

Sabbatical Leave Report (Spring 2022)

(to be completed upon return from sabbatical leave and returning to full service in Spring 2022; you must complete as described below)

Email *

kcleveland@miracosta.edu

PART I - Signature Page

A hard copy with signatures to be completed upon return from sabbatical leave and submitted to the SLC Administrative Assistant separately. Download and print the Signature page here.

<https://drive.google.com/file/d/1prXfgN2882dp4eX2eMwcfxCloi9zO8zN/view?usp=sharing>

Name *

Karl Cleveland

Department *

Media Arts and Technologies

Date Submitted: *

MM DD YYYY

02 / 21 / 2022

Academic school year in which leave was taken: *

2020/2021

2021/2022

Semester in which leave was taken: *

(Do not include any unbanking as part of a sabbatical leave)

Fall

Spring

Full-year

Check the type of sabbatical leave: *

Advanced Academic Studies, or

Self-directed studies

PART II - Restatement of Sabbatical Leave Application.

COPY and PASTE original Sabbatical Leave abstract that was submitted with your application here:

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During sabbatical leave, I intend to study full stack web application development using advanced JavaScript and the MERN technology stack. I further intend to study computer programming in the context of the visual arts through explorations of generative and algorithmic art-making. Lastly, I plan to explore traditional printmaking with a goal of finding ways to integrate digital and analog printmaking processes in creative ways. Media arts touches upon so many differing technologies and interdisciplinary skillsets that it requires constant professional development in order to keep pace with industry. A suite of evolving web technologies and frameworks have brought new capabilities to desktop and mobile browsers, but also increasing sophistication. In order to keep pace with student and industry needs and expectations, I must keep my web development skills on the cutting edge. This proposal allows me to do that. In addition, as a faculty member in media arts and technologies, I need to engage in and develop my own artistic and professional practices. I need to 'make stuff' as I often teach from direct experience creating media products and user experiences. This proposal allows me to cultivate and learn new artistic practices in both digital and traditional media.

PART III - Completion of Objectives, Description of Activities.**OBJECTIVE #1: ***

a) Copy and paste objective from application.

Explore and increase my knowledge of advanced JavaScript and JavaScript frameworks, including full stack web application development using Node.js and the technologies in the MERN Stack (MongoDB, ExpressJS, ReactJS, NodeJS).

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b) State the means by which you accomplished objective #1 and provide a description of any materials that you produced/courses completed in the fulfillment of the objective;

I accomplished this objective through a variety of means including reading, online training and video tutorials, and practice.

1) **READING:** I may be old school, but I still like books. I read and utilized chapters from a variety of JavaScript and JavaScript framework textbooks and reference materials. The book "Pro MERN Stack: Full Stack Web App Development with Mongo, Express, React, and Node" by Vasani Subramanian (Apress, 542 pages) was a primary source. In addition, I read or used as reference selections from several additional books and reference manuals including "Web Development with Node & Express: Leveraging the JavaScript Stack" by Ethan Brown (O'Reilly), "Learning React" by Alex Banks and Eve Porcello (O'Reilly), and "JavaScript: The Definitive Guide" by David Flanagan (O'Reilly). I also utilized the online guides and reference materials including the documentation available for each framework within the stack, including Node (available at <https://nodejs.org>), Express (<https://expressjs.com/>), MongoDB (<https://www.mongodb.com/>), and React (<https://reactjs.org/>). Beyond this, I used W3 Schools references about Javascript, including their Node.js and React tutorials. While coding, I also referenced the documentation available at the Mozilla Developer Network (<https://developer.mozilla.org>). When stuck, I also sometimes turned to Stack Overflow (<https://stackoverflow.com/>) or searched Google for articles and references.

2) **ONLINE TRAINING AND VIDEO TUTORIALS:** Beyond exploring the JavaScript frameworks powering modern full stack web development, I also had the goal of expanding my knowledge of JavaScript in general. As I began investigations into the MERN Stack, I quickly realized there was some intermediate and advanced JavaScript topics which I needed to learn or brush up on. These included working with objects, classes, and inheritance, working with arrow functions, exploring asynchronous JavaScript using promises and async/await, working with JavaScript requests and API calls, and exploring newer ES6+ capabilities (ES6 was a major update to the JavaScript language which occurred after my 2014 sabbatical during which I learned JavaScript fundamentals). Thus, I decided to complete the Codecademy (<https://www.codecademy.com>) interactive course titled "Learn Intermediate JavaScript". I also engaged with online video training at LinkedIn Learning (<https://www.linkedin.com/learning>) focused on full stack development or particular frameworks. These courses included: A) "Learning Full-Stack JavaScript Development: MongoDB, Node, and React" by Samer Buna B) "MERN Essential Training" by Emmanuel Henri, and C) "React.js Essential Training" by Eve Porcello. Additionally, I engaged with the course "React For Beginners" (<https://reactforbeginners.com/>) by Wes Bos. Beyond these formal courses for which I provide documentation (certificates of completion), YouTube proved to also be a good source of free resources and informal learning. In particular, I utilized the resources and playlists provided by Beau Carnes from [Freecodecamp.org \(https://www.youtube.com/c/Freecodecamp\)](https://www.youtube.com/c/Freecodecamp) and Daniel Shiffman from the Coding Train (<https://www.youtube.com/c/TheCodingTrain>).

3) **PRACTICE:** I practiced programming in JavaScript by creating a variety of coding samples and applications. You cannot really learn JavaScript or explore JavaScript frameworks through passive means alone, such as reading and watching videos. This would be like trying to learn a foreign language without ever speaking it. You have to actively engage in coding, try to solve problems, make mistakes, get confused, go down rabbit holes searching for answers, and (ideally) come up with solutions. For this objective, I did this by creating and programming three main web applications (or application demos) including: A) Coding and launching a new personal, experimental website (<https://karlcleveland.com/>). For my new website, I decided to try to create my own personal artificial intelligence (AI) and search engine driven by JavaScript. The homepage provides a search/input box in which you can ask questions or make requests for web content. The input field has 'placeholder' text that is dynamically generated and animated by JavaScript. This text tells users a bit of story as well as prompts them about how to use the system. When the user asks a question or makes a request, the system tries to respond with appropriate answers or links to my web content and resources. If the user makes a request or asks a question that the system cannot fulfill or answer, it stores that question into a database (using Firebase). I can then content that data so that I can learn about the limitations of the AI so that the system itself can evolve and expand over time. Note that full stack application development includes many frameworks and platforms beyond the MERN stack (for example Angular or VUE instead of React). Firebase is a platform developed by Google for creating mobile and web applications. I learned to use it as an alternative to MongoDB. Also, I engaged in a personal branding project as part of the new website launch, including creating a new logo/identity for myself. This is something that students in the MAT 290 Portfolio Development class must do and it was useful for me to engage in that work. However, I did not include 'design' hours in my tally as my sabbatical proposal did not mention such activity. B) Coding the demo application Wonder Wander (available at <https://karlcleveland.com/WanderWonder/>). WanderWonder uses JavaScript to allow users to search a location they may wish to visit and obtain the current weather at that location as well as a listing of various nearby attractions. This application allowed me to explore more advanced JavaScript and working with external databases and API calls. The app uses the Foursquare API and the OpenWeather API to grab data and populate search results. C) Creating an exercise tracking app using the MERN stack (demo available at <https://karlcleveland.com/exercisetracker>). This project allowed me to explore and practice coding a web application using all the technologies of the MERN stack. The app uses React for the user interface and interactive components, which enables users to add themselves as new users of the exercise tracker application and then enter details about exercise activity (a description, duration, and date). Using Node and Express, this information is then sent to the database powered by MongoDB Atlas where it is stored and used to populate the activities listed in the exercise log page on the app. For this application, I used Microsoft's Visual Studio Code editor. Dreamweaver has historically been my editor of choice, but its use is in decline within the industry. Another side benefit of this sabbatical is that it gave me opportunity to explore additional software options.

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c) Indicate the total number of hours dedicated in the accomplishment of objective #1:

204

OBJECTIVE #2 (if applicable):

a) Copy and paste objective from application (if applicable)

Explore and increase my knowledge of generative art, creative coding, and computational media practices.

b) State the means by which you accomplished objective #2 and provide a description of any materials that you produced/courses completed in the fulfillment of the objective;

I accomplished this objective through a variety of means including reading, online training and video tutorials, and practice.

1) **READING:** I read and utilized chapters from a variety of generative art and creative coding books and reference manuals. These included:

- "Generative Design: Visualize, Program, and Create with JavaScript in p5.js" by Benedikt Gross (Princeton Architectural Press)
- "The Nature of Code: Simulating Natural Systems with Processing" by Daniel Shiffman (this is an open source book self published via Kickstarter)
- "Code as Creative Medium: A Handbook for Computational Art and Design" by Golan Levin and Tega Brain (The MIT Press)
- "Generative Art: A Practical Guide Using Processing" by Matt Pearson (Manning Publications)

2) **ONLINE TRAINING AND VIDEO TUTORIALS:** Almost all of the online training that I did related to this objective was provided courtesy of Daniel Shiffman who works as an Associate Arts Professor at the Interactive Telecommunications Program at NYU's Tisch School of the Arts. Daniel is also a director of the Processing Foundation which leads the development of the p5.js framework. p5.js is a free and open source JavaScript library for creative coding. I primarily used the p5.js framework in my coding practice and explorations, with the exception of a couple projects that I made using the createJS library. The open source nature of this community and p5.js allowed free access to robust materials. Two "open source" courses at NYU provided starting points for my own explorations. These included the course "Introduction to Computational Media" (<https://github.com/ITPNYU/ICM-2021-Code>) and the course "The Nature of Code" (<https://github.com/nature-of-code/noc-syllabus-S20>). Both courses provide a structure that use Daniel Shiffman's free YouTube videos which he hosts on his Coding Train YouTube Channel (<https://www.youtube.com/c/TheCodingTrain>). One playlist from the Coding Train that was particularly helpful was his Nature of Code playlist (available at <https://youtube.com/playlist?list=PLRqWx-V7Uu6ZV4yEcW3uDwOgGXXUUsPOM>). These videos are free on YouTube and provide informal training. However, Daniel also created the Kadenze course (<https://www.kadenze.com/courses/the-nature-of-code-ii/info>) titled "The Nature of Code" based on his NYU course of the same title. I took that course. Certificates of completion for this course are only available to paid premium members. I didn't find the paid plan to be needed as most of the material in the course was free and other material could be supplemented by Dan's YouTube videos. So, I documented my Kadenze participation through progressive screen shots which you'll find provided within my sabbatical documentation.

3) **PRACTICE:** I attempted to put my learning into practice through creating my own code-based artworks. I am interested in computational and generative art that creates itself in real time based on user interaction. Generative art embraces randomness and chaos as organizing principles and attempts to create new ideas and forms through algorithmic processes. Such art is tied to complexity theory as there is often a large number of interacting parts that self-organize without any one thing (or person) being in absolute control. Any complex system will have elements of both order and disorder. Such complexity is also how nature creates itself on every scale, from the snowflake to the snowstorm. During my sabbatical, I participated in an online art show organized by the Kruglak Art Gallery at MiraCosta College in which I submitted four of my favorite 'generative paintings' created in Fall 2021. These are available from the gallery's website at: <https://kruglakgallery.weebly.com/karl-cleveland.html> (be sure to click on the links to create your own rendition to see the code in action). I will provide documentation of my "code sketches" and other artistic explorations related to this objective.

c) Indicate the total number of hours dedicated in the accomplishment of objective #2 (if applicable):

202

OBJECTIVE #3 (if applicable):

a) Copy and paste objective from application (if applicable)

Explore traditional printmaking techniques and processes such as woodcut, etching, lithography, screen printing, and/or other related contemporary printing techniques.

b) State the means by which you accomplished objective #3 and provide a description of any materials that you produced/courses completed in the fulfillment of the objective;

I accomplished this objective through a variety of means including attending in person classes and workshops, reading, and artistic practice.

1) **IN PERSON CLASSES AND WORKSHOPS:** A) I took (and earned an 'A') in the in-person MiraCosta College course ART 210 : Printmaking 1 taught by Frol Boundin during the Fall 2021 Semester. This course helped me learn the techniques of Linocut, Collagraph, Intaglio, Lithography and Monotype and provided me with the equipment (presses, zinc plates, ink, paper, etc.) and support needed to engage in artistic production. B) I took a week-long (7/26 – 7/30, 2021) workshop at the Anderson Ranch Arts Center in Colorado titled "Mono Matrix: digital and analog" (<https://www.andersonranch.org/workshops/workshop/mono-matrix-digital-analog-r0807-21/>) lead by artist and professor Emily Ginsburg (currently the art department chair at Pacific Northwest College of Art in Portland Oregon). The workshop provided combined access to the Center's excellent print making facilities and its Digital Fabrication Lab ("FabLab") along with artist talks, lectures, and demonstrations.

2) **READING:** I read and utilized chapters from two books: A) "Printmaking: A Complete Guide to Materials and Process" by Bill Fick and B) "Modern Printmaking: A Guide to Traditional and Digital Techniques" by Sylvia Covey.

3) **PRACTICE:** I engaged in substantive artistic practice in the process of taking both the class at MCC and the workshop at Anderson Ranch. I produced a number of physical prints and artworks (series and editions) using a variety of traditional (non-digital) print-making techniques. For my final project in the ART 210 class, I combined my efforts in Objective #2 (related to generative and computational art) by coding a digital painting that I then laser cut to a wood block to use for relief printing. It was a goal to ultimately engage in an artistic process that combined digital and analog techniques in creative ways and I was pleased to be able to create prints using such a methodology. Evidence of course and workshop enrollment (via transcripts and registration confirmation) along with examples of work process and final prints are available within the provided documentation.

c) Indicate the total number of hours dedicated in the accomplishment of objective #3 (if applicable):

246

OBJECTIVE #4 (if applicable):

a) Copy and paste objective from application (if applicable)

b) State the means by which you accomplished objective #4 and provide a description of any materials that you produced/courses completed in the fulfillment of the objective;

c) Indicate the total number of hours dedicated in the accomplishment of objective #4 (if applicable):

PART IV. - Contribution to District

In this section the individual who has concluded his/her sabbatical leave will restate and elaborate upon how the sabbatical activities contribute to the District by addressing the following:

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a. Explain how the study or project contributed to the professional development of the applicant.

Through this sabbatical I gained expertise in both client-side and server-side programming and web application development techniques, with a focus on JavaScript and full stack JavaScript frameworks. My graduate education focused on communication and art and my technical skills in web design and development are largely self-taught or have come through professional experience. Therefore, the opportunity to study and practice these topics expanded my professional skills and made me a more capable web developer. Beyond web development, media arts requires an interdisciplinary artistic and technical skill set. I need to engage in and develop my own artistic and professional practices. I need to 'make stuff' as I often teach from direct experience creating media products and user experiences. This sabbatical allowed me to do just that. I was able to cultivate and learn new artistic practices in both digital and traditional media.

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b. Explain the anticipated short- and/or long-term benefits of your project on the following groups: students, department, college, and/or community. As appropriate, include specific information on SLOs, PSLOs, Core Competencies and/or equity, diversity, and inclusion.

I. Students. I believe students stand to benefit from my sabbatical. The capabilities of Career and Technical Education students rely heavily on the expertise of the faculty designing and teaching their curriculum. In order to prepare themselves for professional jobs within the industry, students need to develop projects of real depth and breadth, both in creative design and technical implementation. As a result of my sabbatical, I am more qualified to support student's client-side and server-side web development efforts on an advanced-level, including supporting students who are building web applications. Moreover, I will be better able to support student learning goals and project needs in relation to computing in the arts. For example, one of the SLOs from MAT 190 includes the ability to "Conceptualize, design, and produce user interfaces, applications, and/or experiences that integrate media, animation, and interactivity." Satisfying this SLO requires faculty with robust artistic and technical skills, including how to apply computer programming techniques to artistic contexts.

II. Department. The PSLO for the Web Development and Design Certificate of Achievement reads: "Plan, design, and develop professional-level graphical user interfaces, web pages, and websites that utilize appropriate tools and techniques and demonstrate effective communication solutions." Of particular note in this PSLO is the need for students to demonstrate "professional-level" skills so that they are prepared to enter and thrive within the industry. But, the standards of the web design and development industry continually evolve and increase in sophistication. In order to remain on the cutting-edge, faculty must foster their own skills to ensure that students are getting relevant, useful, and up-to-date information. This sabbatical helped me be better prepared to teach and provide leadership in the web design and development curriculum specifically, but also across media arts disciplines more broadly, including the potential to develop new courses within the department or integrate more advanced-techniques and programming into current courses.

III. College and Community. The reputation and effectiveness of the College benefits from faculty who are experts in their fields of study and who are actively engaging with evolving technical and artistic practices. As a faculty member with advanced technical and creative experience in web design and development, computational media arts, and digital imaging and printmaking processes, I can assist the College in supporting media arts students with wide ranging interests. The community as a whole benefits from having a place to go to learn advanced, professional skills and from students who are well-prepared to transfer to four-year universities or take on industry jobs.

PART V. Documentation.

If you performed Advanced Academic Studies, your transcripts are to be attached to this section of the hardcopy of your report. If you performed self-directed studies, attach a weekly log in table form (e.g. generated in Excel or Word program – see sample table HERE (<https://drive.google.com/file/d/0B65aNZyaBt-IRGowWWtgRkNhVm8/view?usp=sharing>)) for each objective. A column of hours should be dedicated to each objective with a total of calculated hours at the end of each column. The sum of these columns must total 576 hours or more. You may also add a separate column that indicates any hours devoted to additional activities that were not originally provided in your application. These should not be included in your final sum of approved hours completed.

* Additional Sabbatical Leave Activities may not be counted toward the 576 hours that were originally approved.

Sum total of hours completed for approved activities: *

652

Link to Google folder with documentation files: *

Please enter the shareable link to your table of hours or, if applicable, to a shareable folder with other documentation such as transcripts, appendices, etc... Make sure the shareable link is set to "view". Press either the enter key or space bar after each link.

Documentation was reviewed and approved by the SLC task force.

THIS IS THE END OF THE SABBATICAL LEAVE REPORT

This form was created inside of MiraCosta College.

Google Forms