

KENDRA H. OLIVER

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PERSONAL NARRATIVE

My journey weaves the intricate tapestry of design, art, science, technology, and education. Design is a bridge that connects diverse disciplines and enables more inclusive, human-centered scientific dialogue. Specializing in visual science communications, I harness the power of digital tools, online education pedagogies, and data visualization to craft compelling narratives for science. I thrive on developing strategies that intertwine art and science. While my roots are in pharmacology research, my passion has evolved into science education and design. I bring project management, online pedagogy, video creation, instructional crafting, and web aesthetics skills to multi-disciplinary teams aiming to engage diverse audiences. My current endeavors involve curating multimedia content such as interactive art pieces, videos, and websites.

In addition to generating visually engaging science communication projects, I perform design research to continually evaluate the effectiveness of cross-disciplinary programming using UX user-centered design methodologies, including surveys, interviews, personas, journey mapping, website analytics, competitive analysis, and others. My research spans the interaction of user experience, program evaluation, educational research, and collaboration methods for cross-disciplinary design processes. Using qualitative and quantitative approaches, I evaluate cross-disciplinary programming and products to improve and share our practices iteratively. My practice-first-led research has succeeded with initiatives like the VI4 Artist-in-Residence Program, Nested Knowledge, and ArtLab.

During my doctoral studies, I honed my educational and communicative aptitude while excelling at bench science. A pre-doctoral American Heart Association Fellowship supported me, and I simultaneously completed a Certificate in College Teaching and delved into the Blended-Online Learning Design Fellowship. I then embarked on a postdoctoral journey at Vanderbilt University Medical Center under Dr. Billy Hudson's guidance, immersing myself in Discovery Science Education. This phase enriched me, allowing interactions with students across all age groups and leading to the inception of the ArtLab program. This initiative has flourished into a nationwide community of artist-scientists passionate about visual science storytelling. In 2018, I embraced the role of an online programming instructor within the Pharmacology Department, ascending to Assistant Professor in 2019. My responsibilities expanded to mentor budding communicators in science and experimental design. In 2022, I also completed a Master of Professional Studies in User Experience (UX) Design from Maryland Institute College of Art. Recently, I was promoted to Associate Professor and designated as the Director of Design for the School of Medicine Basic Sciences.

PRINCIPAL FIELD OF INTEREST

Practice of Art-Science, UX Design, and Program Design | Theory of: Art + Science, Biotech + Science, Informal Science Education, Aesthetics, Interactive exhibitions, User experience, design methods

EDUCATION

Dec 2022 | Master of Professional Studies, User Experience Design
Maryland Institute College of Art, Baltimore, MD, USA

Apr 2018 | Postdoctoral Fellowship in Discovery Science Education
Vanderbilt University Medical Center, Nashville, TN, USA | "Discovery Science Education" under the mentorship of Professor Billy G. Hudson and VUMC Vice President Dr. Julie Hudson

Jun 2016 | Ph.D., Pharmacology
Vanderbilt University, Nashville, TN, USA | "Novel implications of lost serotonin transporter function on platelet biology" under the mentorship of Professor Heidi Hamm and Assistant Professor Ana M.D. Carneiro.

Aug 2010 | B.S., Biology
Loyola University, Chicago, IL, USA

POSITIONS

Director of Design | Apr 2023 -
School of Medicine Basic Sciences, Vanderbilt University

Associate Professor | Apr 2023 -
Department of Pharmacology | School of Medicine Basic Sciences, Vanderbilt University

Assistant Professor | Apr 2019 – April 2023
Department of Pharmacology | School of Medicine Basic Sciences, Vanderbilt University

Senior Lecturer | Oct 2018 -
Communication of Science and Technology, College of Arts and Science, Vanderbilt University

Instructor | Apr 2018 – Apr 2019
Department of Pharmacology, School of Medicine Basic Sciences, Vanderbilt University

Visiting Lecturer and Mentor | Aug 2017 -
The Wond'ry, Vanderbilt University

Scientific Program Manager | Aug 2016 – Mar 2018
The Division of Nephrology and Hypertension at Vanderbilt University Medical Center, Aspirnaut™

HONORS, FUNDING, AND AWARDS

	LOCATION	DATE	AMOUNT
<i>NIAAA P60 - Alcohol Research Center Dissemination core</i> , PI: Danny Winder, Key personnel (ArtLab)	Nashville, TN, USA	2023	<i>Pending award distribution</i>
<i>NSF/ITEST: STEM Identity Work and Play through Place-based Learning and Digital Storytelling</i> , PI: Heid Carlone, Key personnel (ArtLab)	Nashville, TN, USA	2023	\$1,299,788

<i>Nested Knowledge</i> : disentangling history, truth, and race in STEM experiences - Mellon Partners in Humanities Education Faculty Collaboration Funds, PI	Nashville, TN, USA	2021	\$13,450
Vanderbilt Institute for Infection, Immunology, and Inflammation (VI4) Artist in Residence (AiR) Program (VI4-AiR) - Burroughs Wellcome Fund, Co-PI with Eric Skaar	Nashville, TN, USA	2020	\$75,000
Public Health Simulator - The Computational Thinking and Learning Initiative (CTLI) Provost Research Studio Award	Nashville, TN, USA	2020	\$1200
Curb Center Catalyst Creativity Grant, PI	Nashville, TN, USA	2018	\$4,000
(Awarded along with undergraduate mentee, Eve Moll)	Nashville, TN, USA	2017	\$2,000
ASPET Travel Award	San Diego, CA, USA	2016	\$1,000
American Heart Association Pre-Doctoral Fellowship (14PRE19640007)	Nashville, TN, USA	2014	\$53,688
SFB35 Student Travel Award- Transporters in Health and Disease	Vienna, Austria	2014	\$250
Vanderbilt Graduate Student Travel Award	Nashville, TN, USA	2013	\$1,000
ATVB Young Investigator Travel Award	Dallas, TX, USA	2013	\$1,000
Mechanisms of Vascular Biology Training Grant	Nashville, TN, USA	2013	\$23,844
Clinical Research Grants, VICTR	Nashville, TN, USA	2013	\$2,000

SELECTED EXHIBITIONS + CURATION

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Solo / Commissioned

- 2023 | *angular energy*, visualizations for marimba performance by Ji Hye Jung, Quantum Potential, TN
- 2023 | *nexus of ingenuity*, speaker gift from pharmacologygraduate students, TN
- 2023 | *hopeful regulator*, speaker gift from pharmacologygraduate students, TN
- 2023 | *P450*, Celerating accomplishments of a P450 scientists, TN
- 2023 | *biorender+*, series of graphics created for Robert Coffey lab at Vanderbilt university medical center for GI SPORE grant submission, TN
- 2020 | *disversity series*, posters to support DEI effort within the basic sciencs, TN
- 2020 | *synapse*, Neuron cover image for Conn lab selected for Volume 105 Number, Issue 1
- 2020 | *hook*, Nucleic Acids Research cover image for Eichman lab selected for Volume 48, Issue 13
- 2020 | *privacy please*, series of artwork based on the study of genertic privacy in the Blade Runner cannon, TN
- 2022 | *cox-2*, celebration of Larry Marnett's tenure as dean, TN

Curation

- 2023 | *Vestigo 150*, visual display of 150-yrs of basic sciences at Vanderbilt, Vanderbilt Fine Arts Gallery, TN
- 2023 | *Molecular Muse*, showcase of 5-yrs of VI4 AiR Program, Vanderbilt Fine Arts Gallery, TN
- 2019 | *Lights Lasers and Lenses*, The Wond'ry, TN
- 2019 | *Connecting the Dots*, The Curb Center for Art, Enterprise & Public Policy, TN
- 2017 | *ArtLab: Intersection of art and science*, The Wond'ry, TN

Digital works

artlabvanderbilt.com | ArtLab website

artlab-air.com | Vanderbilt Institute for Infection, Immunology, and Inflammation Artist in Residence Program

[YouTube playlist](#) | Research videos for Basic Sciences

[Drug Discovery Online](#) | sunsetted program offering online courses in drug discovery and development

[Twitter](#) and [Instagram](#) accounts for ArtLab

scivid.online | sunsetted website showcasing resources for creating science education videos

[Nested Knowledge](#) | Program disentangling history, truth, and race in STEM experiences

Artistic Publications

2022 | VI4 Artist in Residence Program [Annual Report](#), Editor

2022 | Vestigo, [Issue 4](#), Illustrator

2021 | Vestigo, [Issue 3](#), Illustrator

2021 | VI4 Artist in Residence Program [Annual Report](#), Editor

2021 | Vestigo, [Issue 2](#), Illustrator

2020 | VI4 AiR Program 2020, Editor

2020 | Vestigo, [Issue 1](#), Illustrator

2019 | Catalog for ArtLab Exhibition, Editor

2018 | American Society of Civil Engineering [Art Show](#), Editor

2017 | ArtLab; Intersection of Art and Science [catalog](#), Editor

INVITED TALKS AND WORKSHOPS

Talk Title	Location	Date	Role
Art of science: XR to enhance science communication	SECAC (Southeastern College Art Conference) – Richmond Virginia	10/12/23	Speaker panelist
AI-Art Workshop	ENFOLD - Burroughs Wellcome Fund Symposium of Art-Science	09/27/2023	Invited guest
How to: Use Canva Pt.2	Virtual – School of Medicine Basic Science Staff Development Series	08/11/2023	Speaker
How to: Use Canva Pt.1	Virtual – School of Medicine Basic Science Staff Development Series	06/09/2023	Speaker
How to: Craft Impactful Graphics	Virtual – School of Medicine Basic Science Staff Development Series	03/24/2023	Speaker
Is #BetterPoster Really Better?	Center for Clinical Quality and Implementation Research Scholarly Series	03/03/2023	Seminar speaker
Art:ab's Visual Guide to Data Visualization	CCQIR Scholarly Series	02/17/2023	Seminar speaker
New Virtual Frontiers in STEAM with ArtLab	SECAC (Southeastern College Art Conference) – Baltimore	10/26/2022	Speaker
Why STEAM?	SECAC (Southeastern College Art Conference) – Baltimore	10/26/2022	Session chair
The role of design in online education	ISC Director meeting	07/2022	Seminar speaker
“Art-ifying” Your Science How Scientists Can (and Do) Use Art to Communicate Their Work	Bacterial Locomotion and Signal Transduction Conference	01/2021	Workshop leader

How the digital world is changing science	Bacterial Locomotion and Signal Transduction conference	01/2021	Workshop leader
Video production for scientists: a step-by-step approach to videography	The Association of Biomolecular Resource Facilities	09/2020	Workshop leader
Creating Effective Virtual Training Content for Cores: Using low-budget resources to create high quality videos	Core Exchange Virtual Event	09/2020	Workshop leader
Using digital communication strategies to your advantage; websites, videos, courses and more	Vanderbilt Shared Resource & Core Retreat	09/2019	Speaker
ArtLab: Building an Art-Science community at Vanderbilt	Department of Biological Sciences Annual Retreat	05/2019	Keynote Speaker

PROFESSIONAL MEMBERSHIPS

SECAC (Southeastern College Art Conference)	2022 – Present
Association of Science and Technology Centers	2020 – Present
Academy of Academic Excellence	2021 – Present
International Society of Medical Educators	2019 – Present
American Society of Bioethics	2018 – Present
American Society of Cell Biology	2016 – Present
American Society of Nephrology	2016 – 2018
American Physiological Society	2015 – 2016
American Heart Association	2014 – 2016, 2020 – Present
Atherosclerosis, Thrombosis, and Vascular Biology	
American Society for Pharmacology and Experimental Therapeutics	2012 – Present

SERVICE

Academy of Academic Excellence	2023	Communications committee
Academy of Academic Excellence	2023	Board Member
PLOS ONE	2023	Academic Editor
Immersion Vanderbilt Faculty presentation and advisor	2022	Faculty representative
Reviewer, International Journal of STEM Education	2020	Reviewer
Online Learning Community at the Center for Teaching	2019	Member
Provost Appointed Online Education Committee	2019	Member
ArtLab	2017 – Current	Founder/Director
Day of Discovery: 7 th -8 th grade outreach with ArtLab	2019	Instructor
SyBURRE Searle Undergraduate- Research Program	2016 – 2019	Scientific adviser
Adventure Science Center Volunteer	2016	Volunteer
Vanderbilt Pharmacology Student-Invited Form Committee	2016	Member
Vanderbilt Pharmacology Graduate Student Association	2015	President
Review Committee for Vanderbilt Pharmacology Journal Club	2014 - 2015	Member

TEACHING AND PROGRAMMING*please reach out for education portfolio*

COURSE NAME	DEPARTMENT	DATE	ROLE	AFFILIATED FACULTY
Creating effective presentations and visuals to communicate science	Intgrated Graducate Program and Quantative and Systems Biology Program	11/8/2023	Lecturer	Madhvi Venkatesh, Ph.D.
Data Visualization for the Biomedical Scientist	Master of Science in Clinical Investigations	10/6/2023	Lecturer	MSCI 5002 Scientific Writing & Communication Julie Bastarache, M.D. Alissa Weaver, Ph.D.
Elements of Experimental Design	Cell and Developmental Biology	10/2021	Lecturer	Alissa Weaver, Ph.D.
Rigor and Reproducibility; Foundations of Experimental Design and Hypothesis Testing	Medical Scientist Training Program	11/2021	Lecturer	Lourdes Estrada, Ph.D.
VI4 AiR Program 2023	VU-VUMC Cross programming School of Medicine Basic Sciences Dean's office programming	Summer 2023	Director	Eric Skaar, Ph.D., M.P.H.
Exploring the overlap between art, science, and design	School of Medicine Basic Sciences Community programming	Spring 2023	Program organizer	N/A
Mastery Mondays: science animations using blender	School of Medicine Basic Sciences Community programming	Spring 2023	Program organizer	N/A
Website Wednesdays: Sharing best practices for web building and design with the Basic Science community	School of Medicine Basic Sciences Community programming	Spring 2023	Program organizer	N/A
VI4 AiR Program 2022	VU-VUMC Cross programming	Summer 2022	Director	Eric Skaar, Ph.D., M.P.H.
Foundations of Experimental Design and Hypothesis Testing	Neuroscience Training Program	12/2021	Lecturer	Carrie A. Grueter, Ph.D.
Experimental Design and Hypothesis Testing	Medical Scientist Training Program	11/2021	Lecturer	Lourdes Estrada, Ph.D.
Rigor and Reproducibility for Biomedical Scientists	Cell and Developmental Biology	10/2021	Lecturer	Alissa Weaver, Ph.D.
Overview of Drug Discovery	Quantitative and Systems Biology Program	09/2021	Lecturer	Vito Quaranta, M.D.
VI4 AiR Program 2021	VU-VUMC Cross programming	Summer 2022	Director	Eric Skaar, Ph.D., M.P.H.
Cardiovascular Pharmacology - Targets	Pharmacology	01/2021	Lecturer	Alan Brash, Ph.D.

Immersion Mentor	Communication of Science and Technology	Ongoing	Mentor	David Weintraub, Ph.D.
Overview of Drug Discovery	Quantitative and Systems Biology Program	09/2020	Lecturer	Vito Quaranta, M.D.
VI4 AiR Program 2020	VU-VUMC Cross programming	Summer 2020	Director	Eric Skaar, Ph.D., M.P.H.
EMSE Online Teaching Certificate		Jan 2020		
VI4 AiR Program 2019	VU-VUMC Cross programming	Summer 2019	Director	Eric Skaar, Ph.D., M.P.H.
BrightSpace Training Certificate		Jun 2019		
ArtLab Fellowship	Wond'ry	Fall 2018	Director	David Owens
ArtLab Fellowship	Curb Center	Fall 2018	Director	Jay Clayton

MENTORING

TRAINING PERIOD	MENTEE NAME	MENTEE ROLE	CURRENT POSITION	TOPIC
January 2021-Present	Helen Qian	Immersion Student	Undergraduate Student	Communication of Science and Technology
January 2021-May 2023	Qi (Kathy) Liu	Immersion Student	Undergraduate Student	Communication of Science and Technology
Aug 2020 - May 2023	Janet Mariadoss	Immersion Student	Medical Student	Communication of Science and Technology
Jun 2020 - Aug 2020	Alexander M. Martinez Lopez	SURE Scholar	Undergraduate Student	AHA CV Summer Program
Jan 2020 - May 2022	Navya Thakkar	Immersion Student	Undergraduate Student	Communications of Science and Technology
Jan 2020 - May 2022	Skylar Cuevas	Immersion Student	Medical Student	Communications of Science and Technology
Aug 2019 - May 2022	Stephanie Castillo	Graduate Research	Graduate student	Science Communication
Aug 2018 - May 2020	Eve Moll	CSET Internship	Medical Student	Exploring the Intersection of Art and Medicine
Aug 2018 - May 2020	Justin Chediak	CSET internship	Medical Student	Interactive Display of Research in Stevenson Center
Aug 2018 - Present	Matthew Gothard	ArtLab Fellow	Undergraduate student	Interactive experiences with coding and kinetic art
Jun 2018 - Aug 2018	Favour Akabogu	Aspirnaut Student	Research Assistant	Medical Research
Aug 2016 - Present	Emily Layton	ArtLab Studio Assistant	Post-graduate student	Communication of Science and Technology

PEER-REVIEWED ARTICLES

14. Skylar Cuevas, Qi (Kathy) Liu, Helen Qian, Max E. Joffe, Karisa Calvitti, Megan Schladt, Eric P. Skaar, and **Kendra H. Oliver**. How to design an art-science program? Self-reported benefits for artists and scientists in the VI4 artist-in-residence program. *Plos one*. Dec 30, 2022.
 13. Tinuola B. Ajayi, Adrienne L. Mueller, Ike S. Okwuosa, Asha Barshilia, Joseph C. Wu, , Emelia J. Benjamin, Joey V. Barnett, **Kendra H. Oliver**. Innovations in undergraduate research training through multi-site collaborative programming: American Heart Association Summer Undergraduate Research Experience Syndicate. *Journal of the American Heart Association*. Apr 19, 2022.
 12. **Kendra H. Oliver**, Stephanie Higgs, and Jay Clayton. The End of Genetic Privacy in the Blade Runner Canon. *Journal of Literature and Science*. 2022.
 11. **Kendra H. Oliver**, Christina Keeton, Roger Chalkley, and Elizabeth Bowman. Virtual Vanderbilt Summer Science Academy highlighted the opportunity to impact early STEMM students career knowledge through narrative. *Plos one*. Nov 10, 2021.
 10. Stephanie Castillo, Karisa Calvitti, Jeffery Shoup, Madison Rice, Helen Lubbock, **Kendra H. Oliver**. Outlining the Production Processes for Creating Educational Videos. *CBE-Life Sciences Education*. Summer 2021.
 9. Max E. Joffe, Chiaki I. Santiago, **Kendra H. Oliver**, James Maksymetz, Nicholas A. Harris, Julie L. Engers, Craig W. Lindsley, Danny G. Winder, P. Jeffrey Conn. mGlu2 and mGlu3 Negative Allosteric Modulators Divergently Enhance Thalamocortical Transmission and Exert Rapid Antidepressant-like Effects. *Neuron*. Jan, 2020.
 8. **Kendra H. Oliver**, Jonathan Erhman, and Christina Marasco. *Vigilante Innovation (VIX): Case study on the development of student skills through a team-based design process and environment*. *International Journal of STEM Education*. Oct, 2019.
 7. **Kendra H. Oliver**, Eve Moll, and Marilyn Murphy. *The woman scientist: Brief reflections of the visual representation on women*. Leonardo, MIT Press. Jun 2019.
 6. Amanda K Darbyshire, **Kendra H. Oliver**, William D Dupont, Kelli Boyd. *Anesthesia and Euthanasia of Brine Shrimp (Artemia franciscana)*. *Journal of the American Association for Laboratory Animal Science*. Jan 2019.
 5. Amanda K. Darbyshire, **Kendra H. Oliver**, Tammy L. Mulrooney, Carissa P. Jones, and Kelli L. Boyd. *Effects of anesthesia and euthanasia solutions on the histologic quality of brine shrimp (Artemia franciscana)*. *Journal of Histotechnology*. May 2017.
 4. Michael Dohn, Christopher Kooker, Lisa Bastarache, Tammy Jessen, Capria Rinaldi, Seth Varney, Matthew Mazalouskas, Hope Pan, **Kendra H. Oliver**, Digna Velez Edwards, James Sutcliffe, Joshua Denny, and Ana Carneiro. "The Gain-of-Function Integrin $\beta 3$ Pro33 Variant Alters the Serotonin System in the Mouse Brain". *Journal of Neuroscience*. Aug 2017.
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3. **Kendra H Oliver**, Danielle Picard, John Wikswo, Cynthia Brame. Use of Web-logs (Blogs) to Promote Student Ownership. The FASEB Journal. The Federation of American Societies for Experimental Biology. April, 2016
 2. **Kendra H. Oliver**, Matthew T. Duvernay, Heidi E. Hamm, and Ana M.D. Carneiro. *Loss of Serotonin Transporter Function Alters ADP-Mediated Integrin α IIb/ β 3 Activation through Dysregulation of the 5-HT_{2A} Receptor*. Journal of Biological Chemistry. Jul 2016.
 1. **Kendra H. Oliver**, Tammy Jessen, Emily L Crawford, Chang Y Chung, James S Sutcliffe, and Ana M Carneiro. *Pro32Pro33 Mutations in the Integrin β 3 PSI Domain Results in α IIb β 3 Priming and Enhanced Adhesion: Reversal of the Hypercoagulability Phenotype by the Src Inhibitor SKI-606*. Mol Pharmacol. Jun 2014.
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