

THE UNIVERSITY OF BRITISH COLUMBIA
Curriculum Vitae for Faculty Members

Date:

Initials: CGB

1. **SURNAME:** Berg (previously Gibbs) **FIRST NAME:** Celina
MIDDLE NAME(S): Gay
2. **DEPARTMENT/SCHOOL:** Computer Science (25%) and Vantage College (75%)
3. **FACULTY:** Science
4. **PRESENT RANK:** Instructor 1 – Tenure Track **SINCE:** July 1, 2015
5. **POST-SECONDARY EDUCATION**

University or Institution	Degree	Subject Area	Dates
University of Victoria	PhD ¹	Computer Science	2005-2011
University of Victoria	MSc ²	Computer Science	2004-2006
University of Victoria	BSc	Computer Science	2002-2005

Special Professional Qualifications

6. **EMPLOYMENT RECORD**

(a) *Prior to coming to UBC*

University, Company or Organization	Rank or Title	Dates
University of Victoria	Limited-Term Assistant Teaching Professor	2013 – 2015
University of Victoria	Sessional Instructor	2011 – 2013
University of Victoria	Post Doctoral Fellow	2011 – 2015
University of Victoria	Teaching Assistant	2005 – 2010
University of Victoria	Research Assistant	2004 – 2011

¹ Thesis Title: *Building a foundation for the future of software practices within the multi-core domain*

² Thesis Title: *Sustainable System Infrastructure and Big Bang Evolution: Can Aspects keep pace?*

(b) *At UBC*

Rank or Title	Dates
Instructor I – Tenure Track	July 1, 2015 – present

(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*

It is my belief, that in order to be an effective teacher, one must be willing to learn. As I teach, I try to absorb as much of the activity surrounding a course offering, learn from it and feed this information into my course organization, lectures and assignments to both motivate and guide the delivery of course material. I look to the students to understand what inspires them to learn, be it research, industry, or entrepreneurial endeavors while I depend on the cohesive support of the teaching team for feedback to continually refine the delivery. This philosophy requires a direct connection with students which in the past I have established through well attended office hours and interaction in the classroom. At a large institution like UBC I have been able to connect with students in new ways, including my involvement in the Prof-in-Rez program, volunteering for both student organized events and department led outreach activities and in leading large teaching teams of undergraduate TAs.

Learning requires a desire to learn. Motivation and the level of desire will vary dramatically in any group of students. While I believe students must want to learn, it is my job as a teacher to fuel this desire by keeping the material relevant. I draw from both research and industry to do this. By highlighting material from publications in related research areas, students become exposed to research as well as innovation and state-of-the-art, providing context to the material they are learning in class. Additionally, learning and drawing from practices in both industry and entrepreneurial endeavors further motivates and gives context to the material covered in lecture and assignments. Applying this at first and second

year, can be done by simple coaching assignments within real-world problems whereas, in upper-level courses, application can be much more explicit such as reviewing publications, applying industry techniques within assignments or hosting guest lecturers from industry.

As my teaching evaluations reflect, I enjoy interacting with students in the class and in office hours. This is much easier to do with small class sizes but I have been able to scale problem-solving, active-learning style exercises to classes 200+ in size. I am always looking for ways to scale my approaches to larger class sizes and to reach those students who are not as interactive with the teaching team. I feel to grow as an educator I need to be able to have an impact with all student learning styles and provide a quality education for all. I experimented early in my teaching career with augmenting lectures with short, online tutorial videos leveraging screen capture software to provide extra explanation for difficult concepts. This philosophy and approach has aligned well with the active-learning, problem-based lecture style of first-year classes that I am now teaching at UBC.

Holding onto my desire to provide a quality education for all, I believe we must become cognizant of the students for which a given teaching style is not working. Teaching in Vantage College has allowed me to work with small class sizes of English Language Learners (ELLs) in which I am able to identify patterns of student challenges such as study strategies, time management skills, verbal communication and oral comprehension. These challenges are with skills that are necessary for success in the active-learning environment that is largely different from what they have experienced in the past. I have been experimenting with ways to support student development of these skills including basic awareness of styles of study, encouraging Self-Regulated Learning (SRL), monitoring student self-efficacy across the term and providing students with interactive pre-lecture preparation in the form of a programming practice tool.

While I believe teaching strategies and student motivation are a significant part of teaching responsibilities, a strong cohesive teaching team can serve to significantly improve a student's course experience and ultimately their success. While an instructor's name is assigned to a particular course, the teaching team including lab instructors, markers and support staff are also on the front lines, working with and encouraging students along the way. I believe it is critical to work closely with a teaching team of both teaching assistants and department consultants to monitor successes and failures in all aspects of a student's participation. Tracking progress from lectures and labs to assignments and exams to feed into the refinement of a course offering creates an environment in which students can get the most out of the learning support available.

Very often, the teaching team also involves multiple professors, sometimes in different sections offered in the same term, but also over time—across terms and years. Collaborating with other professors can help to expand a set of course materials and allow an instructor to experiment with and share innovative teaching techniques. In courses like those that I am currently teaching, where the curriculum and core materials are set there is still potential to develop and

share supplementary lecture materials. For example, I have shared with interested instructors my visualizations created to help CPSC 110 students develop a mental model of new concepts by linking to their existing knowledge. I am fortunate to have worked with a diverse set of instructors, students and staff that have mentored me and influenced my teaching philosophy; I look forward to collaborating further with an expanded teaching team to continue to evolve both my practices and teaching curricula.

(b) *Courses Taught at UBC*

- CPSC 213 – Introduction to Computer Systems (Jan 2018)
- CPSC 110 – Computation, Programs and Programming
- APSC 160 – Introduction to Computation in Engineering Design
- SCIE 113 – First-year Seminar in Science

Session	Course Number	Total Scheduled Hours	Class Size	Total Hours Taught per Course		
				Lectures	Tutorials	Office Hours
2015W1	CPSC 110	74	183	35		26
2015W1	APSC 160 (Vantage)	78	37	27		13
2015W2	CPSC 110 (Vantage)	88	30	36		26
2016S	CPSC 110	74	186	52		26
2016W1	APSC 160 (Vantage)	86	84	24		26
2016W1	CPSC 110	71	274	37.5		36
2016W2	CPSC 110 (Vantage)	84	60	36		36
2016W2	SCIE 113 (Vantage)	39	22	30		26
2017S	CPSC 110	74	181	52		26
2017W1	APSC 160 (Vantage)	86	92	24		26
2017W2	CPSC 110 (Vantage)	84	75	36		36
2017W2	CPSC 213 (Vantage)	84	160	36		26

(b) *Courses Taught at the University of Victoria*

- (2014W2, 2013W1, 2012W1) CSC 110 – Fundamentals of Programming I

- (2014W2, 2014S, 2013S, 2012W2) SENG 310 – Human Computer Interaction
- (2014W2) CSC 106 – The Practice of Computer Science
- (2014W1) CSC 116 – Fundamentals of Programming II: Engineering Applications
- (2014W1, 2006S) CSC 115 – Fundamentals of Programming II
- (2013W2) CSC 305 – Introduction to Computer Graphics
- (2013W1) CSC 167 – Game Strategy, Interaction and Design
- (2007S) SENG 330 – Object-Oriented Software Development

(c) *Graduate Students Supervised (If Applicable)*

Student Name	Program Type	Year		Supervisory Role (supervisor, co-supervisor, committee member)
		Start	Finish	

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

Overall, the instructor was an effective teacher.

Session	Course Number	Class Size	Response Rate	Mean	Median	SD
2015W1	CPSC 110	183	68%	3.7	4	1.01
2015W1	APSC 160 (Vantage)	37	70%	4.2	4	0.56
2015W2	CPSC 110 (Vantage)	30	100%	4.2	5	1.03
2016S	CPSC 110	186	66%	4.6	5	.57
2016W1	APSC 160 (Vantage)	84	63%	4.2	4	.88

2016W1	CPSC 110	274	65%	4.4	5	.70
2016W2	CPSC 110 (Vantage)	84	79%	4.6		
2016W2	SCIE 113 (Vantage)	22	82%	4.6		
2017S	CPSC 110	182	67%	4.5		

(e) *Continuing Education Activities*

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

(g) *Other*

9. **EDUCATIONAL LEADERSHIP**

(a) *Areas of special interest and accomplishments*

I have been teaching in a university setting since 2005, first as a TA and then starting in 2011 as a lecturer before taking on my current position at UBC. I attribute my teaching approach to the time I spent teaching in small class size settings. I learned much about the range of learners and learning styles from the close interaction with students. The real-time feedback in the small classes developed my active-learning approach giving me confidence to pause in a class size of 200 and wait for feedback, sometimes auditory but often through lip-reading or body-language interpretation. I also spent some of my early teaching years doing outreach in First Nations communities. This experience demonstrated again the variety of learning styles in a classroom as well as the need to motivate and inspire the students to participate based on their needs and interests.

(b) *Curriculum development/renewal*

The following table provides an overview of curriculum development/renewal contributions with details provided below.

Course	Contribution	Deployment	Dates	Co-developers
VANT 140 Content Tutorial for CPSC 110	development	Jan 2017	Jan–Apr 2017	n/a
VANT 140 Content Tutorial for APSC 160	renewal	Sept 2016	Aug–Nov 2017	n/a
VANT 140 Language Tutorial for APSC 160	renewal	Sept 2016	Aug–Nov 2017	Fatimah Mamood
VANT 140 Content Tutorial for CPSC 110	renewal	Jan 2016	Jan–Apr 2016	Meghan Allen, Neil Leveridge
VANT 140 Language Tutorial for CPSC 110	development	Jan 2016	Jan–Apr 2016	Neil Leveridge
CSC 116	development	Sep 2014	Sep–Dec 2014	Jason Corless
CSC 167	development	Sep 2013	Sep–Dec 2013	n/a
SENG 310	renewal	May 2013	May–Aug 2013	UVic ICE

VANT 140 – Content Tutorial (CT) supporting CPSC 110 (UBC – 2016W2)

A tutorial intended to give students extra support with the content presented in CPSC 110 and taught by two TAs.

In 2016, Vantage disconnected VANT 140 Language Tutorial (led by academic English instructors) and VANT 140 Content Tutorial (led by CPSC 110 instructor). These two components were formerly tightly integrated with shared materials and crosscutting lesson plans. This disconnection required the curriculum redevelopment for VANT 140 CT in terms of:

- Term plan and learning objectives
- Weekly lesson plans
- Content for each lesson
- A table documenting the progression over the 13-week term

The curriculum development for these tutorials was based largely on the use of negotiation within second-language learning environment.³ This interactive approach to learning requires negotiation for meaning between learners and draws attention to knowledge and skills that are problematic for the learner.⁴ Characteristics of task-based learning activities from related literature⁵ were

³ Pica, T. (1994). Research on Negotiation: What Does It Reveal About Second-Language Learning Conditions, Processes, and Outcomes?. *Language Learning*, 44: 493–527.

⁴ Gass, Susan M., and Alison Mackey. (2007). "Input, interaction, and output in second language acquisition." *Theories in second language acquisition: An introduction* 175199 (2007).

⁵ Ellis, Rod. (2003), *Task-based Language Learning and Teaching*. OUP Oxford.

leveraged and adapted to fit learning objectives of CPSC 110 in the development of lesson plans.

VANT 140 – Content Tutorial (CT) supporting APSC 160

(UBC – 2016W1)

A tutorial intended to give students extra support with the content presented in APSC 160 and taught by two TAs.

VANT 140 Content Tutorial (led by CPSC 110 instructor) is a stand-alone component with respect to the VANT 140 Language Tutorial (led by academic English instructors). Based on experiences from the first year of teaching APSC 160 within Vantage, the curriculum was developed for VANT 140 CT in terms of:

- Term plan and learning objectives
- Weekly lesson plans
- Content for each lesson
- A table documenting the progression over the 8-week term

Additionally, curriculum content was developed for use by VANT 140 Language Tutorial (LT), academic English instructor for use in their lesson plans. Three exercises were developed and provided to the VANT 140 LT instructor to support explanation and provide exercise for critique-based lesson plans

VANT 140 – Language Tutorial (LT) supporting CPSC 110

(UBC – 2015W2)

A tutorial intended to teach the language associated with the two Vantage CPSC 110 content sections and was taught by Vantage language professor, Dr. Neil Leveridge. Vocabulary materials had been developed as well five lesson plans intended to more tightly integrate the VANT 140 LT, VANT 140 CT and CPSC 110 lecture were developed with the first offering by instructor Meghan Allen and TA Conrad Nickels. Building on this material, with feedback from Leveridge and Allen, I developed

- Weekly lesson plans
- CPSC 110 discussion content to integrate with lesson plans
- problem description for final project

VANT 140 – Content Tutorial supporting CPSC 110

(UBC – 2015W2)

A tutorial intended to give students extra support with the content presented in CPSC 110 and taught by three TAs. The goal set out by Meghan Allen after the first offering of CPSC 110 for Vantage (2014-W2) was to more tightly integrate VANT 140 LT, VANT 140 CT and CPSC 110 lecture. Continuing with this theme, the VANT 140 CT were designed to either feed into the LT for the week or to solidify material taught in the previous week. With feedback from Meghan Allen and the three TAs as well as attendance in weekly LT sessions, I developed:

- Weekly lesson plans

- Content for each lesson
- A table documenting the connection between lecture, LT and CT over the course of the 13-week term

VANT 140 – Language Tutorial (LT) supporting APSC 160

(UBC – 2015W1)

A tutorial intended to teach the language associated with APSC 160 content and taught by Vantage language professor, Dr. Neil Leveridge. Being the first offering of this course, the curriculum was developed cooperatively by Dr. Leveridge and myself and was supported by computer science undergraduate TA Rumneek Sangha in the classroom. My contribution to this curriculum development included:

- course vocabulary with definitions
- English description of C program development process
- flowchart basics (components of a flowchart and correspondence of flowchart to implementation)
- problem descriptions for group work
- problem description for final project

VANT 140 – Content Tutorial (CT) supporting APSC 160

(UBC – 2015W1)

A tutorial intended to give students extra support with the content presented in APSC 160 and taught by two TAs. Being the first offering of this course, the curriculum was developed as the course ran with feedback from TAs.

Leveraging existing exercises from APSC 160 course, I developed:

- Weekly exercises for students to complete

CSC 116 – Fundamentals of Programming II: Engineering Applications

(University of Victoria – 2014W1)

This is a University of Victoria CS2 course for engineering students (not including software engineers) taught in C++ following CS1 taught in C. I co-taught the second offering of this course with Mr. Jason Corless at the University of Victoria. While the course had learning objectives set out, it did not have a course syllabus or lecture and reference materials. As my contribution to the development of the course I created:

- a course syllabus that fit with learning objectives
- lecture materials including lesson plans and exercises
- reference materials including slides, video screencasts and code samples
- co-created assignments with Mr. Corless

CSC 167 – Game Strategy, Interaction and Design

(University of Victoria – 2013W1)

This is a University of Victoria computer science elective course that has no programming requirements. The course had been taught twice before I received it as a teaching assignment but had no materials associated with it. Based on the course outline I developed:

- learning objectives
- course syllabus
- lecture content including lesson plans and exercises
- reference materials in the form of slides
- lab content

SENG 310 – Human Computer Interaction

(University of Victoria – Summer 2013)

This is a University of Victoria software engineering course open to Computer Science and Engineering students. Having taught this project driven course multiple times, I was given the chance to revamp the project specification to introduce an entrepreneurial component to the course as well as alternative prototyping techniques. Groups were asked to use fast prototyping techniques to conceptualize, evaluate and pitch an idea to the class. These additions to the course included:

- parallel prototyping to encourage participation from all members of the group
- pitch workshop by ICE (Innovation Centre for Entrepreneurs)
- video prototype to demonstrate and pitch group design.

- (c) *Pedagogical innovation*
- (d) *Applications of and contributions to the scholarship of teaching and learning*

In developing and deploying curriculum in the classroom I strive to have student learning span all cognitive domains of Bloom's taxonomy. Formative assessments before, within and after lecture can provide students with a sense of the progress and understanding. If these assessments only span the lower order cognitive domain and do not require application, analysis and the creation of knowledge they do not give instructors or the students a true sense of understanding. I look to education research publications for new ways to trigger students to exercise these higher-order thinking skills and receive feedback of their progress.

Additionally, I believe the development of a student's meta-cognitive learning skills is critical for success in an academic setting. I look for ways to support students in the development of good study strategies, development and execution of learning plans and assessment of their learning.

Some examples of these methods I have applied are described below starting with the most recent:

CPSC 110 – Computation, Programs and Programming (UBC – 2016W2)

Building off my work with this course in the Summer of 2016 I experimented with ways to support Self-Regulated Learning⁶ as another way of addressing students ineffective study strategies.

At the beginning of each lecture, I introduced through a self-reflection component using iClicker software. I asked students to reflect their practices for lecture preparation/review and their perspective on self-efficacy after each module completion.

Additionally, I worked with the rest of the teaching team to develop exam wrappers that asked students again, to reflect on their exam preparation strategies and how well they did on the exam. These questions were asked both before and after students received their exam grade.

APSC 160 – Introduction to Computation in Engineering Design (UBC – 2016W1)

Building on observations from teaching of APSC 160 – 2015W1, I have introduced the use of a web-based, programming practice tool into the course materials for students. The tool provides students with formative feedback

⁶ Zimmerman, B.J. (1990). "Self-regulated learning and academic achievement: An overview". *Educational Psychologist*, 25, 3-17.

through questions broken down by lecture topic with both pre- and post-lecture questions. The pre-lecture questions intending to test student understanding of pre-lecture assigned screencasts and post-lecture questions intending to give them more in-depth practice to augment in-class worksheets. No solutions are provided for the problems, but the tool has an integrated hint system that provides pointers and suggestions based on common mistakes. Additionally, students are encouraged to discuss problems and solutions on the course discussion forum.

This practice tool was offered two sections of APSC 160 2016 W1 and was requested for use by APSC 160 2016 W2 instructor for two sections. The tool was provided as an optional resource to approximately 900 students across 2 terms and 5 sections where approximately 500 accounts were created and with each account making between 2 and 672 attempts to solve a problem.

In reflection, the practice tool was heavily used before midterms and the final exam but not consistently across the term as intended. A next step will be to investigate ways to encourage students to incorporate the use of this tool into their weekly learning plan.

CPSC 110 – Computation, Programs and Programming

(UBC – 2016S)

Summer of 2016 was my third time teaching CPSC 110 which is an extensively developed course with multiple support mechanisms. The course however, like most CS1 course, still has a high incompleteness/failure rate. Drawing from my experiences and observations in teaching this course over the previous two terms, I reflectively identified points of difficulty that students struggle with across the curriculum.

Three main points I identified were:

- (a) ineffective study strategies
- (b) lack of existing mental model to link difficult concepts to (ie. recursion and abstraction)
- (c) grasp of how new concepts built old concepts (similarities and differences)

In an attempt to address these issues, I experimented with and had some success with the following approaches:

- (a) I included in the course introduction research results comparing deep/shallow study strategies and their impact on success rates in Computer Science courses⁷. Throughout the term, references back to this terminology were

⁷ Hanna Yakymova, Yoann Monteiro, and Daniel Zingaro. 2016. Study Strategies and Exam Grades in CS1. In *Proceedings of the 21st Western Canadian Conference on Computing Education (WCCCE '16)*. ACM, New York, NY, USA, Article 24. DOI=<http://dx.doi.org/10.1145/2910925.2910931>

used to encourage student to apply these strategies in class activities and exam preparation.

- (b) At the points in the curriculum where complex concepts were introduced, I integrate kinesthetic learning activities into lecture to help student build a conceptual model of that concept. I used tactile visual representations of a concept domain that leverage students' existing conceptual models (ie. people as functions, a deck of cards as a list) and introduce terminology and application of the new complex concept in order to provide them with scaffolding to develop new conceptual models.
- (c) I developed a set of handout-based visualizations that build throughout the term to visually highlight the similarities and differences between some of different data structures that are encountered across the term. I am working to expand on this set of artifacts for other portions of the curriculum.

APSC 160 – Introduction to Computation in Engineering Design

(UBC – 2015W1)

Most recently I adapted my active based teaching approach to the *Just In Time* teaching model applied in APSC 160. Using iClickers at the beginning of lecture as a formative assessment of student understanding of pre-lecture material allowed me to better inform my lecture. While this formative assessment provided some, in the worksheet activity portion of the class I found students were having difficulty moving to higher-order thinking to both apply, analyze and evaluate their work. This has led to my investigation of the use of practice tools I have used in previous courses (described below in *CSC 110 – Fundamentals of Programming I*). The goal is to use practice tools in pre-lecture process to allow a student to reach higher-orders of thinking in their pre-lecture preparation.

CPSC 110 – Computation, Programs and Programming

(UBC – 2015W1)

In this course iClickers are used at the beginning of lecture as a formative assessment of student understanding of assigned pre-lecture material. The questions were taken directly from the pre-lecture material and response had to be correct for students to receive credit. While this use of the iClicker encouraged pre-lecture work and attendance, it did not give an accurate measure of deep understanding. Throughout the term I was able to introduce some questions within lecture that students had not seen before and based on in-class exercises and lecture material to give more accurate measure of learning to both the students and myself as the instructor. These questions were graded 50/50 for correctness/participation and often I would allow discussion about a question and re-poll for answers. This approach was inspired by the *Just In Time* teaching combined with *Peer Instruction* model used in APSC 160.

SENG 310 – Human Computer Interaction

(University of Victoria – 2014W2)

In this software engineering course, students are introduced to many software design and evaluation techniques within the context of rapid development cycle.

Within an 80-minute lecture, I spent approximately 30 minutes introducing a technique in an interactive way, followed by individual or group exercises applying the technique. Throughout the exercise time, the class would regroup to share and critique the work being produced. This approach allowed me to take students through multiple levels of Bloom's taxonomy on a given topic: remembering and understanding in the lecture portion, applying in the group exercises and analyzing and evaluating in the critiquing portion of the class.

Having taught this course multiple times, I experimented with taking students to higher-orders of thinking in creation of knowledge. At the midpoint of the term, when students had been introduced to multiple design and evaluation techniques and their groups were well into the course project, I asked students to reflect on how these techniques fit into the bigger picture of the software development process they were applying in their group projects. As a group, we reviewed the techniques on the board and then students were asked to create a visual representation of how these techniques fit together with the development process. This allowed students to both review the details of each of the techniques, while both reasoning about the bigger picture of software development processes and creating a mental model for themselves of the connections between what they had learned. The range of submissions demonstrated to me the differences in reasoning processes and learning styles of students and how important it is to allow students to create their own mental model of a set of material.

Additionally, with this course classified as third year software engineering, I took the opportunity to introduce students to the idea of research and dissemination. Wherever possible in the curriculum, I introduced publications from top HCI conferences (CHI, SIGCHI) in which the work was related to the topic or technique the students were applying. Class discussions surrounding contribution and the evaluation methods. I also brought an HCI graduate student to provide a guest lecture demonstrating a large scale experimental setup, evaluation and dissemination.

CSC 110 – Fundamentals of Programming I

(University of Victoria – 2014W2)

In this CS1 offering I worked with a team of graduate students who integrated a programming practice tool into course resources offered to students. The tool was intended to provide guided practice as well as a formative assessment of student learning outside of lecture time. The feedback from the formative assessments were intended to both inform the student and the teaching team of student learning. This tool also served to provide insight into students learning behaviours and problem solving skills. This work became the basis for a master's thesis⁸ and another student's continuing doctoral research.

⁸ Russo Kennedy, A. (2015). *Towards a Data-Driven Analysis of Programming Tutorials' Telemetry to Improve the Educational Experience in Introductory Programming Courses*. Masters Thesis. University of Victoria.

CSC 110 – Fundamentals of Programming I

(University of Victoria – 2012W1)

Although this was the first time instructing this version of CS1, I was familiar with its content and format as I had been a TA and course coordinator at least six times. This experience allowed me to experiment with active learning in the classroom. The course had historically been taught with slides and static code examples. I experimented with taking the lecture examples, allowing students time to work through the problem and then demonstrating a solution live either within an editor or on paper via an overhead.

(e) Teaching and Learning Grants

Date	Description	Amount	Competitive/ Non-Competitive
2016	CWSEI funding for development of programming practice tool for APSC 160	~\$7,500	Non-Competitive
2017	CWSEI funding for development of programming practice tool for APSC 160	~\$6,000	Non-Competitive

(f) Formal educational leadership responsibilities

(g) Innovation in the use of learning technology

I employ a variety of different learning technologies in my teaching practices...

- course management systems (EdX, connect, Sakai, CourseSpaces)
- polling software (iClicker, REEF Polling) to support Just-In-Time-Teaching
- CS exam-scanning system in APSC 160 and CPSC 110
- Screen-cast videos to augment lecture and exam feedback
- Online discussion forums (through course management systems, Piazza)
- Programming practice tool - BitFit (open source programming practice tool used in conjunction with a Java and C based CS1 courses)

(h) Other educational leadership contributions

- (2017) organizer, Code Parties, A pilot project inspired by hackathons and coding competition but with a cooperative flair. I meet with a group of three students for ~2hours/week and they bring problems or projects that they would like to work on. The students both discuss/work together and work individually on their own interests. While this is currently in pilot phase, I would like to expand this and introduce a white boarding style, interview preparation questions. The idea, is to develop students' skills in this area in a non-judgmental, collegial environment to develop their confidence for interview success.

- (May 2016-ongoing) collaborator, study on supporting self-regulated learning
 - Project Lead:
 - Silvia Mazabel, PhD Student
 - Educational & Counselling Psychology & Special Education
 - A “Community of Inquiry” on experiences introducing self-regulated learning into the classroom. Community is comprised of 5 instructors from across varied departments in the Faculty of Science.
- (Aug 2016-ongoing) informal teaching and career mentorship
 - Anthony Estey, CPSC Lecturer, recruitment/teaching mentorship
 - Salome Motavas, Vantage APSC Lecturer, career/teaching mentorship
- (Aug 2015-ongoing) member, UBC CS-Education Reading Group

10. **SCHOLARLY AND PROFESSIONAL ACTIVITIES**

(a) *Areas of special interest and accomplishments*

My professional activities include contributions in the research areas of Software Engineering and Systems and education practices. Through outreach and experimentation with Computer Science curriculum with colleagues I have contributed multiple publications to both national and international conferences. In terms of my graduate research I have published in, organized and chaired workshops as well as acted as a reviewer for multiple venues. Given my current position as an Instructor I look forward to expanding my connections and contributions to the education research community.

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

International

- (2009) Panelist, “Selected Outreach Activities in British Columbia”, *Grace Hopper Celebration (GHC)*, Tucson, AZ, USA.

National

- (May 2017) Presentation, “Technological Advances Driving the Evolution of Teaching Practices. Do These Practices Engage Every Learner?”, *13th Annual Learning Conference: Engaging Every Learner*, Centre for Teaching & Learning, University of British Columbia – Okanagan Campus.
- (2010) Co-presenter, “Towards a Consortium on Technology Driven Aboriginal Outreach”, *Canadian Coalition of Women in Engineering, Science, Trades and Technology (CCWESTT)*.
- (2010) Co-presenter, “First Impressions in First Year: Intellectual or Inane?”, *Canadian Coalition of Women in Engineering, Science, Trades and Technology (CCWESTT)*.

- (2009) Co-presenter, “The Virtual Learning Lodge: A Framework Under Construction”, *Canadian e-Learning Conference (CeLC)*, Vancouver, BC.
- (2008) Panelist, “Evaluating Impact and Identifying Measures of Success: When are Outreach Initiatives Successful?”, *Canadian Coalition of Women in Engineering, Science, Trades and Technology (CCWESTT)*, Guelph, ON.
- (2008) Panelist, “Attracting Aboriginal Women to Science and Technology”, *Canadian Coalition of Women in Engineering, Science, Trades & Technology (CCWESTT)*, Guelph, ON.
- (2008) Co-presenter, “ACCESS (Aboriginal Connections with Computing, Engineering and System Software): Making it accessible to remote communities through e-learning environments”, *Canadian e-Learning Conference (CeLC)*, Calgary, AB.

Local

- (Mar 2017) Poster presentation, “Integrating web-based programming practice tools with pre-lecture screencasts to enable high-orders of reasoning within a flipped classroom”, *Science Education Open House*, University of British Columbia.
- (Mar 2017) Poster presentation, co-presented with Undergraduate Teaching Assistants (UTAs), “Negotiation to improve second language acquisition applied to a computer science tutorial”, Jordan Demello, Yuchen Lin, Austin Rothwell, Jiwan Sangha, James Yoo, Amy Zhu and Celina Berg, *Science Education Open House*, University of British Columbia.
- (Feb 2014) Workshop organizer and facilitator, “Intro to Computer Graphics” (8*30minute sessions), *High School Tours*, University of Victoria, Faculty of Engineering.
- (Sep 2013) Presenter, GPA/Time Management (2*30 minute sessions), *New Student Orientation*, University of Victoria, Faculty of Engineering.
- (Jul 2013) Workshop facilitator, “Intro to Programming workshop”, *Indigenous Mini-University Summer Camp*, University of Victoria.
- (2008) Co-presenter, “ICT for Virtual Learning Environments”, *Internet and Communication Technology Summit*, Vancouver, BC.
- (2008) Co-presenter, “A Model for Success—Knowledge Translation: A Computer Science Perspective”, *Aboriginal Learning Knowledge Center, Annual Conference – Seeing Ourselves in the Mirror: Giving Life to Learning*, Vancouver, BC.

(c) *Other Presentations*

(d) *Other*

Education Conference/Workshop attendee:

International

- (2017, 2016) ACM Technical Symposium on Computing Science Education (SIGCSE).
- (2013) Gender Summit, Diversity Fueling Excellence in Research and Innovation.

National

- (2017) 13th Annual Learning Conference: Engaging Every Learner, Centre for Teaching & Learning, University of British Columbia – Okanagan Campus.
- (2016, 2008, 2007) Western Canadian Conference on Computing Education (WCCCE).
- (2010, 2009) Canadian Coalition for Women in Engineering, Science, Trades and Technology.
- (2010) SPLASH Educators' and Trainees' Symposium.
- (2009, 2008) Canadian e-Learning Conference (CeLC).

Local

- (Sep 2017) "Impact Assessment of Science Education Initiatives: What Strategies Have Worked, and Which Will Support Continued Improvements of Science Education at all Levels?", Francis Jones, EOAS and Ashley Welsh, Skylight & CTLT, Science Education Supper Series.
- (April 2017) Science Education Open House, Faculty of Science.
- (Feb 2017) Classroom group-work workshop, Barish Golland, Vantage College.
- (Mar 2017) "Modernizing Laboratory Teaching in 2nd Year Chemistry laboratories", José Rodríguez Núñez and Jason Wickenden, Science Education Supper Series.
- (Feb 2017) "Out of the file drawer and into the world: Start your students writing for Wikipedia", Rosemary J. Redfield and Judy Chan, Science Education Supper Series.
- (Jan 2017) "Making (and Measuring) Connections: Adventures in Interdisciplinary Teaching and Learning", Chris Addison and James Charbonneau, Science Education Supper Series.
- (Nov 2015) "Lunch and Learn: Experiential Learning – Exploring the Possibilities", Vantage College.
- (Oct 2015) "Demystifying Learning Analytics: Potential for the UBC Faculty of Science", Nouredine Elouazizi, Leah Macfadyen and Gillian Gerhard, Science Education Supper Series.
- (Sep 2015) "A worksheet-focused approach to facilitate a classroom with diverse levels of preparation", Georg Rieger and Joss Ives, Science Education Supper Series.

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

Conference organization

- (2011, 2009) Student Events Co-Chair, International Conference on Aspect-Oriented Software Development (AOSD).
- (2011) Program Committee member and Session Chair, IEEE Pacific Rim Conference on Communications, Computers and Signal Processing.
- (2008, 2007) Program Committee and Organizing Committee, Aspects, Components and Patterns for Infrastructure Software (ACP4IS), a workshop held at International Conference on Aspect-Oriented Software Development (AOSD).
- (2007) Program Committee, Software Engineering for Adaptive Software Systems (SEASS), a workshop held at Annual International Computer Software and Applications Conference (COMPSAC).
- (2007, 2006) Program Committee and Organizing Committee, Adaptive and Evolvable Software Systems: Techniques, Tools, and Applications, a mini-track held at Hawaiian International Conference on System Sciences (HICSS).

11. SERVICE TO THE UNIVERSITY

(a) *Areas of special interest and accomplishments*

The Vantage College Academic Outreach Committee (V-AOC) was created in September 2016 to communicate information about the Vantage programs to the academic community and the public and to share successful practices and innovations. As the Chair of this committee I have worked together with the other members to establish a plan of action to share Vantage contributions externally with inclusion of all facets of the program in mind (staff, faculty and administration).

As a curriculum committee member for both the Applied Science and Science streams of Vantage I am able to contribute at an individual stream level in curriculum decisions and student wellness support. The cross appointment also allows me to provide communication and consistency across streams to share lessons learned and best practices.

The learning curve was steep in my role as Academic Advisor on the UBC Computer Science Undergraduate Operations Committee (UGO). I have reached a point where I am contributing with a full schedule of advising appointments, sharing heavy-load, time-sensitive advising tasks such as pre-requisite checks, visiting students course selection and graduation checks.

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

Computer Science Department

- (2015 – ongoing) member, UBC Computer Science Undergraduate Operations Committee (UGO).
- (Mar 2016 – ongoing) member, sessional/lecturer hiring committee.
- (2016) member, Merit Committee

Vantage College

- (2016 – ongoing) chair, Vantage College Academic Outreach Committee (V-AOC)
- (2015 – ongoing) member, Vantage College Curriculum Committee, Science
- (2015 – ongoing) member, Vantage College Curriculum Committee, Applied Science

(c) *Other service, including dates*

- (Sep 2016 – ongoing) Prof-in-Res for Orchard Commons, Residence Life, Student Housing and Hospitality Services.
- (Sep – Apr 2017) Mentor, UBC Women in Science (WiS) Mentorship program.
- (Sep – Apr 2017) Mentor, UBC Residence Life Mentorship program.
- (Sep 2017) O-Prof session lead, *Meet a Prof*, Imagine Day, Faculty of Science.
- (Sep 2017) Faculty co-representative, *Meet a Prof*, Imagine Day, Vantage Applied Science.
- (Aug 2017) Learning Community Faculty Fellow, *JumpStart Student Orientation*, UBC First Year Experience.
- (Aug 2017) Panelist, *JumpStart Prof Talks*, UBC First Year Experience.
- (Aug 2017) Panelist, *JumpStart Advising Session*, Vantage College.
- (August 2017) Participant, First Year Education & Experience Forum, led by Karen Smith, Patty Hambler, Kari Marken, Neil Armitage
- (March 2017) Judge, BizHacks: case-competition/hackathon with collaborative teams of business and computer science students, Sauder School of Business, UBC.
- (Feb 2017) Reviewer, *UBC Multidisciplinary Undergraduate Research Conference (MURC)*.
- (Feb 2017) Panelist, STEM high-school career fair, *Opening the Door*, Science World, Vancouver, BC.
- (Oct 2016) Panelist, *Lunch and Learn for female CS and prospective CS students*, Focus on Women in Computer Science/Committee on Diversity and Equity.
- (Sep 2016) Faculty co-representative, *Meet a Prof*, Imagine Day, Vantage Applied Science.

- (Mar 2016) Faculty representative, *Women in Tech Panel*, Focus on Women in Computer Science.
- (Mar 2016) Faculty co-representative, *Meet your Major*, Faculty of Science.
- (Feb 2016) Faculty co-representative, Vantage TA Orientation/Training.
- (Sep 2015) Faculty co-representative, Vantage TA Orientation/Training.
- (Sep 2015) Faculty co-representative, *Meet a Prof*, Imagine Day, Vantage Science.

12. **SERVICE TO THE COMMUNITY**

- (a) *Memberships on scholarly societies, including offices held and dates*
- (b) *Memberships on other societies, including offices held and dates*
- (c) *Memberships on scholarly committees, including offices held and dates*
 - (2017) Program Committee Member, SPLASH-E (held in conjunction with conference on Systems, Programming, Languages and Applications: Software for Humanity (SPLASH))
 - (2017) Advisory Board Member, Tapestry, Large TLEF grant application (in progress)
- (d) *Memberships on other committees, including offices held and dates*
- (e) *Editorships (list journal and dates)*
- (f) *Reviewer (journal, agency, etc. including dates)*
 - (2017) SPLASH-E (held in conjunction with conference on Systems, Programming, Languages and Applications: Software for Humanity (SPLASH))
 - (2017, 2016) ACM Technical Symposium on Computing Science Education (SIGCSE)
 - (2017, 2015, 2013) Journal of Supercomputing, High performance Computer Design, Analysis and Use, Springer Journals.
 - (2017, 2013) IEEE Pacific Rim Conference on Communications, Computers and Signal Processing.
 - (2014) Co-reviewer, ACM Modularity Aspect-Oriented Software Development.
- (g) *External examiner (indicate universities and dates)*

(h) *Consultant (indicate organization and dates)*

(i) *Other service to the community*

13. AWARDS AND DISTINCTIONS

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

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

2008 – Grace Hopper Celebration travel scholarship (\$1000)

2008 – Anita Borg Scholarship (\$5,000)

2008 – BCNet Programming Challenge semi-finalist (not monetary)

2007 – NSERC Alexander Graham Bell Canada Graduate Scholarship (\$105,000)

2007 – University of Victoria President's Scholarship (\$2,000)

2007 – Symposium on Operating Systems Principles (SOSP) travel scholarship (\$700)

2007 – BC Government Student Led Research Grant (\$1,500)

2007 – NSERC-Pacific Discretionary Grant for ACCESS Project (\$4,200)

2006 – University of Victoria Fellowship (\$15,000)

2005 – University of Victoria Fellowship (\$10,000)

2004 – NSERC Undergraduate Scholarship Research Award (\$4,500)

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

(d) *Other Awards*

2013 – Consulate General of Canada/Johnson & Johnson Cognition Challenge finalist (\$50,000)

14. OTHER RELEVANT INFORMATION (Maximum One Page)

THE UNIVERSITY OF BRITISH COLUMBIA
Publications Record

If Applicable – not required in the Professor of Teaching Stream

SURNAME: Berg (previously Gibbs)

FIRST NAME: Celina

Initials: CGB

MIDDLE NAME(S): Gay **Date:** April 1, 2016

1. REFEREED PUBLICATIONS

(a) Journals

Carruthers, S., Milford, T., Coady, Y., Gibbs, C., Gunion, K., Stege, U., Teaching Problem Solving and Computer Science in the Schools: Concepts and Assessment, Pacific CRYSTAL Center for Science, Mathematics, and Technology Literacy: Lessons Learned, Sense Publishers, 2011.

Haupt, M. and B. Adams, S. Timbermont, C. Gibbs, Y. Coady, R. Hirschfeld, Disentangling Virtual Machine Architecture, in Special Edition of the IET (Institution of Incorporated Engineers) Journal on Domain-Specific Aspect Languages, Volume 3 Issue 3, pp 201-218, Jun. 2009.

Gibbs, C. and Y. Coady, Dynamic Patient Care with PHACTS, in Journal on Information Technology in Healthcare, Volume 6 Issue 2, pp 103-113, Apr. 2008.

Andrea, C., Y. Coady, C. Gibbs, J. Noble, J. Vitek, T. Zhao, STARS: Scoped Types and Aspects for Real-Time Systems, Real-Time Systems, Volume 31-1, pp 1-44, Oct. 2007.

Liu, R. and C. Gibbs, and Y. Coady, Safe and Sound Evolution with SONAR: Sustainable Optimization and Navigation with Aspects for System-Wide Reconciliation, Transactions on Aspect-Oriented Software Development (Springer), Special Issue on Aspect-Oriented Programming and Development for Software Evolution, 2007.

(b) Conference Proceedings

Berg, C., From buds to Bloom's: A proposal for growing strong students, in the Proceedings of The 21st Western Canadian Conference on Computing Education (WCCCE), May 2016.

D. Pucsek, Baldwin, J., MacLeod, L., Berg, C., Coady, Y., Salois, M., "ICE: Binary analysis that you can see," IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PACRIM), Aug 2013.

- Kiemele, L., C. Berg, A. Gulliver, Y. Coady, KFusion: Optimizing Data Flow without Compromising Modularity, in the Proceedings of Modularity: AOSD 2013, Mar 2013.
- Harrington, N., A. Rook, C. Berg, N. Singh and Y. Coady, Spring Roo: A Bird's Eye View, in the Proceedings of Modularity: AOSD 2013 – Industry Track, March 2013.
- Bergen, A., D. Pucsek, J. Baldwin, L. MacLeod, C. Berg, M. Salois and Y. Coady, Parallel Perspectives: Reverse Engineering for Generation Multi-X, in the Proceedings of the Seventh International Conference On Broadband and Wireless Computing, Communication and Applications, Victoria, BC, Nov. 2012.
- Berg, C., J. Erickson, L. Kiemele, A. Schröter, A. Gulliver, Y. Coady M. Hoeberechts and C. de Grasse, PREDICT: Parallel Resources for Early Detection of Immediate Causes of Tsunamis, in the Proceedings of the Seventh International Conference On Broadband and Wireless Computing, Communication and Applications, Victoria, BC, Nov. 2012.
- Long, D., C. Gibbs, D. Pucsek, M. Salois, J. Wall, Y. Coady, “Visualizing Patterns: A uniform representation of parallel patterns”, in Proc. of Conference on Pattern Languages of Programs (PLoP), Oct 2011.
- Singh, N., C. Gibbs, D. Pucsek, M. Salois, J. Wall, Y. Coady, Spinal Tap: High Level Analysis for Heavy Metal Systems, in the Proceedings of the IEEE Pacific Rim Conference on Communications, Computers and Signal Processing (PACRIM), Victoria, BC, Aug 2011.
- Long, D.K., Kiemele, L., Gibbs, C., Brownsword, A. and Coady, Y., Mind the Gap! Bridging the dichotomy of design and implementation, in the Proceedings of the Fourth International Workshop on Software Engineering for Computational Science and Engineering (SECSE11) held at ICSE`11, May 2011.
- Pucsek, D., Wall, J., Gibbs, C., Baldwin, J., and Coady, Y., ICE: Circumventing Meltdown With An Advanced Binary Analysis Framework, as a Poster in the 1st Workshop on Developing Tools as Plug-ins (TOPI `11) held at ICSE`11, May 2011.
- Gibbs, C. and Coady, Y., Concurrency Conundrums - An Ontological Solution?, in Proceedings of the International Conference on Knowledge Engineering and Ontology Development (KEOD `10), Oct. 2010.
- Gibbs, C. and Coady, Y., Parallelization and the Application Programmer: Random Self-Oscillation or Old Faithful?, in the Proceedings of the Workshop on Concurrency and the Application Programmer (CAP `10) held at SPLASH `10, Oct. 2010.

- Chester, S., C. Gibbs, F. Rossi, A. Brownsword, P. So, A. Gulliver, and Y. Coady, "Insulating the scientific programmer from perilous parallel architecture," in Proc. of SPLASH 9th Workshop on Parallel/High-Performance Object-Oriented Scientific Computing, Oct. 2010.
- Gibbs, C., and Y. Coady, "Understanding abstraction: means of leveling the playing field in CS1?" in Proceedings of SPLASH The Educators' and Trainers' Symposium., Oct 2010.
- Gibbs, C. and Coady, Y., May the Force(s) be With You: A Systematic Approach to Pattern Selection, in Proceedings of the Workshop on Parallel Programming Patterns (ParaPLOP `10), Mar. 2010.
- Gibbs, C., Y. Coady, Joining Forces: A RIPPL Effect? A Constraint-Oriented Perspective on a Pervasive Pattern Language, in Proceedings of the International Conference on Pervasive Patterns and Applications (PATTERNS 2009), Nov. 2009 (23% acceptance rate).
- Gibbs, C., K. Gunion, Y. Coady, On the Codification of Coordination: An Ontological Tool for Pattern Mining, ParaPLoP Workshop on Parallel Programming Patterns, Mar. 2009.
- Gibbs, C., J. Baldwin, N. Singh, M. D'Hondt, Y. Coady, Living with the Law: Can Automation give us Moore with Less?, Short Paper in Proceedings of IEEE/ACM International Conference on Automated Software Engineering (ASE) , pp 395-398, Sep. 2008 ([34 long, 36 short]/280 acceptance rate).
- Wong, J., O. Yazir, D. Minifie, C. Gibbs, J. Muzio, Y. Coady, Communicating Like Nemo: Scale-ability from a Fish-Eye View, Google Scalability Conference, Jun. 2008.
- Gibbs, C., Y. Coady, Promoting Natural Selection in System Infrastructure Software, in Proceedings of the Semantic-Based Systems Development workshop held at OOPSLA, Oct. 2007.
- Gunion, K., S. Lonergan, C. Gibbs, and Y. Coady, "Dreamcatchers: the future of aboriginal webs in Computer Science," Western Canadian Conf. on Computing Education (WCCCE), May 2008.
- Pearson, C., C. Gibbs, Y. Coady, Intuitive Source Code Visualization Tools for Improving Student Comprehension: BRICS, in Proceedings of the Process in OO Pedagogy - The sixth 'Killer Examples' workshop held at OOPSLA , Oct. 2007.

- Gibbs, C., and Y. Coady, "Forest or trees? On the emerging need for software engineering throughout early CS courses," Western Canadian Conf. on Computing Education (WCCCE), May 2007.
- Jackson, L., Y. Coady, C. Gibbs, I. Bull, B. Gorman, M. Zastre, R. Brown, and M. Sanseverino, "Problem solving, team work and flowcharts: CS1 goes retro at the University of Victoria," Western Canadian Conf.on Computing Education (WCCCE), May 2007.
- Agah St.Pierre, A., S. Carruthers, Y. Coady, R. Dunn-Krahn, S. Dunn-Krahn, C. Gibbs, G. Gibbs, H. Gibbs, S. Lonergan, J. Proctor, U. Stege, C. Storey, and M.A. Storey, "Young minds storming through challenging Computer Science concepts," Western Canadian Conf. on Computing Education (WCCCE), May 2007.
- Singh, N. and C. Gibbs , and Y. Coady. C-CLR: A Tool for Navigating Highly Configurable System Software, in Proceedings of the Workshop on Linking Aspect Technology and Evolution, held at the International Conference on Aspect-Oriented Software Development (AOSD), Mar. 2007.
- Gibbs, C., J. Proctor, Y. Coady. Surrendering to the Need for Speed while Maintaining Visibility in Adverse Code Conditions, in Proceedings of the Workshop on Linking Aspect Technology and Evolution, held at the International Conference on Aspect-Oriented Software Development (AOSD), Mar. 2007.
- Gibbs, C., Y. Coady, Dynamic Patient Care with PHACTS, in Proceedings of the International Conference addressing Information Technology and Communications in Health (ITCH) , Feb. 2007.
- Gibbs, C., D. Lohmann, C. Lui, Y. Coady, Modular Integration through Aspects: Making Cents of Legacy Systems, in Proceedings of the Clinical Process and Data Integration and Evaluation held at the Hawaii International Conference on System Sciences, Jan. 2007.
- Gibbs, C., Y. Coady, M. Haupt, J. Vitek and H. Yamauchi, Towards a Domain Specific Aspect Language for Virtual Machines, in Proceedings of the Domain Specific Aspect Languages (DSAL) Workshop, held at the ACM Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA), Oct. 2006.
- Andreae, C. and Y. Coady, C. Gibbs, J. Noble, J. Vitek and T. Zhao, STARS: Scoped Types and Aspects for Real-Time Systems, in Proceedings of the European Conference on Object-Oriented Programming (ECOOP), pp 124-147, Jul. 2006 (13%, 21/164 acceptance rate).

- Gibbs, C., STARS: Scoped Types and Aspects for Real-time Systems, in Proceedings of the Graduate Innovation Forum - UVic Engineering Research , Apr. 2006.
- Gibbs, C., Y. Coady, J. Vitek, T. Zhao, J. Nobel, and C. Andreae, It is Time to Get Real with Real-Time: How Can Aspects, Patterns and Tools Help?, in Proceedings of the Workshop on Aspects, Components and Patterns for Infrastructure Software, held at the International Conference on Aspect-Oriented Software Development (AOSD) , Mar. 2006.
- Coady, Y., and C. Gibbs, "Hey! You've got your Aspects in my undergraduate curriculum," in Proc. of AIT Workshop, held at the the International Conference on Aspect-Oriented Software Development (AOSD), Mar. 2006.
- Gibbs, C., Y. Coady, Making Real-Time Abstractions Concrete with Aspects, in Proceedings of the Workshop on Java Technologies for Real-time and Embedded Systems (JTRES), held at the International Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA), Oct. 2005.
- Gibbs, C., R. Liu, Y. Coady, Scalable System Infrastructure and Big Bang Evolution: Can aspects keep pace?, in Proceedings of the European Conference on Object-Oriented Programming (ECOOP) , pp 241-261, Jul. 2005 (14%, 24/174 acceptance rate).
- Gibbs, C., R. Liu, Y. Coady, And the Band Played On: Are Aspects Adrift in a Sea of Sinking Code?, in Proceedings of the Workshop on Linking Aspect Technology and Evolution (LATE) Workshop held at the International Conference on Aspect-Oriented Software Development (AOSD) , Mar. 2005.
- Liu, R., C. Gibbs, Y. Coady. SONAR: System Optimization and Navigation with Aspects at Runtime, in Proceeding of the Dynamic Aspects Workshop, held at the International Conference on Aspect-Oriented Software Development (AOSD), Mar. 2005.
- Gibbs, C., and Y. Coady, "OASIS: organic aspects for system infrastructure software easing evolution and adaptation through natural decomposition", in Proceedings of the Hawaii International Conference on System Sciences (HICSS), Jan. 2005.
- Gibbs, C., Y. Coady, SAUSI: System Aspects for Uniformity in Software Infrastructure, in Proceedings of International Conference on Software and Systems Engineering and their Applications (ICSSEA), Dec. 2004.
- Liu, R., C. Gibbs, Y. Coady, MADAPT: Managed Aspects for Dynamic Adaptation using Profiling Techniques, in Proceeding of Reflective Middleware Workshop held at the Middleware Conference, Oct. 2004.

Stampflee, O., C. Gibbs, Y. Coady, RADAR: Really low-level Aspects for Dynamic Analysis and Reasoning, in Proceedings of the Programming Languages and Operating Systems (PLOS) Workshop held at the European Conference on Object-Oriented Programming (ECOOP), Jul. 2004.

Gibbs, C., Y. Coady, OASIS: Organic Aspects for System Infrastructure Software, in Proceeding of the Workshop on Reflection AOP and Metadata for Software Evolution Workshop, held at the European Conference on Object-Oriented Programming (ECOOP), pp 42-52, Jul. 2004.

Gibbs, C., Y. Coady, Garbage Collection in Jikes: Could Dynamic Aspects Add Value, in Proceedings of Dynamic Aspects Workshop (DAW), held at the International Conference on Aspect-Oriented Software Development (AOSD), Mar. 2004.

(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)