THE UNIVERSITY OF BRITISH COLUMBIA
Curriculum Vitae for Faculty Members

Date: 30/06/2022 **Initials**: 

1. SURNAME: Verrett **FIRST NAME**: Jonathan
MIDDLE NAME(S): Douglas

2. DEPARTMENT/SCHOOL: Department of Chemical and Biological Engineering

3. FACULTY: Applied Science

4. PRESENT RANK: Associate Professor of Teaching **SINCE**: 01/07/2021

5. POST-SECONDARY EDUCATION

University or Institution	Degree	Subject Area	Dates
McGill University	PhD	Chemical Engineering	05/2011-05/2016
McGill University	B.Eng.	Chemical Engineering	09/2007-05/2011

Special Professional Qualifications

- Professional Engineer (P.Eng.) with Engineers and Geoscientists of British Columbia (EGBC) since August 2018

Continuing Education / Training

- International Program for the Scholarship of Educational Leadership (SoEL): UBC Certificate on Curriculum and Pedagogy in Higher Education. Faculty of Education. Four-month course introducing academic leaders to SoEL and research in higher education practices. May-August 2019.
- Facilitator Development Workshop, Instructional Skills Workshop International Advisory Committee, In-person workshop training facilitators for Instructional Skills Workshops (ISW), 40 hours, April 24-28, 2017

6. EMPLOYMENT RECORD

(a) Prior to coming to UBC

University, Company or Organization	Rank or Title	Dates
Teaching Enhancement Initiative, Faculty of Engineering, McGill University	Research Assistant	09/2014-04/2015
Tomlinson Project in Undergraduate-Level Science Education, McGill University	Lead Graduate Teaching Fellow	06/2014-01/2016

Department of Chemistry, University of Paris South (Paris XI)	Visiting Doctoral Researcher	12/2013 - 06/2014
Tomlinson Project in Undergraduate-Level Science Education, McGill University	Graduate Teaching Fellow	09/2011- 12/2013
Department of Chemical Engineering, McGill University	Undergraduate Student Researcher	05/2010 - 08/2010
Department of Chemical Engineering, McGill University	Undergraduate Student Researcher	05/2009 - 08/2009

(b) At UBC

Rank or Title	Dates
Associate Professor of Teaching	07/2021 – present
Instructor, rank renamed to Assistant Professor of Teaching on 07/2020	08/2016 – 06/2021

(c) Date of granting of tenure at U.B.C.:

7. LEAVES OF ABSENCE

University, Company or Organization at which Leave was taken	Type of Leave	Dates

8. TEACHING

(a) Areas of special interest and accomplishments

One of my main areas of focus is design education, which is an essential component of engineering practice. Design in the programs offered by the Chemical and Biological Engineering department (CHBE) involves developing equipment and large-scale processes to manipulate chemical and biological systems in order to produce value-added products. In order to do this, students need to iteratively analyze problems, formulate solutions and assess their feasibility for application. For students to develop design skills, the problems they tackle must generally be broad enough in scope to require knowledge from multiple courses. Design education culminates in our program with a 4th year industrial-scale design project undertaken over two academic terms. As with much skill development, design is rarely done in isolation, but touches on many of the other professional skills engineers are expected to develop in areas such as communication, teamwork and project management. The department has recently made engineering design experiences a focus of curriculum renewal and I touch more on this renewal in Section 9 of this CV. Within my teaching activities, a primary focus in many of my courses is ensuring students understand connections between courses in the curriculum in order to better prepare them for design not only in the 4th year design course, but their work beyond their degree.

In order to ensure students see these connections I have sought out opportunities to understand design instruction as it currently exists throughout all years of the two programs CHBE offers. I have taught engineering design basics in the introduction to engineering courses (APSC 100/101), which introduces all first-year engineers at UBC. For most students this will be their first course focused on engineering. Building on this, in the second year of study, students in CHBE programs, as well as integrated engineering (IGEN) learn to analyze industrial chemical and biological processes in a course focused on material and energy balances (CHBE 241). This is a foundational course in our discipline and I have strived to improve this course when teaching it from 2016W to 2018W. Through a Teaching and Learning Enhancement Fund Grant, I adapted and created open source content in order to better support student learning in CHBE 241. These materials continue to be used by students. More details on this can be found in my teaching dossier. I have also developed a new core second-year course focusing on introductory chemical engineering design (CHBE 220). The purpose of this is to introduce students to the chemical design process to contextualize what they have learned in their first year and set them up to see connections in future years of study. The course also provides training in physical chemistry fundamentals and their application to chemical engineering analysis. I have also worked to integrate technical communication into the course by coordinating a term project with our technical communications course (CHBE 201), and I touch more on this in section 9 of this CV. In the 3rd year of our program, students dig deeper into the individual units making up a plant. Some of this learning occurs in laboratory settings, such as in Process and Environmental Engineering Laboratory (CHBE 362), where students operate and characterize process equipment. In these laboratory courses, students also improve their communication and writing skills. Students are also exposed to computer process simulation, which allows them to rapidly design and cost equipment. In computer flowsheeting (CHBE 376), which I have taught for the past three years, students work to develop a simulation of a chemical process of their choice. Finally, in order to understand how students apply their design knowledge, I am now leading the team of instructors delivering the 4th year process and product design course (CHBE 453/454). Through these activities I have gained a holistic picture of the design activities in our department and I am focusing on continuing to support and improve them through departmental initiatives as well as my own teaching activities. I am accomplishing this by developing and integrating design activities into courses I teach such as CHBE 220 and CHBE 376. More information on these developments can be found in my teaching dossier.

Outside of the core courses discussed above, which all students take in our discipline, I have sought to disseminate my engineering knowledge more broadly. Notably, I am part of a team teaching engineering for non-engineers (APSC 366), a course for students in disciplines such as arts or commerce to be introduced to engineering principles. I have also contributed through guest lectures in courses such as CHBE 483: Energy Engineering and FNH 309: Food Process Science.

(b) Courses Taught at UBC

Session	Course Number	Total Scheduled Hours	Class Size	Total Hours Taught per Course			
				Lectures	Tutorials	Labs	Other
2021W2	APSC 101 - 201	25 Lecture 24 Studio	259	7	2	0	0
2021W2	APSC 101 – 202	25 Lecture 24 Studio	171	7	2	0	0
2021W2	APSC 101 – 203	25 Lecture 24 Studio	235	1	0	0	0
2021W2	APSC 101 – 211	25 Lecture 24 Studio	223	1	0	0	0
2021W2	APSC 366	39 Lecture	43	10.5	0	0	0
2021W2	CHBE 376	39 Lecture 24 Tutorial	121	39	24	0	0
2021W1 &W2	CHBE 453-454	26 Lecture 104 Advising	108	3	0	0	104*
2021W1	CHBE 220	39 Lecture 24 Tutorial	124	39	24	0	0
2020W2	APSC 101 - 201	25 Lecture 24 Studio	265	10	0	0	0
2020W2	APSC 101 – 202	25 Lecture 24 Studio	218	1	0	0	0
2020W2	APSC 101 – 203	25 Lecture 24 Studio	214	2	0	0	0
2020W2	APSC 101 – 211	25 Lecture 24 Studio	181	1	0	0	0
2020W2	APSC 366	39 Lecture	58	10.5	0	0	0
2020W2	CHBE 376	39 Lecture 24 Tutorial	106	39	24	0	0
2020W1 &W2	CHBE 453-454	26 Lecture 104 Advising	105	3	0	0	104*
2020W1	APSC 100 - 102	25 Lecture 24 Studio	252	6	0	0	0

2020W1	APSC 100 - 104	25 Lecture 24 Studio	232	2	0	0	0
2020W1	CHBE 220	39 Lecture 24 Tutorial	126	39	24	0	0
2020S2	CHBE 243	12 Lecture 6 Tutorial	8	2	6	0	0
2019W2	APSC 101 - 201	25 Lecture 24 Studio	339	4	0	0	0
2019W2	APSC 101 – 202	25 Lecture 24 Studio	164	10	0	0	0
2019W2	APSC 101 – 203	25 Lecture 24 Studio	213	6	0	0	0
2019W2	APSC 366	39 Lecture	45	9	0	0	0
2019W2	CHBE 376	39 Lecture 12 Tutorial	110	39	12	0	0
2019W1 &W2	CHBE 453-454	26 Lecture 104 Advising	122	2	0	0	104*
2019W1	APSC 100 - 102	25 Lecture 24 Studio	195	5	0	0	0
2019W1	CHBE 220	39 Lecture 24 Tutorial	114	39	24	0	0
2018W2	APSC 101 – 202	25 Lecture 24 Studio	149	7	0	0	0
2018W2	APSC 101 - 204	25 Lecture 24 Studio	180	7	0	0	0
2018W2	APSC 366	39 Lecture	48	9	0	0	0
2018W2	CHBE 376	39 Lecture 12 Tutorial	129	39	12	0	0
2018W1 &W2	CHBE 453-454	26 Lecture 104 Advising	106	0	0	0	104*
2018W1	APSC 100 - 102	25 Lecture 24 Studio	201	4	0	0	0
2018W1	APSC 100 - 103	25 Lecture 24 Studio	179	4	0	0	0
2018W1	CHBE 241	39 Lecture 12 Tutorial	177	39	12	0	0

2018W1	CHBE 243	13 Lecture 12 Tutorial	117	2	9	0	0
2018W1	CHBE 362 - 101	2 Lecture 10 Dry Lab 18 Wet Lab	69	2	10	18	0
2018W1	CHBE 362 - 102	2 Lecture 10 Dry Lab 18 Wet Lab	67	2	10	18	0
2017W2	APSC 366	39 Lecture	48	9	0	0	0
2017W2	CHBE 376	39 Lecture 12 Tutorial	128	39	12	0	0
2017W1	CHBE 241	39 Lecture 12 Tutorial	190	39	12	0	0
2017W1	CHBE 362 - 101	2 Lecture 10 Dry Lab 18 Wet Lab	64	2	10	18	0
2017W1	CHBE 362 - 102	2 Lecture 10 Dry Lab 18 Wet Lab	48	2	10	18	0
2016W1	CHBE 241	39 Lecture 12 Tutorial	193	39	12	0	0

*For CHBE 453/454 – the 104 hours is used for meeting with design groups twice per week.

Brief Descriptions of the courses and my activities:

APSC 100 – Introduction to Engineering I

- Course Description: An introduction to the engineering profession including: roles and responsibilities of the engineer, the engineering disciplines, sustainability, an introduction to the engineering design process, introduction and application of the relevant foundational scientific principles, prototyping, engineering graphics, technical communication, and engineering ethics.
- I am part of the teaching team of along with a variety of other faculty members across engineering disciplines. I am responsible to teach classes on focusing on sustainability, design and decision-making as well as helping to ensure alignment with the case study complementing these. I also assist with the creation and evaluation of the midterm and final exams.

APSC 101 – Introduction to Engineering II

- Course Description: An introduction to the engineering profession including: the engineering design process, sustainability, prototype testing, introduction and application of the relevant foundational scientific principles, team functioning, engineering graphics, and technical communication.
- I am part of the teaching team of along with a variety of other faculty members across engineering disciplines. I am responsible to teach classes on focusing on sustainability, design and decision-making as well as helping to ensure alignment with the case studies complementing these. I also assist with the creation and evaluation of the midterm and final exams.

APSC 366 – The Art of the Possible: An Introduction to Engineering for Non-Engineers

- Course Description: An introduction to engineering for the non-specialist. A case-studies approach includes examples from sustainability-related technology, consumer products, structures, and energy conversion.
- I co-instruct the course with three other faculty members from Mechanical (2 people) and Electrical and Computer Engineering. I am responsible to teach a 3-week module on Chemical and Biological Engineering including a module project and quiz. I also assist with term project guidance and assessment.

CHBE 220 – Founding Principles in Chemical and Biological Engineering I

- Course Description: Introduction to Chemical and Biological Engineering profession and the physical sciences that form the founding principles of the discipline.
- This course was newly created in 2019. I created all content from scratch and I am the sole instructor responsible for the delivery of the course.

CHBE 241 – Material and Energy Balances

- Course Description: Introduction to Chemical and Biological Engineering; units; stoichiometry; phase equilibria; material balances; energy balances.
- I am the sole instructor responsible for the delivery of the course.

CHBE 243 – Introduction to Chemical and Biological Engineering Process and Technology

- Course Description: Processes used in chemical and biological industries, which emphasize underlying physical, chemical, and biological principles.
- I am the sole instructor responsible for the delivery of the course, although many lectures are delivered by guests speakers. I developed and introduced design exercises into tutorials, more on this can be found in my teaching dossier.

CHBE 362 – Process and Environmental Engineering Laboratory

- Course Description: Experiments to illustrate and use material presented in 200 and 300-level CHBE courses. Field trips may be required.
- In 2017W I co-instructed the course with one other instructor and in 2018W was the sole instructor. Wtudents work in teams of 4 to complete laboratory exercises. I evaluate student pre-lab preparedness, lab reports, oral presentations and teamwork.

CHBE 376 – Computer Flowsheeting and Unit Operation Design

- Course Description: Theory and practice of computer flowsheeting in chemical plant design; hands-on use of modern process simulators, prediction of thermodynamic properties of fluids; behaviour of single and multiphase systems.
- I am the sole instructor responsible for the delivery of the course.

CHBE 453/454 – Biological/Chemical Process and Product Design

- Course Description: 8-month project-based course, integrating chemical (and biological) engineering concepts with economics, life cycle analysis and health and safety considerations in the design of major chemical (and biological) processes. CHBE 454 is

taken by students in the Chemical Engineering program (CHML) and CHBE 453 by students in the Chemical and Biological Engineering program (CHBE).
- I co-instruct this course with three or four other instructors and am responsible for advising groups of six to eight students throughout the term as they work on their project. I meet with these students twice per week for roughly 30-45 minutes with each team. As part of the teaching team I assist in assessing projects at the end of both terms including interviews with students, evaluating presentations, design report and progress reports. In 2019W and onwards I coordinated the teaching team for the course and discuss this further in my teaching dossier.

(c) Students Supervised

Students supervised in Educational Leadership Projects
I have supervised students conducting educational leadership and scholarship of teaching and learning (SoTL) projects. I list the cumulative hours these students worked on these projects below. A more detailed description of these projects can be found in my Teaching Dossier.

Graduate Students

- Maddie Eghtesad – UBC Center for the Integration of Research, Teaching and Learning Teaching as Research Project, *Team Cohesion in Design Courses in an Online Setting*, 200 hours, June 2020 – June 2021
- Karl Zimmerman – Faculty Associates project, *design integration focusing on developing and assessing design activities in CHBE 243*, 40 hours, September 2018 – August 2019
- Amir Maleki – UBC Center for the Integration of Research, Teaching and Learning Teaching as Research Project, *Can a mini lesson on self regulated learning improve students' academic performance?*, 200 hours, June 2017 – June 2018
- Jun Sian Lee – OpenChemE Teaching and Learning Enhancement Fund (TLEF) project, *building online homework problems in WeBWorK*, 170 hours, May 2017 – March 2018
- Ruben Govindarajan – OpenChemE TLEF project, *building online exam repository and guided solutions*, 170 hours, May 2017 – March 2018

Undergraduate Students
- Tasnia Anika & Siba Saleh – Community Engaged Learning (CEL) Fellows, *Integrating CEL into CHBE 220*, 100 hours, September-December 2021.
- Tasnia Anika – Work-Learn International undergraduate research award (WLIURA), *Exploring diverse and inclusive engineering student leadership development at UBC*, 560 hours, May-August 2021.
- Siba Saleh – Work-Learn International undergraduate research award (WLIURA), *Supporting community engaged learning initiatives in engineering at UBC*, 560 hours, May-August 2021.
- Arshan Mansoor Ali – Co-op student, *CHBE Undergraduate Program Evaluation and Renewal (UPER)*, 560 hours (50% co-supervised with Dr. Louise Creagh), May-August 2020 & May-August 2021
- Shibo Wang – co-op student, *CHBE Online Learning Department Support Program*, 980 hours, September 2020-April 2021.

- Rhiana Palfry – summer student, *CHBE Online Learning Department Transition Program*, 350 hours, June-August 2020.
- Darien Grace – summer student, *CHBE Online Learning Department Transition Program*, 420 hours, June-August 2020.
- Rana Barghout & Rosie Qiao– Co-op student, Adopting Interactive learning resources for an introductory chemical engineering design course (CHBE 220), 560 hours each, May-August 2020.
- Matheus Cassol – Work-Learn International undergraduate research award (WLIURA), *Effective design instruction and assessment in chemical & biological engineering programs*, 560 hours, May-August 2019 & 560 hours, May-August 2020.
- Thomas Oldreive – Co-op student, *CHBE Undergraduate Program Evaluation and Renewal (UPER)*, 560 hours (50% co-supervised with Dr. Louise Creagh), May-August 2019.
- Said Zaid-Alkailani – summer student, *OpenChemE TLEF project: curating an online openly available textbook*, 300 hours, July 2017-March 2018
- Victor Chiew & Jamie Ngai To Lo – summer student. *OpenChemE TLEF project: curating an online openly available textbook*, 170 hours each, July-August 2017

(d) A summary of student evaluations of teaching effectiveness scores over the past five years (or since appointment if less than five years)

- Mean student evaluation scores on a 5 point scale* are available in the table below for all courses I have taught thus far where the data is available. Full student evaluations with student comments as well as specific reflections, planned improvements and actions taken can be found in my teaching dossier. Note that in 2018W1 UBC moved to using interpolated means rather than means for scoring. Numbers from 2018W1 onwards contain this interpolated mean and an extra decimal place is also indicated with this new system.

In 2021W UBC changed the student evaluations, the new questions are reflected in the first table

Course	***Year***	***Response Rate***	*Throughout the term, the instructor explained course requirements so it was clear to me what I was expected to learn.*	*The instructor conducted this course in such a way that I was motivated to learn.*	*The instructor presented the course material in a way that I could understand.*	*Considering the type of class (e.g., large lecture, seminar, studio), the instructor provided useful feedback that helped me understand how my learning progressed during this course.*	*The instructor showed genuine interest in supporting my learning throughout this course..*	*Overall, I learned a great deal from this instructor.*
CHBE 220 - Lec.	*2021 W1*	*74/125 (59%)*	*4.7*	*4.3*	*4.5*	*4.4*	*4.7*	*4.6*
CHBE 220 - Tut.	*2021 W1*	*41/125 (33%)*	*4.6*	*4.3*	*4.4*	*4.4*	*4.5*	*4.5*

Course	***Year***	***Response Rate***	*The instructor made it clear what students were*	*The instructor communicated the subject matter effectively.*	*The instructor helped inspire interest in learning the*	*Overall, evaluation of student learning (through exams, essays,*	*The instructor showed concern for*	*Overall, the instructor was an effective teacher.*

			expected to learn		*subject matter*	*presentations, etc.) was fair.*	*student learning.*	
CHBE 220	*2020 W1*	*92/126 (73%)*	*4.75*	*4.68*	*4.43*	*4.67*	*4.60*	*4.68*
CHBE 220	*2019 W1*	*66/115 (57%)*	*4.65*	*4.63*	*4.52*	*4.66*	*4.84*	*4.50*
CHBE 241	*2018 W1*	*154/179 (86%)*	*4.42*	*4.20*	*3.86*	*4.35*	*4.44*	*4.29*
CHBE 241	*2017 W1*	*120/190 (63%)*	*4.2*	*3.8*	*3.6*	*3.8*	*4.6*	*4.1*
CHBE 241	*2016 W1*	*120/193 (62%)*	*4.2*	*3.8*	*3.7*	*3.7*	*4.6*	*4.0*
CHBE 243	*2020 S2*	*2/8 (25%)*	*5.00*	*5.00*	*5.00*	*4.50*	*4.50*	*4.50*
CHBE 243	*2018 W1*	*65/117 (56%)*	*3.74*	*3.85*	*4.05*	*3.76*	*4.06*	*4.11*
CHBE 362 – 101	*2018 W1*	*26/69 (38%)*	*4.29*	*4.17*	*4.27*	*4.06*	*4.50*	*4.50*
CHBE 362 – 102	*2018 W1*	*24/67 (36%)*	*4.14*	*4.14*	*4.14*	*4.59*	*4.50*	*4.30*
CHBE 362 – 101	*2017 W1*	*24/64 (38%)*	*4.0*	*4.1*	*3.9*	*3.8*	*4.3*	*4.2*
CHBE 362 – 102	*2017 W1*	*18/48 (38%)*	*4.2*	*4.4*	*4.1*	*4.1*	*4.7*	*4.6*
CHBE 376	*2020 W2*	*31/107 (29%)*	*4.95*	*4.97*	*4.90*	*4.87*	*4.95*	*4.88*
CHBE 376	*2019 W2*	*36/110 (33%)*	*4.90*	*4.88*	*4.83*	*4.70*	*4.88*	*4.94*
CHBE 376	*2018 W2*	*70/129 (54%)*	*4.94*	*4.93*	*4.81*	*4.82*	*4.89*	*4.94*
CHBE 376	*2017 W2*	*65/128 (51%)*	*4.6*	*4.6*	*4.4*	*4.4*	*4.7*	*4.7*
CHBE 453/454	*2020 W2*	*30/105 (29%)*	*4.69*	*4.81*	*4.69*	*4.67*	*4.69*	*4.78*
CHBE 453/454	*2019 W2*	*28/122 (23%)*	*4.41*	*4.35*	*4.21*	*4.33*	*4.72*	*4.37*
CHBE 453/454	*2018 W2*	*28/106 (26%)*	*3.73*	*3.75*	*3.83*	*4.09*	*3.91*	*3.85*
APSC 100 - 102	*2020 W1*	*87/256 (34%)*	*4.14*	*4.14*	*3.86*	*3.81*	*3.91*	*4.05*
APSC 100 - 104	*2020 W1*	*68/235 (42%)*	*3.92*	*3.86*	*3.66*	*4.00*	*3.68*	*3.87*
APSC 100 - 102	*2019 W1*	*100/196 (51%)*	*4.04*	*4.11*	*3.92*	*4.01*	*3.81*	*3.97*
APSC 100 - 102	*2018 W1*	*116/202 (57%)*	*3.99*	*3.93*	*3.54*	*3.95*	*3.59*	*3.76*
APSC 100 - 103	*2018 W1*	*75/180 (42%)*	*4.05*	*3.99*	*3.54*	*3.83*	*3.68*	*3.91*
APSC 101 - 201	*2020 W2*	*41/268 (15%)*	*3.96*	*3.98*	*3.82*	*3.82*	*3.84*	*3.86*
APSC 101 - 202	*2019 W2*	*37/164 (23%)*	*4.04*	*4.05*	*3.72*	*4.13*	*3.98*	*3.98*
APSC 101 - 203	*2019 W2*	*54/214 (25%)*	*4.18*	*4.26*	*3.86*	*4.31*	*4.02*	*4.09*
APSC 101 – 202	*2018 W2*	*43/149 (29%)*	*3.95*	*4.04*	*3.61*	*4.04*	*3.94*	*3.93*

APSC 101 - 204	*2018 W2*	*46/183 (25%)*	*4.00*	*4.07*	*3.68*	*3.89*	*3.82*	*3.88*
APSC 366	*2020 W2*	*12/58 (21%)*	*4.50*	*4.64*	*4.50*	*4.64*	*4.25*	*4.36*
APSC 366	*2019 W2*	*14/45 (31%)*	*4.25*	*4.72*	*4.33*	*4.30*	*4.38*	*4.38*
APSC 366	*2018 W2*	*15/48 (31%)*	*4.31*	*4.56*	*4.56*	*4.56*	*4.22*	*4.44*
APSC 366	*2017 W2*	*13/49 (26%)*	*4.1*	*4.2*	*4.0*	*3.8*	*4.3*	*4.3*

*1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, 5 – Strongly Agree

(e) Continuing Education Activities

- Teaching and Learning Enhancement Fund, Aspire-2040 Learning Transformation Fund Showcase, UBC CTLT, online showcase for funded projects, I presented a poster along with Profs. Bagherzadeh and Creagh on the Undergraduate Program Renewal TLEF for CHBE, 1 hour, May 9, 2022
- CHBE Online Learning Department Transition Program, five one-hour workshops on different topics, with some run multiple times. Co-facilitated with Darien Grace and Rhiana Palfry. These were recorded and written guides were also distributed for these topics. Topics were: Introduction to Canvas (2 x 1 hour, 8 participants) Lecture Recording (2 x 1 hour, 7 participants), Synchronous Sessions (2 x 1 hour, 8 participants), Assessment (2 x 1 hour, 5 participants) and Microsoft Teams (1 x 1 hour, 3 participants), June – August 2020.
- Finding and Using Open Educational Resources (OER), Engineering Collaboration for Online and Remote Education (E-CORE) and Canadian Engineering Education Association (CEEA) OER Special Interest Group (SIG), Co-facilitated with Dr. Agnes d'Entremont, 3 participants, 1 hour, August 4 2020.
- Sharing OER, E-CORE and CEEA OER SIG, 17 participants, 1 hour, July 27, 2020
- Summer Institute: Effective Lesson Planning, UBC CTLT, in-person workshop introducing lesson planning basics. Co-facilitated with Dr. Matthew Coles, 14 participants, 2 hours, August 21, 2019
- Introduction to and Using OER: Part A, Canadian Engineering Education Association (CEEA) 2019 Annual Conference, in-person workshop introducing how to find and use OER. Co-facilitated with Dr. Grant McSorley and Dr. Deena Salem, 15 participants, 1.5 hours, June 9, 2019.
- WeBWorK for Beginners part I: Using WeBWorK, Canadian Engineering Education Association (CEEA) 2018 Annual Conference, in-person workshop introducing the open source online homework platform WeBWorK. Co-facilitated with Dr. Agnes d'Entremont, Dr. Negar Harandi, Dr. Luis Linares, 8 participants, 1.5 hours, June 3, 2018.
- WeBWorK for Beginners part II: Developing in WeBWorK for the Open Problem Library, CEEA 2018 Annual Conference, in-person workshop focusing on problem development in the WeBWorK homework platform. Co-facilitated with Dr. Agnes d'Entremont, Dr. Negar Harandi, Dr. Luis Linares, 9 participants, 1.5 hours, June 3, 2018.
- WeBWorK for Beginners! Using and Developing for the Open Problem Library, British Columbia Institute of Technology (BCIT), in-person workshop introducing the open source online homework platform WeBWorK. Co-facilitated with Dr. Agnes d'Entremont,

Dr. Negar Harandi, Dr. Luis Linares, 10 participants, 2 hours, Feb 21, 2018. Also run at UBC with Dr. Harandi, 1 participant, 1.5 hours, May 2, 2018

- Teaching with Technology Showcase, UBC CTLT, in-person showcase hosted by the Provost for selected educational technology projects, I presented on my TLEF used to develop open educational resources in CHBE 241, 2 hours, Dec 7, 2017
- Winter Institute: WeBWorK for Beginners! Using and Developing for the Open Problem Library, UBC CTLT, in-person workshop introducing the open source online homework platform WeBWorK. Co-facilitated with Dr. Agnes d'Entremont, Dr. Negar Harandi, Dr. Luis Linares, Dr. Patrick Walls, 21 participants, 2 hours, Dec 4, 2017
- Summer Institute: Can I use this? Exploring copyright & open educational resources, UBC CTLT, in-person workshop introducing the use of open resources in courses. Co-facilitated with Dr. Christina Hendricks, Peter James and Will Engle, 15 participants, 1.5 hour, August 30, 2017
- Summer Institute: Course Goals and Learning Objectives, UBC CTLT, in-person workshop introducing how to write and use course goals and learning objectives. Co-facilitated with Sue Hampton, 20 participants, 1.5 hour, August 28, 2017
- Faculty Instructional Skills Workshop (ISW), UBC CTLT, In-person training on how to analyze and improve pedagogy and lesson planning for faculty across UBC. Co-facilitated with Dr. Sarah Sherman and Dr. Judy Chan, 11 faculty, 24 hours, August 22-24, 2017. Co-facilitated with Susan Hampton, 11 faculty, 24 hours, August 14-16, 2018. Co-facilitated with Susan Hampton and Lucas Wright, 17 faculty, 24 hours, August 13-15, 2019. Co-facilitated with Susan Hampton online, 8 faculty, 24 hours, July 27, August 14-16, 2020. Co-facilitated with Jens Vent-Schmidt online, 10 faculty, 24 hours, July 27, July 6,7,12,14, 2021.
- CHBE Departmental Instructional Skills Workshop, UBC CHBE, In-person training on how to analyze and improve pedagogy and lesson planning for graduate students in the CHBE Department some of whom were being trained for the Vancouver Summer Program. 6 students, 24 hours, June 13-16, 2017; 4 students, 24 hours, May 23-25, 2018.
- Vancouver Summer Program Training, UBC CHBE, In-person training on class planning for graduate students as part of the Vancouver Summer Program, run in conjunction with the Departmental Instructional Skills Workshop (ISW), 11 students, 4 hours, June 13, 2017; 8 students, 4 hours, April 30, 2018, 6 students, 4 hours, April 30, 2018.
- Finding, Using and Remixing Open Resources for Your Courses Workshop, Centre for Teaching and Learning, UBC Okanagan, in-person workshop introducing the use of open resources in courses. Co facilitated with Dr. Michelle Lamberson and Sajney Lacey, 1 hour, May 3, 2017
- Open Scholarly Practice Workshop, CTLT, in-person workshop exploring the use of open resources in scholarly research and teaching. Co-facilitated with Will Engle, Erin Fields, Cindy Underhill and Lucas Wright, 1.5 hours, March 27, 2017

(f) Visiting Lecturer (indicate university/organization and dates)

(g) Other

Continuing Education attended related to teaching (> 3 hours):

- Project RISE (Realizing identity-safe environments) Workshop, Workshop on allyship and building more inclusive environments in STEM, 4 hours, Oct 20, 2021
- National Initiative on Capacity Building in Engineering Leadership (NICKEL) VI Conference, Virtual conference on engineering leadership in academic programs, 6 hours, August 10, 2021
- Association of American Colleges and Universities (AAC&U) High Impact Practices Institute, Virtual institute on implementing high-impact educational practices across degree program, 24 hours, June 15-18, 2021
- Experiential Learning Exercises Boot Camp, hosted by the Tucker Leadership Lab at William Jewell College, Virtual training on implementing experiential learning exercises for team development, 14 hours, May 20-21, 2021
- Course Design Intensive Workshop, CTLT, In-person training on course design, 24 hours, December 10-14, 2018
- Safety and Chemical Engineering Education Faculty Workshop, American Institute of Chemical Engineers (AIChE), in-person training on process safety and curricular integration at Chevron Energy Technology Company in Richmond, CA, 24 hours, Aug 26-29, 2018
- Summer School for Chemical Engineering Faculty, American Society for Engineering Education (ASEE), In-person workshop to help new faculty excel as teachers and scholars, 5 days, July 29- August 3, 2017
- Team-Based Learning Course Design Institute, Centre for Instructional Support, UBC Faculty of Applied Science, In-person workshop on team-based learning (TBL), 20 hours, May 16-18, 2017
- Responsible Conduct of Research Workshop, Collaborative Institutional Training Initiative (CITI Program), online training on dealing with ethical issues in scientific research, the publishing process and student supervision, 5 hours, January 5, 2017
- Learning Analytics Hackathon, University of British Columbia (UBC) Centre for Teaching, Learning and Technology (CTLT), in-person workshop analyzing and visualize student learning data from courses using Tableau software. 12 hours, January 27-28, 2017
- Instructional Skills Workshop (ISW), CTLT, In-person training on how to analyze and improve pedagogy and lesson planning, 24 hours, August 16-18, 2016

Continuing education attended related to teaching (≤ 3 hours):

- Tension and Risk in Open Scholarship: A Conversation, Open Access Week Vancouver, in-person workshop focusing on new developments in open scholarship, 3 hours, October 26, 2017
- Introduction to Jupyter Notebooks and scientific computing in Python, WestGrid Research Computing Summer School, in-person workshop on utilizing Jupyter Notebooks in teaching, 3 hours, June 20, 2017
- Finding, Using and Remixing Open Resources for Your Courses, CTLT, in-person workshop on utilizing open educational resources in courses, 1.5 hours, February, 27. 2017
- Open Practices: Teaching and Learning with Wikipedia Roundtable, CTLT, in-person workshop and discussion on getting students to create and edit Wikipedia articles in courses, 1.5 hours, February 1, 2017

- Brightspace Exploratory Session for Faculty, CTLT, in-person showcase and discussion on one of two possible new online learning management systems at UBC, 1.5 hours February 1, 2017
- Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans Course on Research Ethics (TCPS 2: Core), Panel on Research Ethics, Online training required in Canada for research on human subjects, 3 hours, 24 January, 2017
- Developing your Skills as a Peer Reviewer of Teaching: Introductory Workshop, CTLT, In-person training on how to conduct peer reviews of teaching, 3 hours, January 24, 2017
- Using your teaching Portfolio to Showcase your Educational Leadership, in-person workshop on creating an effective teaching portfolio, 1.5 hours, Dec 6, 2016
- Learning Analytics, CTLT Scholarship of Teaching and Learning (SoTL) Community of Practice (CoP), in-person workshop on uses of learning analytics to improve student learning with case studies on the use of these tools in the Faculty of Arts at UBC, 1.5 hours, November 15. 2016
- Adopting Open Textbook and Resources: Teaching and Learning Enhancement Fund (TLEF) Support possibilities, CTLT, in-person consultation on creating a TLEF application for the creation and adoption open resources in the Chemical and Biological Engineering (CHBE) 241 course, 1 hour, October 4, 2016
- Exploring the SoTL Explorer Tool, CTLT SoTL CoP, in-person workshop on using the SoTL Explorer Tool to categorize and explore previous pedagogical innovation projects such as TLEF grants for relevant ideas to apply in your own teaching practice, 1.5 hours, October 3, 2016
- Learning and Teaching Hub Open House, CTLT, in-person event to showcase the variety of programs offered by CTLT to support teaching, 1 hour, August 24, 2016
- Welcome to Teaching at UBC Workshop, CTLT, in-person workshop providing an introduction to teaching at UBC and highlighting experiences of recently hired faculty, 2.5 hours, August 22, 2016

Advisor - CHBE 453/454 – Biological/Chemical Process and Product Design

In 2016W and 2017W though not part of the formal course instructional team, I regularly met (4 hours/week) with students and course instructors throughout the academic year to support student groups in their chemical plant design projects. I also attended lectures when my teaching schedule permitted. In 2016W I was involved in student assessment through individual interviews at the end of each term as well as student poster presentations on design day on April 7, 2017. In 2017W I was involved in student assessment through individual interviews at the end of the second term as well as final project student poster presentations on April 3, 2018. In 2018W I was added to the teaching team as I then received my professional engineering license which is required to teach a design focused-course.

Graduate Teaching Activities

I have contributed to improving graduate education in the department by facilitating professional skills development through the workshops listed below:

- Facilitator, Research Integrity Workshop, CHBE UBC, 2 hours (each session), January 9 & 23 and November 23, 2017. I facilitated group discussions on case studies for groups of 6-8 graduate students attending the workshop.

- Facilitator, 3 Minute Thesis Practice Session, CHBE & ECE UBC, 1.5 hours, January 19, 2017, Feb 7, 2018, Feb 21, 2019 and Feb 12, 2020. I gave students feedback on their 3-Minute thesis presentations.
- Judge, APSC 3 Minute Thesis Competition, 1.5 hours, Feb 28, 2020

Undergraduate Teaching Activities

Outside of my formal course teaching load I have contributed to undergraduate education by facilitating industrial tours, guest lecturing and providing feedback on student work as listed below:

- Jump Start – Program to introduce small groups of around 30 first year students to UBC, faculty plan learning community activities for 2 hours each day for 1 week and may interact with up to 2 cohorts in a year. 1 cohort, Aug 2021
- Evaluator, CHBE 262 – Chemical Engineering and Applied Chemistry Laboratory student poster presentations, 2 hours each day, March 31, 2017, March 23 & 26, 2018 and March 25 & 29 2019. I evaluated and gave students feedback on their poster presentations.
- Evaluator, CHBE 492/494/496 - Undergraduate Thesis, 3 hours, March 27, 2017. I evaluated and gave students feedback on their undergraduate thesis proposals.
- 3rd Year Local Industrial Field Trip Coordinator, led student tours to various facilities. 3 hours, February 10, 2017, False Creek Neighborhood Energy Utility and 4 hours, February 12, 2018, BC Sugar.
- Evaluator, CHBE 491/493/495 - Undergraduate Thesis Proposal, 3 hours, November 28, 2016 and 2 hours, November 27, 2017. I evaluated and gave students feedback on their undergraduate thesis proposals.
- 3rd Year Local Industrial Field Trip Coordinator. September 26 & 28, 2016, 10 hours, I coordinated travel and led students on industrial tours of the CertainTeed Drywall plant, Seymour-Capilano Water Treatment plant and Central City Brewery. September 24 & 25, 2018, 10 hours, I coordinated travel and led students on industrial tours of the Fraser Valley Biogas plant, Vitalus Milk Processing Facility, Crow's Nest Distillery and Swisswater coffee plants.
- Guest lecture, CHBE 483 – Energy Engineering, "energy and environmental aspects of clathrate (gas) hydrates" 1 hour each day on October 5, 2016, October 6, 2017 and October 5, 2018, October 9, 2020.
- Guest lecture, APSC 100 – Introduction to Engineering I, "Introduction to Chemical and Biological Engineering", three 20-minute presentations, one on September 27, 2017 and two on September 29, 2017.
- Guest lecture, CHBE 487 – Interfacial Phenomena, feedback session on course projects, .1.5 hours total, February 9, 2017.
- Guest lecture, FNH 309 – Food Process Science, "food dehydration technologies" and "intermediate moisture foods", 3 hours total, February 1 & 3, 2017.

Courses Audited:

CHBE 376 – Computer Flowsheeting and Fluid Properties Estimation

- Course Description: Theory and practice of computer flowsheeting in chemical plant design; hands-on use of modern process simulators, prediction of thermodynamic properties of fluids; behaviour of single and multiphase systems.
- I audited the entire 3-credit course in the 2016W2 term in preparation for teaching the course in the next academic year.

CHBE 476 – Modelling and Optimization in Chemical Engineering

- Course Description: Mathematical modelling of chemical plants and processes; computer simulation; introduction to numerical optimization techniques.
- I audited the entire 3-credit course in the 2016W1 term to better understand simulation software, as well as the expectations of students using this software in their 4th year design projects.

9. EDUCATIONAL LEADERSHIP

(a) Areas of special interest and accomplishments in educational leadership

My educational leadership activities have focused on collaborations in three main areas: improving design experiences in the CHBE program, creating and supporting educator training opportunities and collaborating on educational innovation.

Integrating CHBE design experiences

In order to improve design experiences in the CHBE program I have undertaken a number of activities detailed in Section 8 – Teaching of this CV as well as in my teaching dossier. Furthermore I have extended this impact beyond my own classroom by working with other faculty members on design activity development and integration. One example of this is the Teaching and Learning Enhancement (TLEF) grant received by Dr. Gopaluni, Dr. Yadav, Dr. Cao and myself in order to integrate a variety of experiential learning tools into two 3rd year term 2 courses. These courses are CHBE 355 – Kinetics and Reactor Design and CHBE 356 – Process Dynamics and Control. Through this collaboration we have developed software tutorials to introduce students to numerical methods using Python in order to model the systems that they are learning about in the classroom. The use of this software culminates in a newly developed design project in both courses. Some of the tools we developed have been so successful that they have also been adopted by students in other classes to learn Python.

Educator Training

One of my focuses has been to support educator training opportunities in order to ensure effective teaching methods are being disseminated and practiced. An example of this is the development of teaching training program in conjunction with our department's Vancouver Summer Program (VSP) offering. In this program graduate students and post-doctoral fellows are offered a paid opportunity to teach a series of 3 three-hour lectures in the program. Prior to this the trainees attend a four-hour training session, followed by multiple individual support sessions to help give them feedback on their class plans. As part of the program, I have previously facilitated an optional Instructional Skills Workshop (ISW) for the participants. I have also been active in facilitating ISWs for faculty at UBC's CTLT. In addition to this I am active in delivering workshops related to open educational tools, most notably WeBWorK, an online homework platform.

Collaboration on educational innovation

In order to have impactful educational innovations I have collaborated on a number of initiatives within my own department as well with faculty in other departments at UBC. Working closely with Dr. Louise Creagh and our department's curriculum committee we created a successful proposal for a special TLEF call for Undergraduate Program Evaluation and Renewal Projects. Dr. Creagh and I are now responsible for co-leading the work of this project to revamp the department's program evaluation procedures in order to ensure continuous improvement for both of the undergraduate programs offered by the department. I have also worked closely with Dr. Agnes d'Entremont (MECH) and Dr. Negar Harandi (ELEC) to successfully implement a TLEF expanding the WeBWorK online homework system in second-year engineering. With this expansion every second year student is impacted by this homework system and we are making over 1600 new problems available in five engineering subjects. This will increase the WeBWorK Open Problem Library's engineering content seven-fold from the original 260 questions in three subjects.

(b) Curriculum development/renewal

Vancouver Summer Program – CHBE

I have been actively involved in the development of a summer course offering in Chemical and Biological Engineering led by Dr. Gabriel Potvin, Ms. Marlene Chow and myself. The first year of the program, in summer of 2017 (2017S) was a success attracting 45 students. The 2017S program comprised of one package (Package A) of two courses, with the courses being Introduction to Biological Engineering and Introduction to Chemical Engineering, which are each the equivalent of a first-year 3-credit course. Dr. Potvin or I were present at all lectures, which were mainly delivered by graduate students trained in the department. I oversaw twelve 3-hour class sessions and invigilated the two 3-hour exams. We have extended VSP offerings for the summer 2018 by continuing to offer the same package as well as adding a second course package (Package B) focusing on more advanced topics explored through the courses: The Science and Engineering of Coffee Production and The Science and Engineering of Beer and Wine Production. In the summer of 2018, 65 students participated in Package A and 26 participated in Package B. In summer 2019 we further expanded the program to include a third package focusing on computer-aided design (Package C). This will include materials I have developed for a process flowsheeting course (CHBE 376). Student enrollment in 2019 between all packages was 72. We have continued to work to further expand the program, preparing to offer a package on renewable energy and green engineering (Package D). Unfortunately due to Covid-19 the summer 2020 VSP program was cancelled, but we look forward to continuing the program in the future when possible.

(c) Pedagogical innovation

WeBWorK Open Online Homework Development

Working with Drs. Agnes d'Entremont, Negar Harandi, Juan Abello and Luis Linares we have developed 835 new online homework problems in WeBWorK. We have also developed scripts for re-coding over 800 problems from other systems (such as blackboard) so that these can be ported over to WeBWorK. These questions have been deployed in common second-year engineering courses in CHBE, CIVL, ELEC and MECH impacting all second-year students in engineering programs in APSC at UBC Vancouver Campus (~800 students/year). Following testing these problems are being uploaded to the Open Problem Library (OPL) so they are freely accessible to be used and modified. We were also invited to take part in a WeBWorK development working meeting in Charlottesville Virginia from June 27-July 1, 2018. Drs.

d'Entremont, Abello and myself were able to attend and developed 7 taxonomies for engineering subjects (none were previously present) such that problems can be categorized and shared on the OPL. Further information on WeBWorK development can be found in my teaching dossier.

Communication integration
Working with Mr. Michael Schoen and Ms. Estella Qi I have developed case studies and midterm and final exam questions for CHBE 201 that have been implemented in the 2017W1 CHBE 201 course. These case studies focus on chemical plant material balances, process equipment selection, economic analysis and safety analysis, topics also covered in CHBE 241. Since 2017W we have continued to develop case studies and exam questions to strengthen the link between communications and technical content in CHBE. We now coordinate term project assignments in CHBE 220 amongst both courses such that students get feedback on their technical and communication skills. More details on this can be found in my teaching dossier.

Pumps and Valves Workshop Renewal - CHBE 262: Chemical Engineering and Applied Chemistry Laboratory
I have led the redevelopment of the pumps and valves workshop in the department's second year Lab Course (CHBE 262) with Dr. Dhanesh Kannangara for implementation in 2017W. This is one of students' four lab activities performed during the semester. My role was coordinating the design and construction of a new setup as well as redeveloping the lab manual, student assignment, and teaching assistant training.

(d) Applications of and contributions to the scholarship of teaching and learning

- Contributions in terms of scholarly work can be found in the publication record section of my CV. Since coming to UBC this includes: 1 educational journal paper, 4 fully peer-reviewed educational proceedings papers, 8 abstract peer-reviewed educational proceedings papers, 5 conference presentations.

(e) Teaching and Learning Grants

Listed below are my teaching and learning grants with an estimate of the relative percentage of contribution if these are shared with other investigators.

Granting Agency	Subject	$ Per Year	Year	Principal Investigator	Co-Investigator(s)
UBC Centre for Community Engaged Learning (CCEL)	Implementing community-engaged learning in Chemical & Biological Engineering Undergraduate Programs	$6,000	2021	**Siba Saleh, Tasnia Anika**	**Dr. Jonathan Verrett (supervisor)**

UBC Student Services - Work-Learn International Undergraduate Research Award (WLIURA)	Supporting community-engaged learning in engineering & Diverse and Inclusive engineering student leadership development	$6,000 x 2	2021	**Siba Saleh, Tasnia Anika**	**Dr. Jonathan Verrett (supervisor)**
UBC Student Services - Work-Learn International Undergraduate Research Award (WLIURA)	Effective design instruction and assessment in Chemical & Biological Engineering	$6,000	2019 & 2020	**Matheus Cassol**	**Dr. Jonathan Verrett (supervisor)**
UBC Teaching and Learning Enhancement Fund (TLEF) for Online Transition and Faculty of Applied Science	Funding for departmental support for transitioning to online teaching due to COVID-19.	$41,226	2020	**Dr. Jonathan Verrett (40%)**	Dr. Gabriel Potvin, Dr. Louise Creagh, Dr. Alireza Bagherzadeh, Dr. Charles Haynes
UBC Open Educational Resources Fund (TLEF)	Adopting Interactive learning resources for an introductory chemical engineering design course (CHBE 220)	$19,356	2020	**Dr. Jonathan Verrett**	
UBC Undergraduate Program Evaluation and Renewal (TLEF)	Evaluating student outcomes in Chemical and Biological Engineering to ensure impactful program redesign	$69,976 (2019) $59,726 (2020) $47,438 (2021)	2019 - 2021	Dr. Peter Englezos (Dept. Head up to July 2019), Dr. Charles Haynes (Dept Head July 2019 – onwards)	Dr Louise Creagh, **Dr. Jonathan Verrett (40%),** Dr. Charles Haynes, Dr. Dusko Posarac, Dr. Bhushan Gopaluni, Dr. Gabriel Potvin, Mr. Jim Sibley
UBC Center for the Integration of Research, Teaching and Learning	Teaching as Research: Team Cohesion in Design courses in an online setting	$3,500	2020	Ms. Madhieh Eghtesad	**Dr. Jonathan Verrett (supervisor)**
UBC Institute for Scholarship of Teaching and Learning (ISoTL)	Student usage patterns in WeBWorK in Second-Year Engineering	$600 & 70 hours GRA support	2019	Dr. Agnes d'Entremont	Dr. Negar M. Harandi, Dr. Juan Abelló, **Dr. Jonathan Verrett (25%)**,

UBC Teaching and Learning Enhancement Fund (TLEF)	Math Doesn't Need to Be Hard: Integrating Experiential Learning and Interactive Online Resources for Chemical Engineering	$33,545 (2018) $12,785 (2019) $3,651 (2020)	2018 - 2020	Dr. Bhushan Gopaluni	Dr Vikramaditya Yadav, **Dr. Jonathan Verrett (50%)**
UBC Teaching and Learning Enhancement Fund (TLEF)	Flash Feedback for Second-Year Engineering (FF2E): Personalized Experiential Learning with Instant Feedback Through Shared WeBWorK Resources	$38,878 (2018) $11,092 (2019)	2018 & 2019	Dr. Agnes d'Entremont	Dr. Negar M. Harandi, Mr. Jim Sibley, **Dr. Jonathan Verrett (25%)**, Dr. Patrick Walls
BC Campus - Open Education	Open Education Advocacy and Research Fellow	$2,000	2018	**Dr. Jonathan Verrett**	
BC Campus - Open Education	Open Education Resources Grant: WeBWorK online Homework Problems for Mechanical and Chemical Engineering Courses	$7,500	2018	**Dr. Jonathan Verrett (40%)**	Dr. Agnes d'Entremont, Dr. Patrick Walls, Dr. Peter Cripton, Mr. Jim Sibley
UBC CTLT Faculty Associate Program	Integrating and measuring the effect of design in the 2nd and 3rd year of CHBE curriculum.	$10,000 (2017), $10,000 (2018)	2017 & 2018	**Dr. Jonathan Verrett**	
UBC Teaching and Learning Enhancement Fund (TLEF)	Open ChemE: Increasing authentic student learning through open educational resources (CHBE 241)	$27,977	2017	**Dr. Jonathan Verrett**	
UBC Center for the Integration of Research, Teaching and Learning	Teaching as Research: Evaluating the Impact of educational experiences on student learning	$7,000	2017	Mr. Amir Maleki	**Dr. Jonathan Verrett (supervisor)**

TBD* - Indicates future funding to be awarded based on yearly progress reports

(f) Formal educational leadership responsibilities

Curriculum Design Integration & Faculty Associate Program
The CHBE department's continual program review for accreditation has identified the opportunity to integrate greater design content into the 2nd and 3rd year of the CHBE program. I have brought resources and expertise to the department to assist with this process by being selected to be part of the Faculty Associate Program with CTLT. Progress has been made following the first year in implementing design projects in CHBE 376 Computer Flowsheeting, as well as a successful TLEF grant to help implement design projects in CHBE 355: Kinetics and Reactor Design, in collaboration with Dr. Vikramaditya Yadav and Dr. Bhushan Gopaluni. In 2018W we have continued to refine design projects in the above courses as well as expand implementation as part of the CHBE 362: Process and Environmental Engineering Laboratory as well as CHBE 243: Introduction to Chemical and Biological Engineering Process and Technology. In 2019W

Advisor - **CHBE Student Design Teams**
I have been assigned as the advisor for a number of design related teams in the department including ChemEcar and Engineers for a Sustainable World. I believe these activities contribute significantly to student design experience and hope to increase student participation in these activities. I have done this by mentoring students, ensuring safety, and providing logistical support to groups in finding space and acquiring resources such as funding for conference travel. More information on this can be found in section 11 of the CV, service to the university as well as in my Teaching Dossier.

(g) Innovation in the use of learning technology

(h) Other educational leadership contributions

- Steering Committee Member, National Initiative on Capacity Building in Engineering Leadership (NICKEL), Sept 2021-present
- Formative Peer Review of Teaching Reviewer, CTLT, January 2017 onwards, I have conducted 3 formative teaching reviews with colleagues in the Faculty of Applied Science and Pharmaceutical Sciences by observing their classroom teaching and providing written and oral feedback. These colleagues were Dr. John Frostad (CHBE) and Dr. Paul Lusina (Electrical and Computer Engineering), Alex Tang (Pharmaceutical Sciences)
- Member and contributor, Open Education Working Group (Open Pack), I have developed and delivered workshops to showcase open education resources and initiatives these workshops are detailed in section 8g, February 2017 onwards.

10. SCHOLARLY AND PROFESSIONAL ACTIVITIES

(a) Areas of special interest and accomplishments

(b) Invited Presentations (Identify whether International/National/Local)

- Invited plenary keynote. Canadian Engineering Education Association Conference. Ron Britton Vanguard Award Winner. June 23, 2022
- Invited Young Faculty Presenter (International): “Educational Innovation Using Open Educational Resources”, Computer Aids in Chemical Engineering (CAChE) 50th Anniversary Conference, Breckenridge, Colorado (July 19-20, 2019)

(c) Other Presentations

(d) Other

(e) Conference Participation (Organizer, Keynote Speaker, etc.)

- Student program co-chair, 2022 Canadian Chemical Engineering Conference (CCEC). Responsible for planning student competitions, tours, workshops. ~100 student delegates to be held in Vancouver, February 2022 – October 2022.
- Co-Chair, 2022 National Initiative on Capacity Building in Engineering Leadership (NICKEL) VII Conference. Responsible for planning program, accommodations, venue and food for a conference with ~50 delegates to be held at UBC, ~1 hour per week, July 2021-August 2022.
- Co-Chair, 2022 ASEE Zone IV Conference. Responsible for technical program, planning accommodations, venue and food for a conference with ~150 delegates to be held at UBC, ~4 hour per week, Aug 2020-May 2022.
- Logistics Chair, 2018 Canadian Engineering Education Association (CEEA) Annual Conference. Responsible for planning accommodations, venue, food and keynote travel for conference with ~300 delegates held at UBC, ~ 200 hours, Sept 2017-June 2018.

11. SERVICE TO THE UNIVERSITY

(a) Areas of special interest and accomplishments

My service to the university has focused on supporting student experiences outside of the curriculum, particularly in design and laboratory work, and working to ensure that all students are thriving at the university.

My impact as a student advisor to a number of student initiatives is demonstrated through student teams' size and successes. The ChemEcar team, consists of students from Chemical and Biological, Mechanical, Mining and Electrical and Computer Engineering. It was one of two teams selected to represent Canada at the World Congress of Chemical Engineering ChemEcar competition in Barcelona Spain in October 2017. I have also coordinated for 21 students to attend the AIChE Regional Conference for ChemEcar, oral and poster presentations in April 2017. This is the largest group of students ever attending from our department. These strong attendance numbers were present in subsequent years at regional competitions in Montana in 2018 (11 students) and Idaho in 2019 (16 students), where students also joined to present their research work.

I strongly believe that engineering should be welcoming to everyone including gender, racial and sexual minorities. In order to help advance diversity in the engineering profession I have completed positive space training and seek to make the university environment, and most especially my classroom, a welcoming space for everyone. I have collaborated on research on gender in engineering with Dr. Agnes d'Entremont (Mechanical Engineering) and Dr. Kerry Greer (Sociology) resulting in published work. I have also been keen to focus on student wellness and serve as my department's faculty wellness liaison, bringing resources around health and wellness to the attention of colleagues and students. In order to help members of the broader community understand the importance and impact of engineering on society, I also actively participate in outreach events such as Applied Science Open House, first year engineering information sessions as well as lead lab tours for first year students as well as visitors to the department.

(b) Memberships on committees, including offices held and dates

Department:

- Member, Equity, Diversity and Inclusion (EDI) committee, April 2021-present
    - Roughly bi-monthly meetings focusing on EDI in CHBE, 10 hours per year
- Member, Branding committee, April 2021-present
    - Roughly bi-monthly meetings focusing on branding and communications in CHBE, 10 hours per year
- Member, Curriculum and accreditation Committee, September 2017-August 2020
    - Roughly monthly meetings to review the curriculum for each year to see where and if changes are required. 20 hours per year.
- Member, Merit and Performance Salary Adjustment (PSA) Committee, November 2017, May 2019, May 2020, May 2021, May 2022
    - Reviewed ~25 department members for merit and PSA over review periods, 6 hours each time.
- Member, CHBE Instructor Faculty Search Committee, May – June 2019

    - Reviewed 21 applications, assisted in conducted 5 skype interviews and 3 in-person interviews, 30 hours.
- Member, Lab Committee, September 2017 – April 2018
    - Reviewing lab procedures, safety, new lab development and equipment needs. 10 hours per year.
- Member, Accreditation Committee, September 2016-August 2017
    - Organized and reviewed accreditation documents to prepare for accreditation visit in November 2017, 30 hours.
- Faculty Advisor, UBC ChemEcar, 2016W-present academic year
    - Supervise use of student lab room. Review and revise lab procedures for experimental safety. Support student travel and funding requests accompanying students to regional conferences in Oregon (2017), Montana (2018) and Idaho (2019), virtually (2020 & 2021) as well as national conferences in San Francisco (2016), Pittsburgh (2018) and virtually (2021). 20 hours per year.
- Faculty Advisor, Engineers for a Sustainable World, 2016W-present academic year
    - Co-supervise use of Lab space with Dr. Naoko Ellis. Responsible for safety of biodiesel reactor. 10 hours per year.
- Faculty Advisor, Biological Internet of Things (formerly CheBeer Project), 2016W-present academic year
    - Supervise use of lab rooms. Review and revise procedures for experimental safety. Support student travel and funding requests. Notable achievements by students include a workshop on the project at the American Institute of Chemical Engineers 2017 National Conference attracting over 100 participants. 5 hours per year.
- Faculty Advisor, UBC AIChE Chapter and Envision, 2017W – present academic year
    - Advise the undergraduate Envision club, which unites design teams focusing on chemical and biological engineering applications and connects them to AIChE. Support student travel and funding requests. As part of this, I organize student attendance for oral and poster presentations at AIChE regional student conferences. Including coordinating travel and hotel. We usually have an average of 6 students attending and this is coordinated with ChemEcar. 5 hours per year.
- Faculty Advisor, UBC Thunderbikes, 2018W - present academic year
    - Advisor providing insight on space and funding, 5 hours per year.
- Faculty Advisor, Chemical Engineering Undergraduate Students' Society, 2016W and 2017W academic year
    - Advised students on industry night event and assisted in attending Canadian Society of Chemical Engineering Conference. 5 hours per year.
- Faculty Advisor, Engineers Without Borders, 2016W-2018W academic year
    - Advisor for CHBE assisting students with funding. 2 hours per year.

Faculty:

- Member, APSC Digital Design Studio Committee, planning and providing input for a new space for APSC focusing on digital design and fabrication with strong collaboration between Engineering and the School of Architecture and Landscape Architecture (SALA), 15 hours, December 2021-present
- Member, Professional Activities Fund (PAF) Governance Committee, 2019W, 2020W, 2021W academic year - present, reviewing rules for awarding funds and ensuring the fund is sustainable, 5 hours per year.

- Member, Professional Activities Fund (PAF) Funding Committee, 2019W, 2020W, 2021W academic year - present, reviewed ~70 team applications for funding, 25 hours per year.
- Member, Broad Based Admission (BBA) Committee, 2016W & 2017W academic year
    - Ranked roughly 180 student applications in 2016W (20 hours) and 90 in 2017W (10 hours).
- Member of delegation promoting student exchange ties with Technical University of Munich (TUM)
    - Travelled to Munich for 1 week to meet with faculty and staff and discuss existing programs and methods of increasing student exchange between UBC and TUM, May 7-11, 2018.

University:

- Member, iPeer Working Group, Meeting every 2 months to provide feedback on improving UBC's peer evaluation tool (iPeer), 6 hours, June 2021-June 2022
- Member, Open Educational Resources Fund Selection Committee, in-depth ranking of 7 applications and selected top applications out of 21 total, 6 hours, January 2020
- Member, UBC Premier Wesbrook Scholar's Selection Committee, December 2018, 2019, 2020
    - ranked roughly 100 applications for UBC's most prestigious scholarships with values up to $15,000, 20 hours per year.

(c) Other service, including dates

Department:

- Judge for CHBE research day student poster presentation competition, April 29, 2022
- Faculty Wellbeing Liaison, Health and Wellness UBC, remain informed through training and disseminate information on health and wellness initiatives at UBC for CHBE faculty, 5 hours per year, 2018W – present.
- Faculty Representative, CHBE First Year Info Session, represented CHBE and gave information about the program to first year engineering students, 2 hours, March 22, 2018, 2 hours, March 15, 2019
- Faculty Representative, APSC First Year Fair, represented CHBE and gave information about the program to first year engineering students, 3 hours on March 14, 2018 and 2 hours on March 15, 2019, 3 hours on March 11, 2020, 1 hour on March 10, 2022.
- Host, Dr. Maura Borrego visiting virtually from University of Texas at Austin, coordinated scheduling for individual meetings and seminar, November 12, 2021
- Host, Dr. Lisa Bullard visiting from North Carolina State University, coordinated scheduling for individual meetings, seminar and graduate teaching workshop, March 9, 2018
- Speaker, Beyond STEM Career Fair, Burnaby Central Secondary School, outreach for he CHBE department and UBC to secondary school students, ~100 participants, 3 hours, December 13, 2017
- Summer Student Lab Supervisor, coordinated the work of three departmental work-learn summer students focusing on laboratory development and the Vancouver Summer Program, May-August 2017

- Industry Advisory Council (IAC) presentations, presented updates on the accreditation process and IAC feedback as well as my role in the department and the integration of design into the 2nd and 3rd year curriculum, 3 hours, May 4, 2017
- Sanofi Biogenius host, hosted the Sanofi Biogenius competition in collaboration with Dr. Gabriel Potvin and Marlene Chow, my role was in ensuring the site was set up as well as giving student participants a tour of the department, 4 hours, April 11, 2017
- Lab Tour Host, UBC Minigeers, 2 hours, March 4, 2017
- Undergraduate Student Research Award (USRA) Review and Ranking, February, 2017
- Judge for CHBE research day student oral presentation competition, January 26, 2017

Faculty:

- Mentor, Shad Valley program at UBC, my role was meeting with a student team to guide them in their design process for developing a product as part of their program project, 4 meetings over 6 hours, July 2018
- Host and Lab Tour Guide, UBC Applied Science Open House and Future Leaders Breakfast, 7 hours, Nov 26, 2016, 9 hours, Nov 18, 2017, 9 hours, Nov 24, 2018, 8 hours, Nov 2, 2019, 2 hours (online), Nov 7, 2020, 6 hours, November 20, 2021.

University:

- Adjudicator, TA Training Committee, Reviewing TA training programs for funding from units across UBC, 10 hours, June 2021
- Adjudicator, Scholarship of Teaching Learning (SoTL) Seed grants, UBC CTLT, adjudication and feedback for 19 applicants, 3 hours, June 2020.
- Adjudicator, Teaching as Research (TAR) grants, UBC Centre for the Integration of Research, Teaching and Learning (CIRTL), adjudication and feedback for 11 applicants, 5 hours, July 2018, adjudication and feedback for 5 applicants, 3 hours, July 2019.
- Co-chair, UBC Educational Leadership Network (ELN), August 2018-June 2020
- Community and Membership Coordinator, UBC ELN (previously UBC Instructor Network), August 2016-August 2018
- Positive Space Resource Person, November 2016- present
- Panelist, CTLT external review on workshop sessions, November 28, 2016

Continuing Education related to service (> 3 hours):

- Occupational First Aid (OFA) level 1, in-person course and test on first aid, broadly applicable in the department but specifically for laboratory instruction, 8 hours, August 10, 2018
- Professional Practice Examination, EGBC, passed an in-person test required as part of the application for a professional engineering license, 4 hours, April 4, 2017
- Professional Engineering and Geoscience Practice in BC, EGBC, Online seminar providing guidance on legal and ethical issues for engineers in BC, required as part of the application for a professional engineering license, 6 hours, March 28, 2017
- Health & Safety Committee Training Course, UBC Risk Management Services (RMS), Online and in-person training course required to be a member of a departmental health and safety committee, 5 hours, November 8, 2016

Workshops attended related to service (≤ 3 hours):

- Biosafety Training, UBC Risk Management Services (RMS), Online and in-person training course required for handling biologically hazardous materials, 2.5 hours, January 24, 2018
- Positive Space Workshop, UBC Inclusivity and Diversity Office, in-person workshop on creating an inclusive space at UBC for gender and sexual minorities, 2 hours, Nov 21, 2016
- Chemical Safety Course, RMS, Online and in-person training on laboratory chemical safety, required for all personnel working in lab environments with hazardous chemicals, 3 hours, September 1, 2016
- Engineering Design Team Safety Orientation, RMS, online workshop on safety training specific to engineering design teams, 0.5 hours, August 9, 2016

12. SERVICE TO THE COMMUNITY

(a) Memberships on scholarly societies, including offices held and dates

- Member, American Institute of Chemical Engineers, 2017-present
- Member, Membership Committee, American Institute of Chemical Engineering Education Division, 2017-present.
- Member, Canadian Engineering Education Association, 2013-present
- Member, Society of Chemical Industry, 2011-2016
- Member, Canadian Society for Chemical Engineering, 2008-2017, 2019-2021

(b) Memberships on other societies, including offices held and dates

(c) Memberships on scholarly committees, including offices held and dates

- BC Campus STEM OER Advisory Committee, member, providing advice and feedback on STEM OER initiatives across BC, meeting once every 3 months, 7.5 hours, January 2020 – February 2021
- AIChE Student Awards Committee, member, evaluating 3 outstanding student chapter advisor nominations and 57 student chapter nominations, 7 hours, July 2019; evaluating 4 outstanding chapter advisors and 56 student chapter nominations, 7 hours, September 2020, 7 hours, September 2021
- EGBC Scholarship Committee, member, evaluating 4 nominations for Frank Baumann Scholarship, 2 hours, Oct 2018; evaluating 26 nominations for entrance and transfer scholarships, 6 hours, August 2019; evaluating 14 nominations for the BC Hydro Scholarship, 4 hours, Dec 2019; evaluating 13 nominations for entrance and transfer scholarships, 4 hours, August 2020; evaluating 20 nominations for entrance and transfer scholarships, 5 hours, Jan 2022

(d) Memberships on other committees, including offices held and dates

(e) Editorships (list journal and dates)

(f) Reviewer (journal, agency, etc. including dates)

External Promotion Review:

- McMaster University, 1 review, 2022.

Journals:

- Education for Chemical Engineers, 1 journal article, 2020.
- Chemical Engineering Education,1 journal article, 2019. 1 teaching tips article, 2022.
- Journal of Natural Gas Science & Engineering, 1 journal article, 2016, to maintain my connection to research and incorporate this into my teaching.

Conferences:

- American Society for Engineering Education (ASEE) Annual Meeting,
  - 2 abstracts, Minneapolis 2022
  - 4 abstracts and 2 articles, Virtual 2021
  - 2 abstracts and 2 articles, Montreal 2020
- Canadian Engineering Education Association (CEEA) Annual Meeting,
  - Program Chair Committee member overseeing review of 7 articles, Charlottetown 2021
  - 4 articles, Montreal 2020
  - 5 abstracts and 2 articles, Vancouver 2018
  - 2 abstracts, Toronto, 2017
- American Society for Engineering Education (ASEE) Zone Meeting,
  - 5 abstracts, 6 articles Vancouver 2022

Books:

- Routledge,
  - 1 textbook proposal focused on introductory engineering analysis and design, 2022
- Chemical Engineering Education
  - Book review of Process Industry Economics: Principles, Concepts and Applications, 2nd Edition, by D. Brennan. 2021

(g) External examiner (indicate universities and dates)

(h) Consultant (indicate organization and dates)

(i) Other service to the community

- Canadian Chemical Engineering Conference (CCEC 2019), judging three-minute pitch competition, 4 hours, and chairing 2 presentation sessions, 4 hours, Oct 20 - 22, 2019
- American Institute of Chemical Engineers (AIChE), assisting with organizing national undergraduate student conference including safety checks for ChemEcar competition and judging undergraduate research posters, 4 hours, Nov 11-13, 2016, 8 hours, Oct 27-29, 2018. 6 hours, Nov 14, 2021
- AIChE, assisting with organizing regional undergraduate student conference including safety checks for ChemEcar competition and judging undergraduate research posters, 8 hours, April 21-23 2017, 8 hours, April 13-15 2018, 8 hours, April 26-28,2019, 12 hours, April 30 – May 1, 2022 (hosted by UBC), 8 hours, April 30, 2022

- AIChE Student Design Competition judge evaluating 4 plant design entries (~80 pages each), 8 hours, Aug 2017, 8 hours, Aug 2018.

13. AWARDS AND DISTINCTIONS

(a) Awards and nominations for Teaching awards (indicate name of award, awarding organizations, date)

While at UBC

- Lifetime Achievement Teaching Award, UBC Department of Chemical and Biological Engineering Undergraduate Club, In recognition of sustained teaching impact, 2021W academic year
- Killam Teaching Prize, UBC, highest teaching award at the university with up to three given in the Faculty of Applied Science per year, 2022
- Outstanding Zone Campus Representative (Zone IV) American Society for Engineering Education (ASEE), awarded annually to a campus representative in each of the four ASEE Zones for excellence in serving as liaisons between ASEE and its membership, 2021
- Ron Britton Engineering Education Vanguard Award, Canadian Engineering Education Association (CEEA), awarded annually to a person who, early in their career, has committed to the development of engineering education in Canada through practice and/or research, 2020
- Teaching Award, UBC Department of Chemical and Biological Engineering Undergraduate Club, 2018W, 2019W academic year
- Open Educational Resources Champion Award. UBC Alma Mater Society, October 2019, October 2020
- 2nd Year Teaching Award, UBC Department of Chemical and Biological Engineering Undergraduate Club, 2016W academic year

Prior to Final degree

- Faculty of Engineering Outstanding Teaching Assistant Award, McGill University Faculty of Engineering, 2015

(b) Awards for Scholarship (indicate name of award, awarding organizations, date)

Prior to Final degree

- Transatlantic Partnership for Excellence in Engineering Award, Erasmus Mundus Program, 2013-2014
- Doctoral Canada Graduate Scholarship, National Sciences and Engineering Research Council (NSERC), 2013-2016
- McGill Engineering Doctoral Award, McGill University, 2011-2014
- Master's Canada Graduate Scholarship, NSERC, 2011-2012
- British Society Medal – Top student in chemical engineering, McGill University, 2011
- Society of Chemical Industry Merit Award, Society of Chemical Industry, 2011
- Dean's Honour List, 2011
- Order of Engineers of Quebec (OIQ) Merit Award – 2nd place, OIQ, 2011
- NSERC Undergraduate Student Research Award, 2009 & 2010

(c) Awards for Service (indicate name of award, awarding organizations, date)

(d) Other Awards

14. OTHER RELEVANT INFORMATION (Maximum One Page)

THE UNIVERSITY OF BRITISH COLUMBIA
Publications Record

SURNAME: Verrett **FIRST NAME**: Jonathan **Initials**:
MIDDLE NAME(S): Douglas **Date**: 30/06/2022

Entries listed below are in reverse chronological order by topic area. I use codes to identify the type of contribution

- RJE – Refereed Journal Article in an Educational field (full peer review)
- RJT – Refereed Journal Article in a Technical Field (full peer review)
- RPE – Refereed Proceedings Article in Educational Field (abstract and proceedings article peer reviewed)
- RPA – Refereed Proceedings Article in Educational Field (abstract peer reviewed, proceedings article not reviewed)
- RAE – Refereed Proceedings Abstract in Educational Field
- RPT – Refereed Proceedings Article in Technical Field (abstract peer reviewed, proceedings article not reviewed)
- RAT – Refereed Proceedings Abstract in Technical Field

Key to my contribution:
First Author – typically conceived of and designed the experiment, performed the majority of the experiments in the manuscript and wrote the first draft.
Contributing Author – typically helped with experimental design, completed some experiments and edited the draft manuscript.
Senior Author (last listed) – typically conceived the experimental approach, supervised the work and the writing of the manuscript, and acted as corresponding author for the article.

The above contribution key applies to all works except RPE 1-4 and RAE 1 in which all authors were equal contributors and collaborators and names are listed alphabetically.

1. REFEREED PUBLICATIONS

(a) Journals

Educational

RJE1. **J Verrett**, A Dowling, F Boukavala, Z Ulissi, V Zavala (2020). Computational notebooks in chemical engineering curricula. *Chemical Engineering Education*. 54(3), 143-153. http://orcid.org/0000-0003-4709-6276

Technical

RJT1. **J Verrett,** P Servio (2016). Reaction rate constant of CO2—tetra-n-butylammounium bromide semi-clathrate formation. *Canadian Journal of Chemical Engineering*, 94(11), 2138-2144. doi.org/10.1002/cjce.22612

RJT2. D Posteraro, **J Verrrett,** M Maric, P Servio (2016) The effect of high driving force on the methane hydrate-polyvinylpyrrolidone system. *Journal of Natural Gas Science and Engineering,* 34, 1-5. doi.org/10.1016/j.jngse.2016.06.035

RJT3. H Hayama, M Mitarai, H Mori, **J Verrett**, P Servio, R Ohmura (2016) Surfactant effects on crystal growth dynamics and crystal morphology of methane hydrate formed at gas/liquid interface. *Crystal Growth & Design*, 16(10), 6084-6088. doi.org/10.1021/acs.cgd.6b01124

RJT4. **J Verrett,** JS Renault-Crispo, P Servio (2015). Phase equilibria, solubility and modeling study of CO2/CH4+tetra-n-butylammonium bromide aqueous semi-clathrate systems. *Fluid Phase Equilibria, 388*, 160-168. doi.org/10.1016/j.fluid.2014.12.045

RJT5. D Posteraro., **J Verrett**, M Maric, P Servio (2015). New insights into the effect of polyvinylpyrrolidone (PVP) concentration on methane hydrate growth. 1. Growth rate. *Chemical Engineering Science, 126*, 99-105. doi.org/10.1016/j.ces.2014.12.009

RJT6. Z Wei., EK Kowalska, **J Verrett**, C Colbeau-Justin, H Remita, B Ohtani. (2015). Morphology-dependent photocatalytic activity of octahedral anatase particles prepared by ultrasonication–hydrothermal reaction of titanates. *Nanoscale*, 7, 12392-12404. doi.org/10.1039/C5NR02386F

RJT7. R Jitrwung, **J Verrett,** V Yargeau (2013). Optimization of selected salts concentration for improved biohydrogen production from biodiesel-based glycerol using Enterobacter aerogenes. *Renewable Energy, 50*(0), 222-226. doi.org/10.1016/j.renene.2012.06.049

RJT8. **J Verrett,** P Servio (2012). Evaluating surfactants and their effect on methane mole fraction during hydrate growth. *Industrial and Engineering Chemistry Research, 51*(40), 13144-13149. doi.org/10.1021/ie301931m

RJT9. **J Verrett,** D Posteraro, P Servio (2012). Surfactant effects on methane solubility and mole fraction during hydrate growth. *Chemical Engineering Science, 84*, 80-84. doi.org/10.1016/j.ces.2012.08.009

(b) Conference Proceedings (a standard venue for engineering education research)

Educational – abstract and proceedings article peer reviewed

RPE1. T Anika, S Saleh, **J Verrett** (2022). Implementing community-engaged learning (CEL) in a second-year engineering design course. *American Society for Engineering Education Zone IV Conference 2022 (ASEE Zone IV 2022), Vancouver.*

RPE2. S Saleh, **J Verrett** (2022). Community engaged learning (CEL) in co-curricular student groups. *American Society for Engineering Education Zone IV Conference 2022 (ASEE Zone IV 2022), Vancouver.*

RPE3. T Anika, **J Verrett** (2022). Exploring Diverse and Inclusive Engineering Student Leadership Development. *American Society for Engineering Education Zone IV Conference 2022 (ASEE Zone IV 2022), Vancouver.*

RPE4. M Cassol, **J Verrett** (2020). Evaluating a new second-year introduction to chemical engineering design course using concept mapping. *American Society for Engineering Education Annual Conference 2020 (ASEE 2020), Virtual On Line. https://doi.org/10.18260/1-2--34593*

RPE5. G Mcsorley, A d'Entremont, **J Verrett**, Nadine Ibrahim, John Dickinson, Rick Sellens, Deena Salem (2020). Open Educational Resources in Undergraduate Education: Opportunities and Challenges. *Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2020), Montreal, Canada. https://doi.org/10.24908/pceea.vi0.14183*

RPE6. A d'Entremont, **J Verrett**, S Hu, J Abello, N M Harandi, T Lorenzo, W C W Fong (2020). Multi-factorial patterns of online homework usage in engineering: a pilot study.

Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2020), Montreal, Canada. https://doi.org/10.24908/pceea.vi0.14122

RPE7. AG d'Entremont, H Gustafson, **J Verrett**, KA Lyon, K Greer, A Ali. (2017) Gendered Words in US Engineering Recruitment Documents. *American Society for Engineering Education Annual Conference 2017 (ASEE 2017), Columbus, OH. https://doi.org/10.18260/1-2--28401*

Educational – abstract peer reviewed, full proceeding article not peer reviewed

RPA1. G Potvin, **J Verrett** (2020). Curriculum Renewal for Better Design-Related Student Outcomes in Second-year Chemical Engineering. *Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2020), Montreal, Canada. https://doi.org/10.24908/pceea.vi0.14126*

RPA2. A d'Entremont, N M Harandi, **J Verrett** (2019). Developing for and deploying WeBWorK across disciplines in second-year engineering. *Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2019), Ottawa, Canada. https://doi.org/10.24908/pceea.vi0.13702*

RPA3. G Co, Z Xu, G Sgarbi, S Cheng, Z Xu, A d'Entremont, J Abelló, N M Harandi, **J Verrett** (2019). Student submission patterns in online homework and relationships to learning outcomes: a pilot study. *Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2019), Ottawa, Canada. https://doi.org/10.24908/pceea.vi0.13725*

RPA4. M Marshall, L Wilkinson, V Yargeau, M Orjuela-Laverde, M Bloom, B Caron, L Meunier, G Zilberbrant, P Okrutny, **J Verrett,** M Shoen, E Qi, T Teslenko, K Miller, H Golpour (2019). Preparing Tomorrow's Engineer-Communicators: A Review of Models for Effective Communication Instruction. *Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2019), Ottawa, Canada. https://doi.org/10.24908/pceea.vi0.13820*

RPA5. A Maleki, C Piccolo, **J Verrett** (2018). Effect of a mini lesson on self-regulated learning on students' learning. *Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2018), Vancouver, Canada. doi.org/10.24908/pceea.v0i0.13023*

RPA6. J S Lee, **J Verrett** (2018). WeBWorK as an open online homework system in a second-year material and energy balances course. *Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2018), Vancouver, Canada. doi.org/10.24908/pceea.v0i0.13047*

RPA7. M Schoen, T Teslenko, E Qi and **J Verrett** (2018). Integrating Writing and Engineering Instruction to build a foundation for student success in their engineering disciplines. *Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2018), Vancouver, Canada.*

RPA8. **J Verrett** (2017). OpenChemE: Open Educational Resources for Material and Energy Balances. *Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2017), Toronto, Canada.* doi.org/10.24908/pceea.v0i0.7338

RPA9. **J Verrett**, AM Kietzig, M Orjuela-Laverde (2015). I flipped my tutorials: A case study of implementing active teaching strategies in Engineering. *Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2015), Hamilton, Canada.* doi.org/10.24908/pceea.v0i0.5750

RPA10. S Alajek, A Ham, M Heather, **J Verrett** (2013). Blurring the line between for-credit curricular and not-for-credit extracurricular engineering learning environments.

Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2013), Montreal, Canada. doi.org/10.24908/pceea.v0i0.4800

Educational – abstract only peer reviewed

RAE1. G Potvin, **J Verrett** (2021) Curriculum Renewal for the Early Integration of Design Education in Chemical Engineering. *Canadian Chemical Engineering Conference (CCEC 2021)*, Virtual.

RAE2. **J Verrett** (2021). Open online notes and practice problems for a second-year chemical engineering design course. *Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2021), Charlottetown, Canada.*

RAE3. **J Verrett** (2019). Program enhancement: Faculty reflections on the graduate attribute process five years on. *Canadian Chemical Engineering Conference (CCEC 2019), Halifax, Canada.*

RAE4. **J Verrett** (2019). Synergy Through Sharing: Open Resources and Technological Innovation in Chemical Engineering Education. *Canadian Chemical Engineering Conference (CCEC 2019)*, Halifax, Canada.

RAE5. A d'Entremont, **J Verrett** (2019). Implementing the WeBWorK open online homework system in second-year courses across a faculty of Engineering. *Cascadia Open Education Summit 2019, Vancouver, Canada.*

RAE6. **J Verrett** (2019). WeBWorK Online Homework in Material and Energy Balances. *The 87th Annual Pacific Northwest Section American Society for Engineering Education Conference (ASEE PNW 2019), Corvallis, OR.*

RAE7. S Zaid-Alkailani, V Chiew, S Lim, J Lo, **J Verrett** (2017). Flipping Material and Energy Balances using Team-Based Learning. *Proceedings of the 67th Canadian Chemical Engineering Conference (CSChE2017), Edmonton, Canada.*

RAE8. **J Verrett** (2013). The Role of Peer-to-Peer Learning in Improving Pedagogical Skills of Teaching Assistants. *Proceedings of the Canadian Engineering Education Association Annual Conference (CEEA 2013), Montreal, Canada.*

Technical – abstract peer reviewed, full proceeding article not peer reviewed

RPT1. **J Verrett,** D Posteraro, J Ivall, S Brennan, P Servio (2014). Understanding the effect of kinetic additives on gas hydrate growth. *Proceedings of the 8th International Conference on Gas Hydrates (ICGH8-2014), Beijing, China.*

Technical – abstract only peer reviewed

RAT1. **J Verrett,** P Servio (2015). Kinetics of carbon dioxide capture using tetrabutylammonium bromide semi-clathrates. *Proceedings of the 65th Canadian Chemical Engineering Conference (CSChE2015), Calgary, Canada.*

(c) Other

2. NON-REFEREED PUBLICATIONS

(a) Journals

(b) Conference Proceedings

(c) Other

3. BOOKS

(a) Authored

(b) Edited

(c) Chapters

4. SPECIAL COPYRIGHTS

5. ARTISTIC WORKS, PERFORMANCES, DESIGNS

6. OTHER WORKS

7. WORK SUBMITTED (including publisher and date of submission)

8. WORK IN PROGRESS (including degree of completion)

WIP1. M Cassol, **J Verrett** (2022). Assessing evolution of discipline-based design knowledge in second-year chemical and biological engineering students. 80% complete, data collected and analyzed, finalizing manuscript, submission for fall 2022 in a journal such as Journal of Engineering Education.

WIP2. L Creagh, **J Verrett** (2022). Undergraduate program renewal: Improving the continuous improvement process. 30% complete, literature review and improvement activities complete, analysis and publication for fall of 2022.