

## Curriculum Vitae

**NAME:** Charles O'Brien, PhD

**RANK:** Lecturer

**DATE OF APPOINTMENT:** August 7, 2024

**EMAIL:** Charles.E.O'Brien@uah.edu (ceo0005@uah.edu)

**WEBSITE:** <https://ceosolinfo.com/portfolio/portfolio.html>

### CAMPUS ADDRESS:

University of Alabama in Huntsville  
Wilson Hall, Room 112  
301 Sparkman Dr. NW  
Huntsville, AL 35805  
256-824-6542

### EDUCATION:

<u>Year</u>	<u>Degree</u>	<u>Institution</u>	<u>Major</u>
2023	MA	Lindenwood University, St. Charles, MO	Game Design
2013	PhD	Rutgers University, New Brunswick, NJ	Microbial Genetics
2002	BS	Rutgers University, New Brunswick, NJ	Biotechnology

### PROFESSIONAL ACADEMIC EXPERIENCE:

<u>Year</u>	<u>Title / Rank</u>	<u>Institution</u>
2024-Pres.	Lecturer	University of Alabama in Huntsville
2018-2024	Adjunct Professor	University of Alabama in Huntsville, AL Dept. of Art, Art History, and Design
2013	Adjunct Professor	Rutgers University, New Brunswick, NJ Dept. of Microbiology and Biochemistry
2010-2013	Teaching Assistant/Lab Instructor	Rutgers University, New Brunswick, NJ Dept. of Microbiology and Biochemistry

### RELEVANT PROFESSIONAL EXPERIENCE:

<u>Year</u>	<u>Title</u>	<u>Institution</u>
2014-Pres.	Freelance Contractor	Independent Sole Proprietor
2020-2024.	Principal Research Scientist I	University of Alabama in Huntsville, AL Dept. of Nursing
2020-2024.	Principal Research Scientist I	University of Alabama in Huntsville, AL Dept. of Rotorcraft Systems Engineering

**WORK EXPERIENCE:***Lecturer**08/2024 - Present**University of Alabama Huntsville, Huntsville, AL*

- Instructed multidisciplinary courses in programming, art, and design:
  - Animation: Team Game Design I/II
  - Game Design: Introduction
  - Game Design: Scripting and Design I
  - Graphic Design: Web Design
  - Graphic Design: Senior Project Management
- Developed complete curriculum for new Game Design program
- Developed course maps for Course Design & Review (CDR) Certification

*Principle Research Scientist I**02/2020 - 08/2024**University of Alabama Huntsville, Huntsville, AL*

- Developed an educational training app targeting Alzheimer's and related dementias, aiming to mitigate disease progression
- Designed an innovative assessment tool for early cognitive impairment detection, contributing to advancements in cognitive health diagnostics
- Created an immersive VR simulation to enhance Medevac helicopter equipment installation training methodologies
- Collaborated seamlessly across multidisciplinary teams in Nursing and Rotorcraft Systems Engineering, aligning applications with educational objectives and client needs
- Crafted project narratives and methodologies for grant submissions to diverse funding sources, resulting in successful funding for multiple projects

*Adjunct Professor**01/2018 - 08/2024**University of Alabama Huntsville, Huntsville, AL*

- Developed and instructed diverse multidisciplinary courses that emphasize project management and professional practices in programming, art, and design:
  - Animation: Team Game Design I/II
  - Animation: Technical Arts
  - Game Design: Introduction
  - Graphic Design: Web Design
  - Graphic Design: Senior Project Management
  - Special Topics: Game Design and Prototyping
  - Special Topics: Game Scripting
  - Special Topics: Level Design and Playtesting
- Adapted courses to hybrid and online formats in response to the COVID-19 pandemic, ensuring uninterrupted learning experiences for the students
- Implemented routine assessments of learning outcomes across course modules to continuously improve teaching methodology

- Engaged with the local community to foster support for charities and small businesses while also giving students freelance portfolio pieces

*Freelance Contractor in Game/App Development**01/2015 - 08/2024**Madison, AL*

- Successfully completed approximately fifty contracts within the game/app industry, fostering an extensive understanding of the field's nuances and intricacies
- Offered personalized tutoring and mentorship in game design and development to clients across diverse age groups:
  - Developed a comprehensive curriculum for video game design training
  - Guided clients through all aspects of game design, including drafting documentation, rapid prototyping, and successful game publication
- Authored an SBIR grant proposal focused on gamifying prescription drug compliance
- Published around forty client games/apps in total across flash, html5, iOS, Android, Mac and PC, demonstrating expertise and versatility in development

*Independent Game Designer and Developer**09/2014 - 08/2019**Sole Proprietor of Ceosol, Madison, AL*

- Published five games on Steam, achieving over 300,000 downloads for one title, and six games on mobile, demonstrating versatility across multiple platforms
- Orchestrated a successful Kickstarter campaign, highlighting adeptness in community engagement for game development project

*Adjunct Professor**06/2013 - 08/2013**Rutgers U., Department of Microbiology and Biochemistry, New Brunswick, NJ*

- Contributed as a member of a three-person adjunct professor team
  - Presented lectures for RNA transcription and protein synthesis
  - Served as liaison between hands-on laboratory activities and lecture materials
- Conducted training sessions for the new Teaching Assistants for the upcoming year

*Teaching Assistant**09/2010 - 05/2013**Rutgers U., New Brunswick, NJ*

- Taught three semesters of General Microbiology Lab, one semester of Experimental Biochemistry Lab, two semesters of Applied Microbiology Lab, and one semester of Microbial Ecology Lab
- Developed the curriculum, lectures, and assignments for Microbial Ecology
- Maintained course websites for communicating with students through SAKAI

*Graduate Research Assistant**09/2005 - 05/2013**Rutgers U., New Brunswick, NJ*

- Studied bacterial communities at deep-sea hydrothermal vents
- Screened for bacterial resistance to antibiotics and metabolic activity
- Supervised and trained younger students (high school, undergraduate and graduate)

*Quality Assurance Technician* 10/2003 - 05/2005

*Golden State Foods, Conyers, GA*

- Performed all hazard analysis and critical control protocols in compliance with USDA
- Calibrated and maintained all of the analytical equipment and devices
- Trained all new hires in proper standard operating procedures

*Research Assistant* 06/2002 - 12/2002

*Emory University Hospital, Atlanta, GA*

- Created methodology for detecting galactosemia in infants

*Consultant* 01/2002 - 05/2002

*Research Proteins Incorporated, New Brunswick, NJ*

- Created gene libraries for mass production and purification of proteins of interest

*Lab Technician* 01/2000 - 12/2001

*Rutgers U., New Brunswick, NJ*

- Prepared lectures for Animal Science related courses
- Managed the online course website (WebCT)
- Assembled and printed posters for the department for use in conference presentations

## **GAME PROGRAMMING SKILLS:**

- Unreal Engine 4 and 5
- Unity 2D and 3D
- Unity scripting using C#, Bolt, and Playmaker
- Stencyl game engine

## **MODELING AND ANIMATION SKILLS:**

- Autodesk Maya
- Autodesk 3ds Max
- Bondware Poser 3D

## **WEB DESIGN AND SUPPORTING SKILLS:**

- Adobe Creative Cloud Suite
- Adobe Dreamweaver
- Web-based course management systems (e.g. Canvas, WebCT, and Sakai)
- Front-end design in HTML and CSS

- Back-end development in PHP and MySQL
- Website CMS (Wix, Weebly, Squarespace, Wordpress, and Google Sites)
- Microsoft Office, Office 365, and Google Suite
- Project management systems (Trello, HacknPlan, ShotGrid, Toggl, and Gantt)

### **CURRENT COURSES AT UAH:**

- Introduction to Game Design (ARS 210)
- Video Game Scripting and Design (ARS 311)
- Graphic Design: Web Design (ARS 332)
- Special Topics in Game Design: Level Design and Prototyping (ARS 395)
- Team Game Design I and II (ARS 415/416)
- Senior Project Management (ARS 432)

### **PREVIOUS COURSES:**

- Team Game Design (ARS 320, at UAH)
- Technical Arts (ARS 324, at UAH)
- Special Topics: Game Scripting (ARS 395-01, at UAH)
- Special Topics: Game Design and Prototyping (ARS 395-03, at UAH)
- General Microbiology (11:680:390, at Rutgers University)

### **GRADUATE ACCREDITATION COURSEWORK:**

- Level Design in Unreal Engine
- 3D Animation in 3ds Max
- Game Development I using Unity 2D
- Game Development II using Unity 3D
- Projects and Portfolios I using Unreal Engine
- Concept Art and Design
- Research and Scholastic Writing
- Thesis Project: Virtual Reality Simulation and Production in Unreal Engine

### **GRANT SUBMISSIONS:**

- National Institute of Aging R21 Grant (2024) with Lenora Smith (*In Preparation*)
- National Institute of Aging Eureka PREPARE Challenge: Data for Early Prediction (2024) with Lenora Smith (*Not Funded*)
- Coins for Alzheimer's Research Trust Grant (2024) with Lenora Smith (*Not Funded*)

- Epic MegaGrant (2023) with Lenora Smith (*Not Funded*)
- Charger Innovation Fund (2023) with Azita Amiri, Kim Budislich, and Aaron Wells (*Not Funded*)
- American Nurses Foundation Innovation Grant (2022) with Azita Amiri, Kim Budislich, and Paul Whitehead (*Not Funded*)
- National Institutes of Health R21 Grant (2020) with Lenora Smith, Jodi Price, and Vinny Argentina (*Not Funded*)
- American Nurses Foundation Stryker Medical Grant (2019) with Lenora Smith, Jodi Price, and Vinny Argentina (**Funded: \$24,970**)
- Office of the Vice President of Research and Development Award (2018) with Lenora Smith (**Funded: \$3,000**)
- National Research Council Research Associateship Program (2013) (**Funded: \$80,500**)

## PUBLICATIONS:

Hutson, J., Olsen, T., O'Brien, C., & Weber, J. (2024). *Reproduire l'histoire: Multi-Sensory Reconstructions of Historical Interiors for Virtual Reality*. Manuscript submitted for publication.

Olsen, T., Hutson, J., O'Brien, C., & Ratican, J. (2024). *Simulacra and historical fidelity in digital recreation of lost cultural heritage: Reconstituting period materialities for the period eye*. *AC* 2024, 2(2), 2719. <https://doi.org/10.36922/ac.2719>

Smith, L.W., & O'Brien, C. (2023) *Use of Chair Exercises in Increasing Heart Rate during Pilot Testing of mPACT app*. *Alzheimer's Dement.*, 19: e076612. <https://doi.org/10.1002/alz.076612>

O'Brien, C., Hutson, J., Olsen, T., & Ratican, J. (2023). *Use of AI to Recreate and Repatriate Lost, Destroyed or Stolen Paintings: The 1785 Parisian Salon Case Study*. *JOIT* 2023(21), 1-12. eISSN:2805-5179

O'Brien, C., Hutson, J., Olsen, T., & Ratican, J. (2023). *Limitations and possibilities of digital restoration techniques using generative AI tools: Reconstituting Antoine François Callet's Achilles Dragging Hector's Body Past the Walls of Troy*. *AC* 2023, 1(2), 1793. <https://doi.org/10.36922/ac.1793>

O'Brien, C.E. (2023). *Building an Immersive Simulation of the 1785 Parisian Salon in VR: A Guide to Recreating Historical Interiors and Digital Twins*. (Theses 534) [Masters thesis, Lindenwood University]. <https://digitalcommons.lindenwood.edu/theses/534>.

Smith, L., Argentina, V., Price, J., & O'Brien, C. (2020). *The mobile Physical Activity and Cognitive Training (mPACT) App for Older Adults: A Pilot Study*. *Computers, Informatics, Nursing*, 38(11):537-542.

O'Brien, C.E., Giovannelli, D., Govenar, B., Luther, G.W., Lutz, R.A., Shank, T.M., & Vetriani, C. (2015). *Microbial biofilms associated with fluid chemistry and megafaunal colonization at post-eruptive deep-sea hydrothermal vents*. Deep Sea Research Part II, 121:31-40.

Vetriani, C., Voordeckers, J.W., Crespo-Medina, M., O'Brien, C.E., Giovannelli, D., & Lutz, R.A. (2014). *Deep-sea hydrothermal vent Epsilonproteobacteria encode a conserved and widespread nitrate reduction pathway (Nap)*. The ISME Journal 8:1510–1521.

Giovannelli, D., Ricci, J., Pérez-Rodríguez, I., Hügler, M., O'Brien, C., Keddiss, R., Grosche, A., Goodwin, L., Bruce, D., Davenport, K.W., Detter, C., Han, J., Han, S., Ivanova, N., Land, M.L., Mikhailova, N., Nolan, M., Pitluck, S., Tapia, R., Woyke, T., & Vetriani, C. (2012). *Complete genome sequence of Thermovibrio ammonificans HB-1T, a thermophilic, chemolithoautotrophic bacterium isolated from a deep-sea hydrothermal vent*. Standards in Genomic Sciences 7:82–90.

Giovannelli, D., Ferriera, S., Johnson, J., Kravitz, S., Pérez-Rodríguez, I., Ricci, J., O'Brien, C., Voordeckers, J.W., Bini W., & Vetriani, C. (2011). *Draft genome sequence of Caminibacter mediatlanticus strain TB-2T, an epsilonproteobacterium isolated from a deep-sea hydrothermal vent*. Standards in Genomic Sciences 5:135–143.

McCarthy, J.K., O'Brien, C., & Eveleigh, D.E. (2003). *Thermostable continuous coupled assay for measuring glucose using glucokinase and glucose-6-phosphate dehydrogenase from the marine hyperthermophile Thermotoga maritima*. Analytical Biochemistry 318(2):196-203.

## PROFESSIONAL PRESENTATIONS:

Smith, L. & O'Brien, C. *Early Detection: A Comprehensive Cognitive Screening Tool for ADRD Through Innovative Mobile App Technology*. Gerontological Society of America 2024 Annual Scientific Meeting. Seattle, WA (November 2024).

Smith, L. & O'Brien, C. *Use of Chair Exercises for Increasing Heart Rate During Pilot Testing of mPACT App*. Alzheimer's Association International Conference, Amsterdam, Netherlands (July 2023).

O'Brien, C. *Reconstructing the Parisian Salon de 1785 in VR*. St. Louis Digital Humanities Showcase 2, St. Louis, MO (April 2023).

Hutson, J., Olsen, T., O'Brien, C., & Weber, J. *Reproduire l'histoire: Multi-Sensory Reconstructions of Historical Interiors for Virtual Reality*. Deutsches Forum für Kunstgeschichte, Paris, France (November 2022).

O'Brien, C. *Encouraging Users Through Gamification: A Case Study of the mPACT App*. East Coast Game Conference, Raleigh, NC (April 2021).

O'Brien, C. *Making games in Unreal Engine*. Coworking Night, Huntsville, AL (January 2019).

O'Brien, C. *Jacbil Gobbet*. Gameacon, Atlantic City, NJ (October 2017).

O'Brien, C. *Creating Design Documents*. Coworking Night, Huntsville, AL (June 2017).

O'Brien, C. *Creating Games Without Code*. Global Game Jam, Huntsville, AL (May 2017).

O'Brien, C. *Creating Design Documents*. Coworking Night, Huntsville, AL (March 2017).

## HONORS PROJECTS OVERSIGHT AND ADVISING:

- Lorelei "Suns" Bachuss, "Designing a Website for the Southeastern Diversity Project" (Fall 2024)
- Jason Lake, Honor's Contract, "Designing Levels for a Platformer" (Spring 2024)
- Briana Moore, Capstone Project, "Creation, Design, and Development of a Professional Blog for Orange Rose Photography" (Spring 2024)
- Jennifer Atchison, Honor's Contract, "Rigging a Cephalopod Model" (Fall 2022)
- Hailey Porter, Capstone Project, "Designing, Developing, and Publishing a Mobile Game *Viral Appetite* on the GooglePlay Store" (Spring 2022)

## GAME/APP PROJECTS:

**Arcade Game** - *Picklepock*, by TanoshiPlay Under review

**Puzzle Game** - *Tethers!*, by Charles O'Brien, et. al. Beta Testing  
<http://www.stencyl.com/game/play/36784> (current build)

**Puzzle Exploration** - *Path of Kami: The Journey Begins*, by Captilight Published 11/2022  
[https://store.steampowered.com/app/1558840/Path\\_of\\_Kami\\_Journey\\_Begins/](https://store.steampowered.com/app/1558840/Path_of_Kami_Journey_Begins/)

**Strategy Game** - *Castle Woodwarf II*, by Domogames Published 10/2019  
[https://store.steampowered.com/app/1065580/Castle\\_Woodwarf\\_2/](https://store.steampowered.com/app/1065580/Castle_Woodwarf_2/)

**Strategy Game** - *Castle Woodwarf*, by Domogames Published 10/2019  
[https://store.steampowered.com/app/1123300/Castle\\_Woodwarf/](https://store.steampowered.com/app/1123300/Castle_Woodwarf/)

**Side-Scroller** - *Arctic Offensive on Android and iOS*, by Matti Junila Published 02/2018



<https://appadvice.com/app/arctic-offensive/1275270332>

**Multi User Dungeon** - StencykMUD, by Charles O'Brien

Abandoned

<http://www.stencyl.com/game/play/36957> (server down)

**Tower Defense** - TowerRTS, by Bruno Broicher  
(game under NDA and not released)

Completed 12/2017

**Clicker** - Asteroid BLAST! Holographic on Hydrogen One, by 9FFGames Completed 10/2017

<https://www.moddb.com/games/asteroid-blast>

**MMORPG** - Realms of Kesmai Remake, by Owen Chanovich

Completed 10/2017

<http://www.stencyl.com/game/play/37345> (current build, approved for distribution by client)

Featured at the Gameacon Convention in Atlantic City, NJ, October 2017

**Sports Games** - Power Spikes re-make, by Federico Bigliocca

Completed 10/2017

<http://www.stencyl.com/game/play/37358> (initial prototype sent to client)

Featured at the Gameacon Convention in Atlantic City, NJ, October 2017

**Arcade Shooter** - Squirrels Gone Wild, by Big Hoss Games

Published 09/2017

<https://itunes.apple.com/us/app/squirrels-gone-wild/id1269976597?ls=1&mt=8>

<https://apkpure.com/squirrels-gone-wild/com.bighossgames.squirrels>

**Action Platformer** - Radical Spectrum 2, Autonomic Interactive

Published 08/2017

[http://store.steampowered.com/app/661300/Radical\\_Spectrum\\_Volume\\_2/](http://store.steampowered.com/app/661300/Radical_Spectrum_Volume_2/)

**2D Platformer** - Back to the Pond, by Leap Frog Solutions, Inc.

Published 04/2017

<https://apkpure.com/kr/back-to-the-pond/com.LeapFrogSolutions.TheGame>

2017 AVA Digital Award Gold Winner

**2D Platformer** - Frozen Dash, by Leap Frog Solutions, Inc.

Published 03/2017

<https://appadvice.com/app/frozen-dash-leapfrog-solutions/1219457710>

2017 Platinum Hermes Award Winner

**Clicker** - Asteroid BLAST by 9FFGames

Published 11/2016

<https://play.google.com/store/apps/developer?id=9FFGames&hl=en>

**Arcade Shooter** - Radical Spectrum I, by Autonomic Interactive

Published 08/2016

<http://store.steampowered.com/app/486150/>

**Sports Game** - Soccer Headz, by Andy Pineda

Published 05/2016

<https://itunes.apple.com/us/app/soccer-headz-free/id1109201485?mt=8>

<https://appadvice.com/app/soccer-headz-free/1109201485>

**Brick Breaker** - Break-Out Casino Game, by Jon Muskin  
(game under NDA and not publicly released) Completed 02/2016

**Shoot 'em Up** - Dead6hot, by Charles O'Brien and Ridhwaan Patel  
<http://store.steampowered.com/app/438030> Published 01/2016

**Space Shooter** - Galiga Casino Game, by Jon Muskin  
(game under NDA and not publicly released) Completed 11/2015

**Card Game** - Daring Adventures, by Vellum Information  
<https://velluminformation.com/2015/07/31/daring-adventures-free-version-for-ios-and-android> Published 10/2015

**Action Platformer** - SEO Battle Kingdom, by Go Fish Digital  
<https://gofishdigital.com/seo-game/> (broken link) Completed 08/2015  
<http://www.stencyl.com/game/play/31518> (requires flash player)

**Kids Games** - Popcorn Maker, by Dario Lessa  
<https://play.google.com/store/apps/details?id=com.djlessa.popcornmaker> Published 08/2015

**Memory Match** - Match Match, by Vellum Information  
<https://play.google.com/store/apps/details?id=com.velluminformation.matchmatch&hl=en> Published 04/2014

**Memory Game** - Erudite Hard, by Vellum Information  
<https://play.google.com/store/apps/details?id=com.velluminformation.eruditehard&hl=en> Published 04/2014

**Memory Game** - Erudite Basic, by Vellum Information  
<https://play.google.com/store/apps/details?id=com.velluminformation.eruditebasic&hl=en> Published 04/2014

**Memory Match** - Heroic Match, by Vellum Information  
<https://play.google.com/store/apps/details?id=com.velluminformation.heromatch&hl=en> Published 04/2014

**Card Game** - Time Warp, by Vellum Information Completed 01/2014

## SERIOUS GAMES:

**VR Simulation** - Parisian Salon from 1785  
Awaiting early alpha release Ongoing

**Cognitive Analysis** - Neurospective Early Screening for Dementia  
Awaiting early alpha release Ongoing

**Mobile Training App** - Alzheimer's and Dementia Intervention (mPACT) Ongoing  
[https://drive.google.com/file/d/1K1HhZGk\\_tyoMURGFAMX0sjoe3w7X-JRJ/view?usp=sharing](https://drive.google.com/file/d/1K1HhZGk_tyoMURGFAMX0sjoe3w7X-JRJ/view?usp=sharing)

**Memory Training** - Memory Games, by Ron White Published 05/2015  
<http://brainathlete.com/ultimate-memory-matching-game/> (broken link)  
<https://itunes.apple.com/us/app/ron-whites-facematch/id993494592?ls=1&mt=8> (disabled)

**Music Education** - Ear Trainer Pro, by Lutz Academy Completed 05/2016  
(Game is under NDA and never published by client)  
<http://www.stencyl.com/game/play/32858> (initial prototype requires flash player)

**Companion Apps** - Obama Llama App, by Big Potato Published 10/2015  
<https://itunes.apple.com/us/app/obama-llama-app/id1038500531?ls=1&mt=8>

**Productivity Apps** - Weekly Checklist for Destiny, by Adhikari Published 04/2015  
<https://play.google.com/store/apps/details?id=com.adhikari.destinyapp>