other assessment data when evaluating residents' progress, will be used to further understand and expand upon the quantitative findings. We expect that the findings of this project will help inform future faculty development initiatives that can enhance the quality of the training experience for postgraduate learners in psychiatry. Moreover, given the lack of literature on the quality of narrative feedback in the era of CBME, we expect that this work will have broad appeal to other residency training programs and members of the medical education community beyond McMaster.

In addition to the positive impact on those working on the project (three faculty members and one student partner), we expect that this project will also positively impact residents and faculty within the Department of Psychiatry and Behavioural Neurosciences at McMaster. Specifically, we expect the findings to inform future faculty development initiatives that can be used to improve the quality of narrative assessments in the program and enhance the quality of residents' educational experiences. Future directions in this program of research will involve developing and evaluating the effectiveness of these faculty development initiatives.

Deborah DiLiberto

Project title: *Microcredentials in Global Health Education: Exploring the Potential for Capturing Professional and Transferable Skills*

Collaborators: **Dr. Christy Gombay, Adam Zvric**

Dr Deborah DiLiberto is an Assistant Professor of Global Health with the interdisciplinary Global Health graduate program and with the Division of Education & Innovation, Department of Medicine, in the Faculty of Health Sciences.

Deborah's educational research explores pedagogical approaches for developing students' interdisciplinary thinking and equity-informed research skills. She has several projects including evaluation of high impact learning strategies, increasing inclusion of underrepresented groups in academic curricula, experiential learning through global health research simulations, and microcredits in global health.

Deborah also has a program of research on complex health service interventions in low resource and humanitarian settings. Her research focuses on locally informed and participatory approaches to addressing adolescent sexual and reproductive health, and diagnosis and treatment of malaria. Deborah contributes to global health and higher education policy as a member of several institutional and international committees and consortia.

Deborah received her PhD and MSc from the London School of Hygiene and Tropical Medicine (LSHTM), UK, and a Bachelor of Arts & Science from the University of Guelph, Canada. She has also completed a Post-Graduate Certificate in Learning & Teaching and previously held Leadership in Teaching and Learning Fellowship through the MacPherson Institute for Leadership, Innovation & Excellence in Teaching at McMaster University. Deborah is an Associate Fellow of The Higher Education Academy.

Project Abstract:

The proposed project aims to address the challenge of defining, evaluating and presenting global health-related professional and transferable skills in a way that is understood by students, institutions and employers. These transferable skills are also known as 'professional', 'soft'or 'employable' skills, like critical thinking and emotional intelligence, and are suggested to endure and transcend changing marketplace demands. The MSc in Global Health (MSc GH) program is interested in exploring the use of microcredentials as an approach to consolidate, evaluate and credit transferable skills. Microcredentials are means of demonstrating assessed learning that is additional, alternate, or complementary to full academic qualification or degree. They are usually represented by online icons or graphics that serve as digital badges to indicate that a learner has successfully completed a learning experience from an accredited institution. This project aims to design, implement and evaluate a microcredential project for transferable skills in the MSc GH program. Results of the project will enhance the learning experience by providing students with an opportunity to reflect, consolidate and be credited for the development of their transferable skills. A microcredential framework and accreditation will provide an opportunity for students to orient their interdisciplinary learning journey and provide the motivation and confidence as they make the transition into the world of work.

The project has potential application to other courses with similar interdisciplinary and dynamic learning environments. At McMaster, this represents may programs at both the undergraduate and graduate levels. The literature review and lessons learned will help other programs determine if

microcredentials are appropriate for their learning outcomes and students. The evidence of impact can be used by other programs to generate implementation and financial support for microcredential initiatives from their departments and faculties.

Kaitlin Debicki

Project title: *Listening Together: Indigenous &Anti-Racist Pedagogies in McMaster's English and Cultural Studies Department*
Collaborators: **Clare-Marie de Souza**

Project Abstract:

This project seeks to follow up on the English and Cultural Studies Department's new commitment to social justice learning outcomes as they have outlined in their recent IQAP report. We ask: how might we empower undergraduate students to direct their own educational journeys towards anti-racist and anti-oppressive teaching and learning? How might we build infrastructure of support for non-racialized faculty who may wish to diversify their syllabi and teaching approaches but who do not have the experience to feel confident in doing so? How can we constructively address undergraduate complaints about racist educational experiences within the humanities without requiring said students to confront professors in positions of power over them? Lastly, how might a turn toward Indigenous, Black, and racialized reading, writing, listening, and communication practices help ECS meet our anti-racist program learning outcomes? What do these practices look like and how might we equip our faculty to include these practices even if they are not familiar with them personally? Following up on the ECS Department's commitment to anti-oppression and social justice learning outcomes, this project will: 1) review ECS syllabi for fidelity to anti-racist pedagogies; 2) compile an annotated bibliography of diverse course materials with a focus on Indigenous and Black thought (including non-alphabetic literatures such as wampum); 3) create an A2L website that will include a list of resources on anti-racist pedagogy, sample anti-racist lesson plans, assignments, non-punitive evaluation metrics, and potential university/community partners for praxis work; and 4) record a mini podcast series of interviews with both undergraduate students and BIPOC pedagogy experts.

Krista Madsen

Project title: *How long do learning gains last? Long-term retention testing in Musculoskeletal Anatomy*

Krista Madsen has been a Teaching Professor in the Department of Kinesiology since 2013 and has recently completed a term as a Visiting Scholar at Carnegie Mellon University in the interdisciplinary School of Design. Within the Faculty of Science, Krista helped develop guidelines for Departmental Teaching Evaluation Reports and was appointed as a mentor for the New Faculty Mentorship program. She was a member of the Provost's Fall Virtual Learning Task force, and a 2020 recipient of the President's Award for outstanding contributions to teaching and learning.
Krista is currently interested in novel methods of assessment, transformational leadership strategies, and the application of design thinking to learning experiences. She seeks opportunities to learn from faculty in other disciplines and loves to mentor graduate students as they develop into instructors. When Krista is not driving her kids to basketball and volleyball practices, she exercises and drinks dark coffee.

Project Abstract:

Many undergraduate courses are designed to create a foundation for subsequent courses, but the long-term robustness of this foundation can vary between students. While final grades may indicate how much learning has taken place within a term, learning can be expected to decay over time. Long-term retention testing can reveal the extent to which students take knowledge and skills forward for transfer into new courses.

The first objective for this project is to evaluate students' learning gain across one term of Musculoskeletal Anatomy (MSK) and the learning decay that occurs by the time students take the next course that builds from it. The second objective is to compare final grades with long-term retention test scores, to evaluate whether final grades can predict long-term retention. The third objective is to explore students' perceptions of their long-term learning and factors that may influence it. This mixed-methods, observational study will be grounded in cognitive learning theory. Students' grasp of core concepts and skills will be assessed with a course-specific test instrument. Testing will take place during the first and last weeks of class, to quantify learning gain. A third test will take place four months later, during the first week of a level III course; this will be used to quantify learning decay. Qualitative data regarding student perceptions of long-term retention will be collected by survey along with the third test. The findings of this study will inform curricular integration efforts and model a new assessment practice for other instructors.

Katie Moisse

Project title: *Visual Course Outlines in the Life Sciences Program*
Collaborators: Olivia Dong-Hamilton

Project Abstract:

Course outlines play a critical role in setting student expectations and supporting student success. In 2020, the Faculty of Science created a standard template for course outlines. The template includes key pieces of information, such as the contact information for instructors, the course schedule and format, assessment descriptions and deadlines and policies regarding late work, academic dishonesty and more. It is a thorough document packed with boilerplate language that spans 10 pages or more. As such, it is no surprise that students sometimes miss key information. Many instructors use the first lecture to emphasize important aspects of the course and reiterate these across the term. But we know students rely on and benefit from quick guides that are both accessible and engaging.

We are proposing to develop interactive visual course outlines for a selection of courses in the Life Sciences Program. These outlines will supplement the standard course outlines by providing an engaging representation of key information. Students will be able to access further detail through hyperlinks to the standard course outline. We will pilot these outlines in LIFESCI2AA3, LIFESCI3P03 and LIFESCI4J03. All of these courses teach students science communication skills and emphasize the importance of clear, concise and engaging multimedia communication. We predict that exposure to visual course outlines will reinforce a key learning objective of the courses while reducing the number of queries about course deadlines and policies and enhancing student success.

Katie Moisse

Project title: *Exploring the Impact of Community-Engaged Learning Through CityLAB*
Collaborators: **Karen Balcom, Karen Dieleman, Jennifer Jahnke, Cynthia Lokker, Kate Whalen, Jim R. Vanderwoerd, Patrick Byrn, Dave Heidebrecht**

Project Abstract:

Students benefit from learning experiences that are experiential, interdisciplinary and community engaged. CityLAB Hamilton helps create and support such experiences at McMaster,

Mohawk and Redeemer by connecting teaching faculty and students with city staff to solve a real-world problem. The goal is to foster mutually beneficial relationships that can lead to a healthier, more sustainable Hamilton. Since 2017, CityLAB has brought together 63 faculty, 2,301 students and 83 city staff working on 133 projects across many disciplines and municipal service areas. In the proposed project, we will assess the impact of CityLAB projects on students and city staff. Among students, we will explore how CityLAB work has shaped their connection with course content and their community. We will also seek to understand how students describe their CityLAB experiences to potential employers and collaborators. Among city staff, we will explore how CityLAB work has shaped their perception of students as citizens and future job candidates and whether it has opened doors to new projects or collaborations. Our findings will provide evidence for the mutual benefits of community engaged experiential learning through CityLAB, which may spark new involvement and collaborations. With this goal in mind, we plan to create a road map for embedding CityLAB projects across disciplines and diverse learning environments, from independent study projects to large enrolment classes.

Patrick Clancy

Project title: *Physics Videobites as a tool for teaching Introductory Physics: Building connections to contemporary research using short-form videos*
Collaborators: **Adam Fortais, Miranda Schmidt, Sara Cormier, Kari Dalnoki-Veress**

Pat Clancy is an Assistant Professor in the Department of Physics & Astronomy. He received his BSc from St. Francis Xavier University in Nova Scotia, and his MSc and PhD from McMaster. He has previously held positions as a postdoctoral fellow at the University of Toronto, and as a limited term professor at Trent University in Peterborough. Pat returned to McMaster in 2017 as a postdoctoral fellow and neutron instrument scientist. He became a teaching-focused professor in 2020, and a tenure-track professor in 2021. Pat's research background is in the field of experimental condensed matter physics (the physics of materials), and he specializes in the study of quantum materials using beams of neutrons and x-rays. He also has an active interest in Physics Education Research, particularly as it relates to the teaching of Introductory Physics and Quantum Mechanics.

Project Abstract:

The goal of this project is to develop a series of twelve “Physics Videobites”for Introductory Physics courses at McMaster (PHYS 1A03, 1AA3, 1C03, 1CC3, 1D03, and 1E03). These video bites will be 10-to-15-minute videos designed to introduce students to contemporary Physics research and modern applications of core course content. These short-form videos are intended to address one of the major shortcomings of a standard Introductory Physics course: material tends to focus on the foundations of Physics, which means the primary course content is well over 100 years old. We propose to hire a team of graduate students from the Department of Physics and Astronomy to produce a series of video bites that will highlight the connections between contemporary Physics research and our core Introductory course content(e.g. mechanics, electricity and magnetism, and wave motion).There will be a particular emphasis on current research being conducted at McMaster. We will evaluate the impact of these videos on student interest, motivation, and general attitudes towards Physics by conducting a pair of student surveys at the beginning and end of the course. Introductory Physics courses are taken by approximately3000 undergraduate students at McMaster

each year. These courses are required by students from a broad range of programs, including Physical and Chemical Sciences (PHYS 1C03/1CC3), Life Sciences (PHYS 1A03/1AA3), and Engineering (PHYS1D03/1E03).By making these courses more topical, relevant, and engaging, these Physics Videobites have the potential to improve the learning experience for a large and diverse group of students.

Juliet Daniel, Alpha Abebe, Faith Ogunkoya

Project title: *Closing the Gap to Achieve Black Student Academic Excellence at McMaster*
Collaborators: **Lydia Kapiriri, Clare Warner, Daniel Coleman, Rodrigo Narro-Perez**

Juliet Daniel is a Professor in the Dept. of Biology and the Acting Associate Dean of Research and External Relations in the Faculty of Science at McMaster University. She received her BSc from Queen's University and her PhD from the University of British Columbia and has been a Faculty Member at McMaster since 2000. Prof. Daniel's research program is focused on elucidating the role of the transcription factor Kaiso in cancer and vertebrate development. Her team is also currently elucidating the molecular/genetic causes of the disparities in incidence and poor outcomes of triple negative breast cancer in Black and Hispanic women. Prof. Daniel co-founded the African Caribbean Faculty Association of McMaster (ACFAM) in 2010 and serves on the President's Advisory Committee for Building an Inclusive Community (PACBIC) at McMaster. Professor Daniel also serves as faculty mentor for student members of Women in Science & Engineering (WISE) and Black Aspiring Physicians of McMaster (BAP-MAC).

In recognition of her research and community service, Prof. Daniel has received several awards including the inaugural Canadian Cancer Society Inclusive Excellence Award, an Honorary Doctor of Science from the University of the West Indies (UWI) Cave Hill, a UWI Vice Chancellor's Award, a WXN Canada's Most Powerful Women: Top 100 Award, a Black Business and Professional Association (BBPA) Harry Jerome Award, a Hamilton YWCA Women of Distinction Award, a Barbados National Honor Gold Crown of Merit and last but not least, Prof. Daniel was recognized as one of 100 Accomplished Black Canadian (ABC) Women in 2018. She has also been featured in "Millenium Minds: 100 Black Canadians" and "Who's Who in Black Canada".

Alpha Abebe (PhD, Oxford) is an Assistant Professor with the Faculty of Humanities, where she teaches courses focused on leadership, critical thinking, cross-cultural engagement, and community development. She is also the Faculty Lead for African and African Diaspora Studies at McMaster and involved in a number of initiatives focused on achieving equity and excellence at McMaster. She has over 15 years of experience as a local and international practitioner, and this work has been devoted to engaging and championing youth from African, racialized and low-income communities. Dr. Abebe is also a photographer and uses her art as a tool for community engagement and dialogue.

Faith Ogunkoya is a Student Services Team Lead with the Office of the Registrar and currently serves as the Vice-Chair (Staff) of the President's Advisory Committee on Building an Inclusive Community (PACBIC). Faith also serves as the Staff Representative on the executive team with the African and Caribbean Faculty Association of McMaster (ACFAM). She received her BA (Hons) in Education Studies and Philosophy from Greenwich University and, in June 2021, will complete her Master of Education at Brock University, specialising in Leadership and Administration. Faith has worked as a Student Success advocate since 2015, beginning her career in London, England. Since joining McMaster in 2017, Faith has held roles as a Career Development and Relationship Manager with the Faculty of Science, and Coordinator, Global Experiences with the Student Success Centre. Faith's passion and work is focused on helping all students succeed by providing learning experiences, opportunities, and access to keep students engaged and excited about their academics and campus experience. As part of that passion and commitment, Faith has encouraged and promoted Black student excellence, and her efforts are underscored by her commitment to human rights, equity, anti-oppression, and anti-racism. Faith was selected to participate in the recent task force for the Black Student-Athlete Experience and Systemic Review. Faith is a recipient of the President's Award for Outstanding Service 2020 and Brock University's Faculty Association (BUFA) Graduate Studies Scholarship Award, 2021.

Project Abstract:

This project will investigate the Black undergraduate student experience at McMaster to better understand what tools, resources and mechanisms enable Black student engagement, success and wellness. We will use asset-based approach to identify these factors. The project scope was developed within the context of the Black Academic Excellence white paper submitted by the African Caribbean Faculty Association of McMaster (ACFAM) to President Farrar in June 2020, with a call to enhance the scale and efficacy of supports offered to Black McMaster students. Our proposal also builds on McMaster's commitment to implement the recommendations in the report "A Systemic Review of the Black Student-Athlete Experience and the McMaster Athletics Climate", October 2020.

The under-representation of Black students in many programs at McMaster (especially the Medical School), coupled with the lack of Black representation in academic leadership roles creates an unequal and inequitable undergraduate experience for Black students. We will interview Black undergraduate students and recent graduates who successfully navigated the higher education system to gain insight on their success. We will explore questions such as: What does success mean to you? What do you attribute your success to? How were you able to overcome any barriers you faced as a student? This information will help inform Student Services Success programming and mentorship programs such as the newly launched Black Student Mentorship Program (BSMP). This information will also complement the important and current McMaster discussions and efforts that are highlighting the critical issues, gaps and barriers that impede Black student success.

Sarah Clancy

Project title: *Student Engagement, Success, and Research Inquiry: Creating a Safe and Inclusive Conference Research Space for Social Psychology Undergraduate Students through Student Partnerships*

Collaborators: **Shaina McDonald**

I am currently an Assistant Professor (CLA) but will be an Assistant (Teaching-track) Professor in the Department of Health, Aging and Society and the Social Psychology Program as of July 1, 2021. I completed my PhD in Sociology at McMaster University, studying the impact of pop culture and dress styles on the development of children's identity. My research interests are reflected in a course I developed and teach, Small Worlds: Children and Childhood. Currently, I also instruct the course and supervise the original research projects that Social Psychology students complete in their final year in the program; teach two introductory courses, health & society, and introduction to social psychology; teach a new course I developed on health and incarceration; and supervise fourth year Health, Aging and Society and PNB students completing their independent thesis in their final year of study.

I have a keen interest in teaching and learning pedagogies, as well as fostering opportunities for student research, engagement, and skill building. I am very excited to work with former social psychology graduate, Shaina McDonald (M.A.Ed. at the University of Ottawa), co-investigator and RA, on this MacPherson PALAT funded project. The PALAT grant will support a student-run Social Psychology conference, a pre-conference workshop, as well as support research via an exit feedback survey to evaluate the conference for future growth and priority setting. This research project aligns with two priority areas of PALAT: student engagement, retention, and success, and undergraduate research and inquiry, as well as with two of the University's new mission statement elements including, "impact, ambition, and transformation," and "excellence, inclusion, and community." This project facilitates student partnerships and provides an outlet for our students to have a safe and inclusive place to share their research and engage in knowledge translation. This is a beneficial opportunity to foster both student engagement and success, in addition to offering students hands-on research experience and inquiry at the undergraduate level.

Project Abstract:

This project builds upon the existing literature and pedagogy emphasizing the importance of undergraduate research conferences as a form of professional development, capacity building, and refinement of research skills. The PALAT grant will support a student-run undergraduate/recently graduated Social Psychology student conference, as well as support research via an exit feedback survey to evaluate the conference for future growth and priority setting. This research project aligns with two priority areas of PALAT: student engagement, retention, and success, and undergraduate research and inquiry. Furthermore, the project aligns with two of the University's new mission statement elements including impact, ambition, and transformation and excellence, inclusion, and community. This project addresses a gap in the student learning experience, providing an outlet for our students to have a safe and inclusive place to engage and share their knowledge. It will enable students to refine skills in communication and research, thereby facilitating and supporting research and knowledge translation. Moreover, this project builds partnerships with and between students, alumni, faculty, and staff, in addition to offering research assistant positions, academic engagement, and CV-building opportunities (i.e., pre-conference workshop, the conference, publication, and presentation opportunities for students and research assistants). This is a beneficial opportunity to foster both student engagement and success, in addition to offering students hands-on research experience and inquiry at the undergraduate level-two PALAT priority areas aligned with the project.