

# ANNUAL REPORT

Environments of Change

2019 – 2020

UNIVERSITY OF  
**WATERLOO**



Social Sciences and Humanities  
Research Council of Canada

Conseil de recherches en  
sciences humaines du Canada

Canada 



# Environments of Change

Annual Report

2019 2020



## DIRECTOR'S WELCOME

Last April, having completed our first year and facing a sudden pandemic, I realized how quickly time passes and how precious it is. Given that we are now spread across two continents and cannot meet in person, this report aims to keep us connected and to track our progress. Inside are brief updates on our Year 1 successes. I hope they encourage and remind that, despite these isolating times, we all benefit from our collective work on *Environments of Change*.

## HQP UPDATE

While COVID-19 complicated things this year, we nonetheless made remarkable progress on Objective 2 (Train large number of HQP) and invested heavily in the next generation of researchers.

*READ MORE ON pp. 2*



## DEVELOPING THE SCIENCES

Though ours is a Social Sciences and Humanities-based project, we thrive through transdisciplinary approaches. To that end, we added two new science researchers and conducted exciting HQP-driven scientific research.

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## GAMING THE PAST

This summer, one of our research teams began work on a proof-of-concept project for Objective 4 (Pedagogical Video Game)

*READ MORE ON pg. 6*



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# EXECUTIVE

# SUMMARY

Year 1 of our project brought tremendous financial success as we discharged our primary fiscal obligation to the SSHRC. Council requires all Partnership Grants to take in at least 35% in matching contributions from partnered agencies over the life of their project. It is a major accomplishment, therefore, and a sign of the high level of support we receive from our partners, that I was able to report in our Year 1 Milestone Report (attached) that we successfully discharged our obligation within the first ten months: EOC received \$924,177.27, or 37% in matching cash and in-kind contributions from our partners. This positions us favourably for our midterm review.

I am proud to report that 2020 also allowed us to complete **Objective 1** by constructing the new DRAGEN Lab. My leadership team and I were able to move into the Lab, along with a large group of EOC-funded students, in late February. Though COVID-19 prevented a formal launch, the DRAGEN Lab is now equipped as a state-of-the-art digital humanities lab, the envy of SJU and UW. We look forward to the day when we can occupy the space more fully.

Meeting our financial obligations and completing our first Objective were major successes, but they represent only a beginning. Over the course of our first year, our project grew – taking on new researchers, new students, and new work. We invested heavily in student training and produced, despite difficult obstacles, a phenomenal cohort of HQP. By far, the new research we have undertaken, and the students we continue to engage, represent the most exciting and dynamic aspects of our work.

COVID has forced us to delay our second AGM to May 2021, but we will gather virtually in October. In the meantime, read on to see highlights of our collective achievements. I look forward to discussing them with you in October!



A handwritten signature in black ink, reading "S. Bednarski".

Steven Bednarski  
Director, Environments of Change





# Highly Qualified Personnel

## HQP Formation Tops Funding Priority in Year 1 and at start of Year 2

We set out with the ambitious intention of providing 467 discrete training opportunities (**Objective 2**) for undergraduate and postgraduate students and postdoctoral fellows and, until March 2020, we were on track to make our Year 1 targets. We had planned to send 12 undergraduate and 8 Master's students to live, study, and work at our Archaeology Summer Field School at Herstmonceux, run through our partner, the BISC. The cessation of international travel meant the cancellation of the Field School and those students, sadly, were unable to participate. Nevertheless, as it stands, our collective team still managed to train an impressive number of students and, in so doing, made important and lasting investments in future scholars.

The figures on the following page detail the extraordinary investment EOC made in student research formation. All told, they reveal we committed \$336,000 to HQP formation.

These numbers, as impressive as they are, obscure the fact that these HQP are more than just our students. They have become junior research partners and valuable collaborators. Their contributions support directly our research outputs. To help feature their efforts, Laura Cameron's PhD student, Hannah Hunter (Queen's) is working with Jacqueline Gergal (UW) and Sara Fontes (DRAGEN Lab) to develop our Student Caucus. The caucus will form a representative body for all HQP and help coordinate training and governance opportunities. Over the coming months, we hope to launch a dedicated section on the project website ([medieval-environment.com](http://medieval-environment.com)) to capture all the energy and talent brought forth by our HQP.



# HQP: April 2019 – August 2020

Within the DRAGEN Lab, we have allocated approximately **\$120,236** to student salaries and benefits to fund:

1. BRUNET, Mélanie	UW BSc Candidate (Physics & Earth Sciences)
2. DAVIES-KNEISS, Caleigh	SJU / UW BA Candidate (Arts)
3. DEL ROSSO, Peter	SJU UW BA Candidate (Medieval Studies)
4. DOHERTY, Hannah	UW MA Candidate, incoming (History)
5. ELLIS, Hayley	UW MA Candidate (History)
6. FAQIRI, Zohra	UW MA Candidate (History)
7. FORTIER, Erin	UW MA Candidate, incoming (History)
8. GERGAL, Jacqueline	SJU / UW BA Candidate (History / English – Rhetoric, Media)
9. HAMID, OWAIS	UW MEng Candidate (Engineering / Robotics)
10. KACHUCK, Zac	UW MA Candidate, incoming (History)
11. LEE, Jason	UW BA Candidate (History)
12. LUCAS, Meghan	SJU/ UW BA Candidate (Medieval Studies / Classical Stud.)
13. MOORE, Andrew	UW PhD Candidate (History)
14. NICKERSON, Rebecca	UW MA Candidate (History)
15. PAGUAGA, Juan	SJU / UW BA Candidate (Arts & Business Co-op)
16. PRITCHARD, Mackenzie	UW MA Candidate (Classical Studies)
17. SCULLY, Moira	UW MA Candidate (Classical Studies)
18. SERRANO-SANDOVAL, Michelle	UW MA Candidate (History)
19. SIEBEL-ACHENBACH, Ellen	UW BA Candidate (Arts)
20. TARDIF, Jordan	UW MA Candidate (Classical Studies)
21. VERSCHOOR, Jessica	UW BEnv Candidate (Earths Sciences / Medieval Studies)
22. WANG, Max	UW BA Candidate
23. ZELEK, Dawid	UW BA Candidate (History)
24. ZETTLE, Jamie	UW PhD Candidate (History)

EOC has also provided **\$50,831** in research funding to these UW students supervised outside the DRAGEN Lab:

25. AHMAD, Sana	BSc (Environmental Science)
26. ARRYMUGAM, Puvaanah	BSc (Earth Science)
27. GREEN, Danielle	BSc (Biochemistry)
28. RACICOT, Toben	UW PhD Candidate (English & Games Institute) (to be assigned in 2020 – 2021)
29. ROTSAERT, Izzy	BSc (Earth Science and Geo Physics)
30. VAN CAULART, Joycelin	UW BEnv (Geography & Environmental Management)

Outside of UW, our team collaborators and co-investigators received **\$194,969** to support these students' HQP formations:

31. CAMERON-STEINKE, Bryna	Georgetown University (delayed due to COVID*)
32. GRAVENOR, Joseph	Queen's University
33. HUNTER, Hannah	Queen's University
34. IBACH, Connor	Queen's University
35. LAPORTE, Kyle	Queen's University
36. McCARTHY, Caley	McGill University & Project Manager
37. McCONKEY, Codie	Queen's University
38. PROCTOR, Dylan	Georgetown University (delayed due to COVID*)
39. Assigned Internship	University of Victoria (to be assigned in 2020 – 2021*)
40. TBD PDF	Queen's University (Computer Science) (delayed due to COVID*)

It is noteworthy that our HQP span the disciplines and faculties associated with EOC. Through them, we see mobilized into action our commitment to producing transdisciplinary scholarship.

*\* pending due to COVID-19*



# RESEARCHER

## FUNDING

Between April 2019 and August 2020, EOC allocated \$320,580 in funding to co-investigators and collaborators. Here are highlights of what each received and achieved:

**Laura Cameron (Geography, Queen's)** administers \$14,000 to support a doctoral HQP and an undergraduate and to prepare a pending SSHRC application which will bring in additional project funding.

**Nick Graham (CS, Queen's)** administers \$76,467 to support a postdoctoral fellow, a postgraduate HQP, an undergraduate HQP, to acquire equipment, to host a team workshop, and for research / conference travel.

**Rob Harrap (Geology, Queen's)** administers \$23,750 to support two undergraduate HQP, and for research travel.

**John Johnston (Earth & Env Sci, UW), Martin Ross (Water Institute, UW)** administer \$25,000 to train three undergraduate Co-op HQP, to conduct post-literature review work, and to fund travel.

**Neil Loader (Geography, Swansea)** administers \$129,211.95 to conduct stable isotopic analysis of dendrochronology samples, including lab, equipment, personnel, and HQP expenses.

**Tim Newfield (History / Biology, Georgetown)** administers \$10,000 to support two postgraduate HQP.

**Neil Randall (Games Institute, UW)** administers \$8,500 to support a new doctoral HQP recruited to the project.

**Ray Siemens (ETCL, uVic)** administers \$13,152 to support HQP in the ETCL to advise on open access.

**Maria Strack (Geog & Env Mgt, UW), and Andrew Trant (Env, Res, and Sust, UW)** administer \$8,500 to train one undergraduate Co-op HQP, to conduct post-literature review work, and to fund travel.

**Jane Tingley (Fine Arts, UW)** administers \$12,000 to hire undergraduate HQP, to create a proof-of-concept installation, to purchase supplies, and to prepare a pending SSHRC grant application.

## PARTNERSHIPS



This year, we continued to work closely with all our partners and we added three new agencies / corporations: in the UK, the **Kent County Council (KCC)** and the **High Weald Area of Outstanding Natural Beauty (AONB)** and, in Canada, **Dell Canada (Dell)**. Though we did deploy one Co-op student HQP to partner BISC, COVID-19 interfered with other plans to deploy HQP to other partnered agencies. We are hopeful that, if and when conditions improve, we will be able to do so.

Our longtime partner representative, **Casper Johnson**, left his role with partnered agency the **East Sussex County Council (ESCC)**, and took on a new portfolio with neighbouring **KCC**. Through Casper, we have developed a new research position for a postgraduate student which we are now modifying to deploy virtually this autumn. KCC has an interest in helping us modify our original **Objective 7** (Digitize Archaeological Artefacts). Current conditions in the UK are not optimal to pursue this objective in its original form, however, other possibilities exist to support heritage-based partner agencies in conserving digitally their archaeological stores.

We also began negotiations with **HW**, a conservation advisory body that monitors the High Weald's 1,461 km<sup>2</sup> area in Kent, Sussx, and Surrey. When conditions improve, we look forward to deploying HQP to work on this historical landscape.

Finally, this year Dell Canada joined our network to provide computer equipment for the DRAGEN Lab and a dedicated support team.

## DEVELOPING THE SCIENCES



### Dr. Simon Coppard, BISC Science Coordinator, Joins EOC

**Simon Coppard** has taken up the newly created post of Science Coordinator at partner the BISC. Simon is a multidisciplinary evolutionary biologist who uses morphology, ecology, molecular biology, and paleontology to study evolutionary divergence and environmental interactions. Prior to arriving at the BISC, he taught at Hamilton College in New York State and was a senior research fellow at the Smithsonian Tropical Research Institute in Panama. On EOC, Simon serves as scientific advisor to the Director and helps to coordinate local data collection, student supervisions, and UK-based field research opportunities.



## Dendrochronology

### Prof. Neil Loader, Swansea



At the 2019 AGM, **Tim Newfield (Georgetown, History/Biology)** presented a detailed proposal to deploy an analysis based on dendrochronology. The goal was to use tree ring data to inform historical weather patterns in Sussex. In February 2020, EOC signed a Memorandum of Understanding with **Neil Loader (Swansea, Geography)**, making him our newest co-investigator. Neil is expert in tree ring dating using stable carbon and oxygen isotopes, and draws on partnerships with the Oxford Dendrochronology Laboratory. The team he leads will perform their analysis in Wales over Years 2 and 3. As they work, they will develop opportunities for *in situ* HQP formation. All team members are encouraged to consider collaboration possibilities for their students at Swansea.

## DRAINING THE SWAMP

This summer, **John Johnston (Earth & Environmental Sciences, UW)**, **Martin Ross (Water Institute, UW)**, **Maria Strack (Geography & Environmental Management, UW)**, and **Andrew Trant (Environment, Resource, and Sustainability, UW)** led a transdisciplinary research team of four undergraduate students comprised of **Sana Ahmad (Env. Sci., UW)**, **Puvaanah Arrumugam (Earth and Environmental Sciences, UW)**, **Danielle Green (Biochemistry, UW)**, and **Izzy Rotsaert (Earth Science Geophysics, UW)** to conduct preliminary literature reviews and develop initial data-driven maps and models (**Objective 6**). The team of HQP researchers produced reports on geological and terrestrial conditions in the Pevensey Levels, coastal sedimentation in the region, wetland/dryland vegetation in the Levels, and ecological comparisons to Romney Marsh. Their top-notch work forms the foundation for future wetland explorations and analyses. Look to our project website ([medieval-environment.com](http://medieval-environment.com)) to see the fruits of their labours!



# Gaming the Past: Reconstructing a lost medieval village

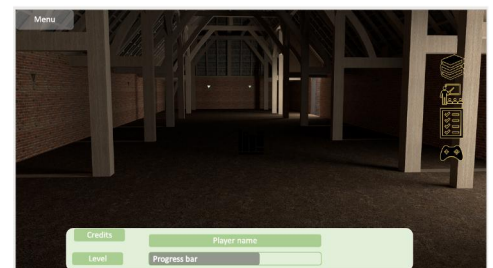
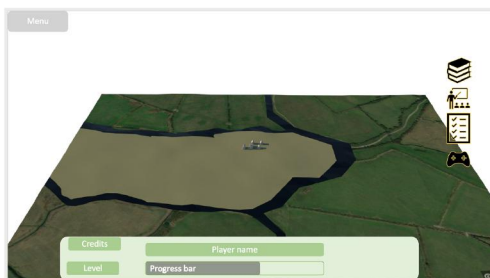
## Virtual Northeye Project

### Work Begins on Proof-of-Concept Video Game Project & Publication

EOC, in coordination with the EQUIS Lab, and under the direction of co-investigators **Nicholas Graham (CS, Queen's)** and **Rob Harrap (Geolog. Eng., Queen's)**, is making steady progress toward **Objective 4** (Pedagogical Video Game). Graham and Harrap assembled a team of students comprised of **Kyle Laporte (Geology, Queen's)**, **Connor Ibach (Geolog. Eng., Queen's)**, **Codie McConkey (CS, Queen's)**, and **Joseph Graveor (CS, Queen's)**. They worked to evaluate technology and build prototype games to support collaborative student learning worked in concert with EOC pedagogy experts, **Jolanta Komornicka (DRAGEN Lab)**, **Stephanie Hartmann (DRAGEN Lab)**, and our teacher partner reps **Alison Bullock (WRDSB)** and **Kelly Widmeyer (KWBS)**.

They were advised by **Steven Bednarski (History, SJU/UW)**, **Andrew Moore (History, UW)**, **Zack McDonald (Library, SJU)**, and by our newest project collaborator, **Leah Fusco (Design, Kingston University)**, a professional illustrator conducting doctoral research on Northeye.

The team will complete work on the Northeye virtual game prototype and is preparing a chapter for publication in *New Technologies in Medieval and Renaissance Studies* for submission in fall 2020. The chapter details the process used to pull together a transdisciplinary team to recreate a lost historical setting for use in the classroom.





# Equity, Diversity, & Inclusivity

The first half of 2020 not only saw tremendous social upheaval due to the spread of the COVID-19 pandemic, it also brought to the fore important questions about equity, diversity, and inclusivity across society and within the academy. While the spark for the ongoing global discourse was the American anti-racism movement and the U.S. murder of George Floyd, Canada is no less obligated to take up issues of systemic, historic, and racialized discrimination. EOC set out in 2018 with a plan to promote equity and diversity throughout our project, and all our participants remain deeply committed to these principles. In June we posted a *Director's Statement on Anti-Racism* to our project website, to articulate publicly the values held by the EOC leadership team. Still, as we all recognize, words are not enough. With that in mind, EOC is in the process of developing project scholarships and internships aimed at supporting students who identify as black, indigenous, or people of colour. The work developing these supports takes time as it requires consultation and a willingness to listen to community partners. Stay tuned this year for confirmation of these targeted funding opportunities for racialized students.

## MOBILE

**Objective 5** requires us to develop mobile tourism apps that integrate an awareness of environmental history into visitor experiences at sites across Sussex. In summer 2020, we assembled a team comprised of four UW MA candidates, **Hannah Doherty**, **Erin Fortier**, **Jacqueline Gergal**, and **Zach Kachuck**, local Herstmonceux tour guide **Barry Howse**, and BISC Enterprise Director **Julie Ryan**, to create a Google Tour of Herstmonceux, 1935 – 1945. The team has now nearly completed their draft prototype which includes archival images, historical research, audio commentary, and innovative 3D modelling of historic buildings.



## TOURISM APP

Last February, EOC collaborator **John Johnston (Earth & Environmental Sciences, UW)** delivered a workshop in the DRAGEN Lab to demonstrate how he uses Google Tours and Google Glasses in his field classes. Once the students complete their virtual tour, EOC will purchase a mobile set of Google Glasses to transport to Herstmonceux, where the students will demonstrate possible applications for visitors to the estate. Once our school partners are able to allow testing in classrooms, the mobile tourism team will also assess and report on remote classroom integration.

## GRANT NEWS

Projects such as those developed by EOC, which train such a large number of HQP and provide so many unique opportunities, require constant renewal and expansion of research support. We are, therefore, all the more grateful to the following co-investigators who are applying for external funding to re-invest in our collective work: **Laura Cameron (Geography, Queen's)** applies for a SSHRC grant to study sound in woodland environments; **Derek Robinson (Geography, UW)** applies for an NSERC grant to support our drone research; and **Jane Tingley (Fine Arts, UW)** applies for a SSHRC grant to explore forested environments.

Additionally, the DRAGEN Lab is especially indebted to EOC Research Facilitator **Andrew Moore** who took on the bulk of the work this past year to secure a 2019 – 2021 SSHRC Connection Grant, *Adaptation and Resilience: Past, Present, and Future Environments* to host a one-day symposium and launch an endowed lecture series at partner SJU. This event has been delayed until national and international travel and safety conditions improve.

## SPOTLIGHT ON ...

**Laura Cameron (Geography, Queen's)** supervised the brilliant **Hannah Hunter (Geography Queen's)**, who produced a literature review on Battle Abbey

**Joan Coutu (Fine Arts, UW)** designed a field course at Herstmonceux that will occur once the world reopens

**Richard Hoffmann (History, YorkU)** will MC *Adaptation and Resilience*

**Zack MacDonald (Library, SJU)** supervised the outstanding **Owais Hamid (MASC Eng, UW)** to report on applications of spatial sensors in visitor centres

**Tim Newfield (History/Biology, Georgetown)** recruited two postgraduate students to conduct work on late medieval Sussex environmental history

**Neil Randall (Games Institute, UW)** consults on our developing video game and springboards off it through his new PhD student, **Toben Racicot**, to develop an analogue role-playing game based on late medieval EH

**Ray Siemens (ETCL, uVic)** is recruiting a graduate student to provide dedicated digital humanities guidance on open access for EOC via partner ETCL

**Phil Slavin (History, Stirling)** organized 2 panels for EOC at major conferences; though cancelled due to COVID-19, they offer great promise for 2021!

**Jane Tingley (Fine Arts, UW)** has prepared a digital art installation for Herstmonceux to explore the relationship between humans and nature

**Christopher Whittick (Archival Consultant)** is preparing with Bednarski and Moore a published calendar of the medieval Hersmonceux manorial court rolls

## CONGRATULATIONS



Finally, congratulations go out to EOC Project Manager, Caley McCarthy, who successfully defended her PhD at McGill University on 17 June 2020. Her dissertation, *Civic Religion in Late Medieval Marseille: the Hospital of Saint-Esprit, 1306-1457*, studies the hospital's financial records to reconstruct the institutional culture surrounding healthcare.

The newly-minted Dr. McCarthy's scholarly expertise as a medical historian helps her to bridge the administrative and research elements of our project. **BRAVA!**

For more project news, visit [medieval-environment.com](http://medieval-environment.com)