

**Christian M. Denis**  
**Website:** cmdenis.com  
**Work:** christian.denis@umontreal.ca

**Location:** Montréal, Canada

---

|                   |  |                     |
|-------------------|--|---------------------|
| <b>EDUCATION</b>  | <b>Université de Montréal, Montréal</b><br><i>Physics (M. Sc.)</i><br>May 2025   | CUM GPA : 4.30/4.30 |
|                   | <b>McGill University, Montréal</b><br><i>Honours Physics (B. Sc.)</i><br>December 2022   | CUM GPA : 3.94/4.00 |
|                   | <b>John Abbott College, Ste-Anne de Bellevue</b><br><i>Arts and Sciences (DEC)</i><br>May 2019   | R-Score : 33.939    |
| <b>SKILLS</b>     | <b>Languages (spoken and written):</b> French, English<br><b>Computer Skills:</b> Solid programming skills in Julia, Python and Mathematica. Knowledgeable with LaTeX, JavaScript, HTML, CSS and Matlab. Competent with programs such as the Office Suite from Microsoft, GIMP, Pages (Apple) and Overleaf. Solid audio-editing and producing skills using Ableton and Reason.<br><b>Data Analysis:</b> Usage of Python, Julia and other statistical tools to analyze data<br><b>Driver's License:</b> Class 5 Permit (Canada) |                     |
| <b>EXPERIENCE</b> | <b>Université de Montréal: Research Assistant</b>  | <b>Winter 2023</b>  |
|                   | Working on modelling nonlinear oscillators in presomitic tissue as a research assistant within Paul François' biophysics group at Université de Montréal.  |                     |
|                   | <b>McGill Physics: Undergraduate Summer Intern</b>   | <b>Summer 2022</b>  |
|                   | Internship as research assistant in Paul François' theoretical biophysics research group. Studied the topology of the "Arnold Tongue Skeleton" of a set of nonlinear mappings. Also worked on creating a model for an entrained embryonic somite segmentation clock.   |                     |
|                   | <b>McGill Physics: Undergraduate Summer Intern</b>   | <b>Summer 2021</b>  |
|                   | Internship as research assistant in Paul François' theoretical biophysics research group. Worked on simulations of non-linear oscillators and 2D bifurcation diagrams (mainly Arnold Tongues). This was applied to the modelling of the somite segmentation clock.   |                     |
|                   | <b>Phytronix Technologies: Research Assistant</b>  | <b>Summer 2020</b>  |
|                   | Internship as research assistant at Phytronix technologies. Worked on characterization of a FAIMS system. Assisted the R&D department in the development of an automated pipetting robot, using Python. Used mass spectrometry to carry out calibration tests.   |                     |
|                   | <b>Math, Physics and Chemistry Tutor</b>   | <b>2018 - Now</b>   |
|                   | <b>Summer Jobs</b>   | <b>2016 - 2019</b>  |
|                   | 2019: Kruger Packaging, student factory worker<br>2018: Norsk Hydro, student factory worker<br>2017: McDonald's, Kitchen employee<br>2016: House maintenance work  |                     |

**PUBLICATIONS** **Unclocklike biological oscillators with frequency memory** Mauffette Denis C, François P. (Preprint). <https://arxiv.org/abs/2405.05180v1>

**Arnold tongue entrainment reveals dynamical principles of the embryonic segmentation clock** Layague Sanchez PG, Mochulska V, Mauffette Denis C, Mönke G, Tomita T, Tsuchida-Straeten N, Petersen Y, Sonnen KF, François P, Aulehla A. eLife 11:e79575. 2022.

**AWARDS AND GRANTS** **FRQNT Graduate Scholarship** **2024**  
20 000 \$ — Québec Provincial Graduate Scholarship — Master’s program.

**NSERC Graduate Scholarship** **2024**  
27 000 \$ — Canada Graduate Scholarship — Master’s program.

**BLUE Fellowship** **2024**  
3 000 \$ — McGill University, Building 21.

**McGill McGameJam** **2023**  
2nd Position. I mainly worked on audio production for our video game during the event. Access the game [here](#).

**NSERC USRA Research Award** **2022**  
6 000 \$ grant for undergraduate summer research.

**SURA - Dixie Park Science Undergraduate Research Award** **2021**  
4 000 \$ grant from donors, for undergraduate summer research.

**Summer Internship Grant From BioTalent Canada** **2020**  
7 000 \$ grant for undergraduate summer research.

**2nd Position at John Abbott College at CAP exams** **2019**

**Certificat du Mérite en histoire pour résultat scolaire exceptionnel** **2017**

**Prix Coup de cœur francophone (song lyrics)** **2017**

**Concours Soliste de Victoriaville (Provincial Music Contest)** **2013-2015**  
Silver - Clarinet (2013), Bronze - Clarinet (2015)

|  |   |                    |
|--|---|--------------------|
| <b>ACTIVITIES<br/>AND<br/>INTERESTS</b>  | <b>Home-Brewing (Beer, Kombucha, Wine, etc.)</b>  | <b>2022 - now</b>  |
|  | <b>VP Brewing - McGill Brewing Club</b>   | <b>2022</b>        |
|  | <b>TVM Admin Position - Music Composer</b>  | <b>2022</b>        |
|  | <b>Executive Member of TVM (Student Television at McGill)</b>                                     | <b>2021 - 2022</b> |
|  | <b>Participant in the McGill Physics Hackathon</b>  | <b>2020-2022</b>   |
|  | 2020: Generative artworks using random walks and weather data as seed ( <a href="#">link</a> ).   |                    |
|  | 2021: Sound production of a vibrating membrane with thermal fluctuation ( <a href="#">link</a> ). |                    |
|  | 2022: Simulation of sharks feeding on a prey ( <a href="#">link</a> ).                            |                    |
|  | <b>Member of the McGill Visual Arts Society</b>   | <b>2020 - 2021</b> |
|  | <b>Organization of Crater Sketching Workshops</b>   | <b>2019</b>        |
| <b>VP - John Abbott College Space Club</b>   | <b>August 2018 - May 2019</b>   |                    |
| <b>Music recording, composition and production</b>   | <b>2015 - now</b>   |                    |
| <b>Many Travels</b> 40+ countries. A year-long trip around the world (2013-2014).  |   |                    |
| <b>DISCOGRAPHY</b>   | <b>“Boxberg” (as Chris Mauden)</b>  | <b>2024</b>        |
|  | Music EP, composed, recorded, produced, mixed, mastered and published. <a href="#">Link</a> .     |                    |
|  | <b>“Should’ve Stayed Home Tonight” (as Chris Mauden)</b>  | <b>2024</b>        |
|  | Music EP, composed, recorded, produced, mixed, mastered and published. <a href="#">Link</a> .     |                    |
|  | <b>“Lab Day 23 (feat. Jona Rada &amp; Ali Seleit)” (as Chris Mauden)</b>                          | <b>2023</b>        |
|  | Music single, composed, recorded, produced, mixed, mastered and published. <a href="#">Link</a> . |                    |
|  | <b>“LMP1” (as Chris Mauden)</b>   | <b>2022</b>        |
|  | Music single, composed, recorded, produced, mixed, mastered and published. <a href="#">Link</a> . |                    |
|  | <b>“The Sunset Experiment” (as Chris Mauden)</b>  | <b>2020</b>        |
| Music EP, composed, recorded, produced, mixed, mastered and published. <a href="#">Link</a> .  |   |                    |
| <b>“T.H.E.C.O.R.O.N.A” (as Chris Mauden)</b>   | <b>2020</b>   |                    |
| Music EP, composed, recorded, produced, mixed, mastered and published. <a href="#">Link</a> .  |   |                    |
| <b>“Differential” (as Chris Mauden)</b>  | <b>2019</b>   |                    |
| Music Album, composed, recorded, produced, mixed, mastered and published. <a href="#">Link</a> .   |   |                    |
| <b>“Signals” (as Chris Mauden)</b>   | <b>2018</b>   |                    |
| Music single, composed, recorded, produced, mixed, and mastered. Made using samples of the cosmic microwave background noise. <a href="#">Link</a> . |   |                    |

|  |  |             |
|--|--|-------------|
| <b>FILMOGRAPHY</b>   | <b>“I Worry About My Teeth” (Short)</b>  | <b>2024</b> |
|  | Original Music Composer, Sound Recordist   |             |
|  | <b>“Posing in Bondage” (Short)</b>   | <b>2023</b> |
|  | Original Music Composer  |             |
|  | <u>Awarded “Best Student Short” at the Cannes Short Film Festival.</u>   |             |
|  | <b>“Reminiscence Of The Fading Memories” (Short)</b>   | <b>2023</b> |
|  | Original Music Composer. <u>Link to video.</u>   |             |
|  | <b>“Just A Kid” (Short Documentary)</b>  | <b>2022</b> |
|  | Original Music Composer. <u>Link to NFB page.</u>  |             |
| <b>“Love Triangle” (TVM Short)</b>   | <b>2022</b>  |             |
| Original Music Composer  |  |             |
| <b>“A Quirky Indie” (TVM Short)</b>  | <b>2021</b>  |             |
| Original Music Composer, Cameraman, Actor  |  |             |
| <b>“Bloom” (Short)</b>   | <b>2020</b>  |             |
| Original Music Composer  |  |             |
| <b>“Philippe” (Short Documentary)</b>  | <b>2018</b>  |             |
| Original Music Composer. <u>Link to video.</u>   |  |             |
| <b>“ShadowChasers 2017: The Great American Total Solar Eclipse”</b>  | <b>2018</b>  |             |
| Original Music Composer  |  |             |
| <b>MULTIMEDIA</b>  | <b>“Music from modelling the segmentation clock” (Projection)</b>  | <b>2024</b> |
|  | Procedural projections in Touch Designer reactive to music. Music samples from numerical simulations of <u>a model for the entrainment of the segmentation clock.</u> Made in the context of the BLUE fellowship at Building 21 (McGill University). |             |
|  | <b>“Raccoon raider &amp; the temple of thrash” (Video Game)</b>  | <b>2023</b> |
| Original Music Composer and sound designer. Video game project done at the McGameJam 2023 (McGill University). <u>Link to project.</u> |  |             |
| <b>“Scène de la mer” (VR)</b>  | <b>2022</b>  |             |
| Original Music Composer. VR project done at Building 21 (McGill University). <u>Link to project.</u>                                   |  |             |