

Curriculum Vitae

Laura A. Garrison, PhD

Visualization & human-data interaction

My research investigates processes and assumptions designers make when crafting visualizations, and their impact on audience engagement and behavior.

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AREAS OF INTEREST

Data visualization, visual data science/analytics, visual communication, narrative visualization, visual storytelling, interactive illustrative visualization, human-data interaction, medical and scientific illustration

SELECTED PROFESSIONAL EXPERIENCE

Associate Professor in Visualization (Tenure-Track) – Institute for Informatics, University of Bergen, Norway

July 2023 – present

I am an Associate Professor of Visualization in the Institute for Informatics at the University of Bergen and affiliated with the Mohn Medical Imaging and Visualization Centre (MMIV) and the Centre for Data Science (CEDAS) in Bergen, Norway. My research investigates the **blending of art, science, and technology to ask better questions and share stories about complex phenomena in health and medicine, particularly in how visual rhetorical and narrative approaches can impact audience comprehension, engagement, emotions, and behavior**. My teaching includes supervision of individual bachelor and master student projects in visualization, and teaching INF 252 (Visualization). I currently supervise two PhD fellows (main supervisor), and co-supervising an additional PhD fellow.

Consultant – Bouvet, Bergen, Norway

Jan - June 2023

I was based in the Bergen office of Bouvet, a technology consulting firm servicing businesses spanning several industry sectors, both public and private, across Scandinavia. My speciality areas included **Visualization, Data Science, and UI/UX Design**. The working language in Bouvet is Norwegian.

Visualization Researcher & Medical Illustrator – Mohn Medical Imaging and Visualization (MMIV) Centre and Center for Data Science (CEDAS), Bergen, Norway

2023 – present

I served as the representative of the **visualization branch of research on the MMIV leadership team** and carried out visualization research in collaboration with colleagues within the MMIV and adjacent groups in Haukeland University Hospital, including the Centre for Diabetes research. I additionally created medical illustrations to support MMIV research in print and digital formats.

Visualization Researcher – University of Bergen in conjunction with Mohn Medical Imaging and Visualization (MMIV) Centre and Center for Data Science (CEDAS), Bergen, Norway

2018 – 2022

I developed novel, intuitive techniques for the exploration, analysis, and communication of physiological data and processes that occur within our bodies. My interactive visual solutions retained the user in the loop to leverage the relative strengths of humans and machines. At a broad level, my aim in my PhD research was to reduce the barrier to understanding this complex information and contribute to improving public health and health literacy. Funding for my research was provided by the Visual Data

Science for Large Scale Hypothesis Management in Imaging Biomarker Discovery (VIDI) project. Highlights include:

- **Published and presented internationally-collaborative research** in top visualization venues, including *Transactions on Visualization and Computer Graphics*, *Computer Graphics Forum*, and *Computers & Graphics*
- **Award-winning research:** Received Karl Heinz Höhne (MedVis) Award 2nd Place, Honorable Mention for Best Full Paper at VCBM Paris 2021, and Best Poster at EuroVis 2019
- **Invited speaker** to collaborating institutions and for the Bio+Med+Vis 2021 Spring School alongside an international panel of speakers in a week-long school targeted to early career medical visualization scientists
- **Supervision** of Master- and Bachelor-level student research and projects
- **Curriculum development** for INF100 (Introduction to Programming), administrative duties for INF101 (Object-oriented programming), and INF102 (Algorithms)

Scientific Technical Director – BioDigital, New York, NY, USA

2016 - 2018

BioDigital is an interactive 3D software platform for visualizing human anatomy, disease, and treatment, and is like Google Maps for the human body. Highlights of my time at BioDigital include:

- Worked with the executive team to **develop and manage the roadmap and best practices** for content creation, management, and organization in the BioDigital Human
- **Supervised the science team and oversaw the scientific and anatomical accuracy** of the BioDigital online virtual human body platform
- Met with clients and worked with the content and engineering teams to develop **scalable interactive 3D experiences that met the clients' communication needs** while supporting the major initiative to grow BioDigital's internal content library
- Part of an **interdisciplinary team from academia and industry** that was a finalist for NIH HuBMAP grant in 2018
- **Co-presented the BioDigital Human** at VIZBI 2018

Director of Medical Media – i-Human Patients, Inc. by Kaplan, Sunnyvale, CA, USA

2013 - 2015

i-Human Patients, Inc. creates comprehensive simulated patient encounters for medical students and practicing medical professionals that provide unparalleled immersion in the learning environment. i-Human Patient case scenarios help users develop critical clinical skills and diagnostic accuracy while providing an effective tool for educators to evaluate individual and group competencies.

Highlights of my time at i-Human include:

- **Oversaw creation, acquisition, and management of all media** used in i-Human Patient products, including the production of virtual patient avatars and anatomically accurate illustrations. In this role, I worked closely with other departments to quickly address media-driven bottlenecks for a diverse set of production deliverables
- **Led the development of a systematically organized media library** with a distributed team comprising content specialists, engineers, and outside contractors, incorporating over 4,000 assets, including audio, video, illustrations, and radiographs, all with differing viewing requirements
- **Oversaw corporate website**, assisted with UI design of flagship products, and created marketing and communication materials for trade shows and conferences
- **Presented products** at key trade show events

Production Artist – Emmi Solutions - Wolters Kluwer, Chicago, IL, USA

2013 – 2014

Emmi Solutions is a healthcare communications company, now acquired by Wolters Kluwer, focused on health literacy and empowering the patient to be more active in their healthcare decisions. Highlights of my time at Emmi include:

- **Planned and executed animation content and sequences** for modules in collaboration with art and editorial directors as well as content writers. Used Adobe Flash and Illustrator
- **Started a daily drawing club** and blog for the production art group to experiment with drawing techniques and promote creativity

Medical illustration Intern – Journal of the American Medical Association, Chicago, IL, USA

Spring 2012

Internship in partial satisfaction of Master's degree in Biomedical Visualization from the University of Illinois at Chicago for the Journal of the American Medical Association (JAMA). I worked within a **fast-past production pipeline to create illustrations featured in the following JAMA articles:**

- J. M. Torpy, **L. A. Schwartz (Garrison)**, R.M. Golub, “Rosacea” (Patient Page), *JAMA*, vol. 307(21), p.2333, June 2012. doi: 10.1001/jama.2012.3942
- A. R. Punnoose, **L. A. Schwartz (Garrison)**, R.M. Golub, “Neonatal hyperbilirubinemia” (Patient Page), *JAMA*, vol. 307(19), p. 2115, May 2012. doi: 10.1001/jama.2012.4070
- J. M. Torpy, **L. A. Schwartz (Garrison)**, R.M. Golub, “Urinary tract infection” (Patient Page), *JAMA*, vol. 307(17), p. 1877, May 2012. doi: 10.1001/jama.2012.3885
- J. M. Torpy, **L. A. Schwartz (Garrison)**, R.M. Golub, “Snakebite” (Patient Page), *JAMA*, vol. 307(15), p. 1657, April 2012. doi: 10.1001/jama.2012.433
- A. Slomski. “US can draw insight from other nations’ experiences with evidence-based medicine,” *JAMA*, vol. 307(15), pp. 1567–1569, 2012. doi:10.1001/jama.2012.457
- F. D. Srygley, C. J. Gerardo, T. Tran, D. A. Fisher, “Does this patient have a severe upper gastrointestinal bleed?” *JAMA*, vol. 307(10), pp. 1072–1079, 2012. doi:10.1001/jama.2012.253

EDUCATION

PhD in Visualization – University of Bergen, Bergen, Norway

2018 - 2022

Thesis title: From Molecules to the Masses: Visual Exploration, Analysis, and Communication of Human Physiology

Advisors: Dr. Stefan Bruckner, Dr. Renate Grüner

Opponents: Dr. Miriah Meyer, Linköping University, Sweden & Dr. Tobias Isenberg, Inria, France

MS in Biomedical Visualization – University of Illinois at Chicago, IL, USA

2010 - 2012

BA in Biology/Physiology, minors: Art and Chemistry, Full Honors – Northern Michigan University, MI, USA

2005 - 2009

HONORS & AWARDS

- **1st Place Dirk Bartz Prize for Visual Computing in Medicine and Life Sciences 2023 (Eurographics Medical Prize)**, EuroVis Conference, Leipzig, Germany, 2023.
- **Best Redesign Challenge Entry**, Bio+MedVis Protein Beasts Redesign Challenge @ IEEE VIS, Oklahoma City, Oklahoma, 2022.
- **Honorable Mention Best Full Paper**, Eurographics Workshop for Visual Computing in Biology and Medicine, Paris, France, 2021.
- **Invited Participant**, GenderAct Program for Early Career Researchers, Faculty of Mathematics and Natural Sciences, University of Bergen, 2021-22.
- **Karl-Heinz Höhne (MedVis) Award**, 2nd place, FachGruppe Visual Computing in Biology and Medicine, Regensburg, Germany, 2021.
- **Best Poster Award**, EuroVis 2019, Porto, Portugal, 2019.
- **Best Student Entry**, Graphics Media, BioImages Annual Media Exhibition BioCommunications Association, 2012.
- **Award of Excellence**, Natural Science Illustration, BioImages Annual Media Exhibition, BioCommunications Association, 2012.
- **Chancellor's Student Service Award**, University of Illinois Chicago, Chicago, IL, 2012.
- **Finalist in Image of Research Competition**, University of Illinois Chicago, Chicago, IL, 2012.
- **Best Group Poster**, Student Celebration of Research and Creative Works, Northern Michigan University, Marquette, MI, 2009.
- **Winner of design competition for U.P. 200 Dog Races logo**, Marquette, MI, 2009.

GRANTS

- **Narrative ARCs NFR Proposal**, University of Bergen, PI: Stefan Bruckner, 2022. Co-wrote funding proposal, currently in preparation for resubmission (funding rate: 7%).
- **Melzer Grant**, University of Bergen, 2020. Received for year-long collaboration with Magdeburg.
- **NIH HubMAP Proposal**, BioDigital, PI: Evan Molinelli, 2018. Co-wrote funding proposal, passed 1st round, 2nd round unsuccessful.
- **Benjamin A. Gilman International Scholarship**, Northern Michigan University, 2007.

TEACHING/SUPERVISION

In addition to the following distinct teaching and supervisory roles, I have 10+ years of experience in science communication. In this capacity, I developed educational materials for diverse users and audiences. In this period, I accumulated five years of experience in content/technical direction roles for medical education, where I managed teams with multiple competencies and a wide range of expertise.

- **INF252** Visualization, University of Bergen. Course designer/instructor. Spring 2024.
- **Instructor** for Bjerknes Data Visualization Workshop, University of Bergen, Norway. 4-6 December 2023.
- **Instructor** for 10th Workshop on Collaborative Scientific Software Development and Management of Open Source Scientific Packages, Trieste, Italy. Included workshop material development with on-site instruction and mentoring. 6-17 November 2023.
- **[Master's semester project]** INF319 - supervise creation of data processing pipeline of MoBa study data for eventual input into visualization dashboard tool for broad access and use. Autumn 2023.
- **Master's semester project]** INF319 - supervise data-driven storytelling project for an empathetic and informative communication on hyperemesis gravidarum. Autumn 2023.
- **[Bachelor project]** Supervised INF219 (Project in informatics) group project to create a data driven visual story on changes in energy use in Norway over the last two centuries. Autumn 2023.
- **Instructor** for 9th Workshop on Collaborative Scientific Software Development and Management of Open Source Scientific Packages, Trieste, Italy. Included workshop material development with on-site instruction and mentoring. 28 Nov-9 December 2022.
- **[Bachelor project]** Supervised INF219 (Project in informatics) group project to create an application for semi-automatic generation and application of color palettes to molecular visualizations. Autumn 2022.
- **[Bachelor project]** Supervised INF219 (Project in informatics) group project to create a mobile-friendly application that allows patients suffering from chronic pain to visualize and document their pain. Spring 2021.
- **[Master's thesis]** Co-supervision of Master's Thesis (Visualization of MR spectroscopy data, Jakub Vašíček). Spring 2019.
- **INF100** Introduction to programming. Develop weekly exercises for course (Python). University of Bergen. Spring 2021, Autumn 2021, Spring 2022.
- **INF101** Object-oriented programming. Administrative duties, University of Bergen. Spring 2019, Spring 2020.
- **INF102** Algorithms, data structures and programming. Administrative duties, University of Bergen. Autumn 2019, Autumn 2020.
- **BIOS101** Populations and communities. Teaching assistant, discussion and lab sections. University of Illinois at Chicago. Spring 2011.
- **Tutor** in high school-level science, mathematics, and literature courses in the Upward Bound Program. Northern Michigan University. Spring 2006—Autumn 2009.

SCIENTIFIC PUBLICATIONS

Reviewed full journal papers

1. S. Mittenentzwei, V. Weiß, S. Schreiber, **L. A. Garrison**, S. Bruckner, M. Pfister, B. Preim, and M. Meuschke, "Do Disease Stories need a Hero? Effects of Human Protagonists on a Narrative

- Visualization about Cerebral Small Vessel Disease," *Computer Graphics Forum*, 2023. doi:10.1111/cgf.14817
2. **L. A. Garrison**, D. Goodsell, S. Bruckner, "Changing Aesthetics in Molecular Graphics," *IEEE Computer Graphics & Applications*, May-Jun;43(3):94-101, 2023, doi: 10.1109/MCG.2023.3250680
 3. S. Mittenentzwei, **L. A. Garrison**, E. Mörth, K. Lawonn, S. Bruckner, B. Preim, and M. Meuschke, "Investigating user behavior in slideshows and scrollytelling as narrative genres in medical visualization," *Computers & Graphics*, 2023. doi:10.1016/j.cag.2023.06.011
 4. M. Meuschke, **L. A. Garrison**, N. N. Smit, B. Bach, S. Mittenentzwei, V. Weiß, S. Bruckner, K. Lawonn, and B. Preim, "Narrative Medical Visualization to Communicate Disease Data," *Computers & Graphics*, vol. 107, pp. 144-157, 2022. doi: 10.1016/j.cag.2022.07.017
 5. **L. A. Garrison** and S. Bruckner, "Considering Best Practices in Color Palettes for Molecular Visualizations," *Design X Bioinformatics Special Issue of Journal of Integrative Bioinformatics*, 2022. doi: 10.1515/jib-2022-0016
 6. **L. A. Garrison**, I. Kolesár, I. Viola, H. Hauser, and S. Bruckner, "Trends & Opportunities in Visualization for Physiology: A Multiscale Overview," *Computer Graphics Forum*, vol. 41(3), pp. 609-643, 2022. doi: 10.1111/cgf.14575
 7. Y. Kristiansen, **L. A. Garrison**, S. Bruckner, "Semantic Snapping for Guided Multi-View Visualization Design," *IEEE Transactions on Visualization and Computer Graphics*, vol. 28(1), pp. 43-53, 2021. doi: 10.1109/TVCG.2021.3114860
 8. **L. A. Garrison**, J. Müller, S. Schreiber, S. Oeltze-Jafra, H. Hauser, and S. Bruckner, "DimLift: Interactive Hierarchical Data Exploration through Dimensional Bundling," *IEEE Transactions on Visualization and Computer Graphics*, vol. 27(6), pp. 2908-2922, 2021. doi: 10.1109/TVCG.2021.3057519
 9. J. Müller, **L. A. Garrison**, P. Ulbrich, S. Schreiber, S. Bruckner, H. Hauser, and S. Oeltze-Jafra, "Integrated Dual Analysis of Quantitative and Qualitative High-Dimensional Data," *IEEE Transactions on Visualization and Computer Graphics*, vol. 27(6), pp.2953-2966, 2021. doi: 10.1109/TVCG.2021.3056424
 10. **L. A. Garrison**, J. Vašíček, A. R. Craven, R. Grüner, N. Smit, and S. Bruckner, "Interactive Visual Exploration of Metabolite Ratios in MR Spectroscopy Studies," *Computers & Graphics*, vol. 92, pp. 1–12, 2020. doi: 10.1016/j.cag.2020.08.001

Reviewed full conference/workshop papers

11. A. Kleinau, E. Stupak, E. Mörth, **L. A. Garrison**, S. Mittenentzwei, N. N. Smit, K. Lawonn, S. Bruckner, M. Gutberlet, B. Preim, and M. Meuschke, "Is There a Tornado in Alex's Blood Flow? A Case Study For Narrative Medical Visualization," *Proceedings of EuroGraphics Workshop on Visual Computing for Biology and Medicine*, 2022. doi: 10.2312/vcbm.20221183.
12. Y. Kristiansen, **L. A. Garrison**, S. Bruckner, "Content-Driven Layout for Visualization Design," *Proceedings of the 15th International Symposium on Visual Information Communication and Interaction (VINCI)*, (3), pp. 1-8, 2022. doi: 10.1145/3554944.3554950
13. **L. A. Garrison**, M. Meuschke, J. Fairman, N. Smit, B. Preim, S. Bruckner, "An Exploration of Practice and Preferences for the Visual Communication of Biomedical Processes," *Proceedings of EuroGraphics Workshop on Visual Computing for Biology and Medicine*, 2021. doi: 10.2312/vcbm.20211339. **[Honorable Mention Best Full Paper]**
14. **L. A. Garrison**, J. Vašíček, R. Grüner, N. Smit, and S. Bruckner, "SpectraMosaic: An Exploratory Tool for the Interactive Visual Analysis of Magnetic Resonance Spectroscopy Data," *Proceedings of EuroGraphics Workshop on Visual Computing for Biology and Medicine*, 2019, pp. 1–10. doi: 10.2312/vcbm.20191225

Reviewed short papers/posters

15. H. Balaka, **L. A. Garrison**, R. Valen, and M. Vaudel, MoBa Explorer: Enabling the navigation of data from the Norwegian Mother, Father, and Child cohort study (MoBa)The Eurographics Association, 2023.
16. B. Budich, **L. A. Garrison**, B. Preim, and M. Meuschke, "Reflections on AI-Assisted Character Design for Data-Driven Medical Stories," in *Eurographics Workshop on Visual Computing for Biology and Medicine*, 2023. doi:10.2312/vcbm.20231216

17. **L. A. Garrison**, H. Bartsch, S. Bruckner, "Visualizing Protein Residue Chemical Modifications," *Proceedings of Bio+MedVis Challenge @ IEEE VIS (Poster)*, October 2022. [**Best Redesign Challenge Entry**]
18. H. Bartsch, **L. A. Garrison**, S. Bruckner, "Mouse—Human Hybrids," *Proceedings of Bio+MedVis Challenge @ IEEE VIS (Poster)*, October 2022.
19. H. Bartsch, **L. A. Garrison**, S. Bruckner, A. Wang, S. F. Tapert, and R. Grüner, "MedUse: A Visual Analysis Tool for Medication Use Data in the ABCD Study," *Proceedings of EuroGraphics Workshop on Visual Computing for Biology and Medicine (Short Papers)*, pp. 97–101, 2019. doi: 10.2312/vcbm.20191236
20. **L. A. Garrison**, J. Vašíček, R. Grüner, N. Smit, and S. Bruckner, "A Visual Encoding System for Comparative Exploration of Magnetic Resonance Spectroscopy Data", *Proceedings of Mohn Medical Imaging and Visualization Centre (MMIV) Conference 2019 (Poster)*, December 2019.
21. **L. A. Garrison**, J. Vašíček, R. Grüner, N. Smit, and S. Bruckner, "A Visual Encoding System for Comparative Exploration of Magnetic Resonance Spectroscopy Data," *Proceedings of EuroVis (Poster)*, June 2019. doi: 10.2312:eurp.20191137 [**Best Poster Award**]

Thesis/Book Chapters/Other

22. **L. A. Garrison**, M. Meuschke, B. Preim, and S. Bruckner, "Current Approaches in Narrative Medical Visualization," in *Approaches for Science Illustration and Communication*, M. Roughley, Ed., Gewerbestrasse 11, 6330 Cham, Switzerland: Springer, 2023.
23. **L. A. Garrison**, "From Molecules to The Masses: Visual Exploration, Analysis, and Communication of Human Physiology," PhD Dissertation, University of Bergen, 2022. Access: <https://bora.uib.no/bora-xmlui/handle/11250/3015990>

CONFERENCE PRESENTATIONS

- *Visual Exploration, Analysis, and Communication of Physiological Processes*, EuroVis Conference, Leipzig, Germany, June 2023. [**1st Place Dirk Bartz Prize**]
- *Visualizing Protein Residue Chemical Modifications*, Bio+MedVis Challenge at IEEE VIS, Oklahoma City, Oklahoma, October 2022. [**Best Redesign Challenge Entry**]
- *Considering Best Practices in Color Palettes for Molecular Visualizations*, Design X Bioinformatics Workshop, Virtual, September 2022.
- *Content-Driven Layout for Visualization Design*, International Symposium on Visual Information Communication and Interaction (VINCI), Chur, Switzerland, August 2022.
- *Trends & Opportunities in Visualization for Physiology: A Multiscale Overview*, EuroVis Conference (STAR track), Rome, Italy, June 2022.
- *An Exploration of Practice and Preferences for the Visual Communication of Biomedical Processes*, EuroGraphics Workshop on Visual Computing for Biology and Medicine, Paris, France, August 2021. [**Honorable mention Best Full Paper**]
- *DimLift: Interactive Hierarchical Data Exploration through Dimensional Bundling*, IEEE VIS Conference, Virtual, October 2021.
- *SpectraMosaic: An Exploratory Tool for the Interactive Visual Analysis of Magnetic Resonance Spectroscopy Data*, EuroGraphics Workshop on Visual Computing for Biology and Medicine, Brno, Czech Republic, September 2019.
- *A Visual Encoding System for Comparative Exploration of Magnetic Resonance Spectroscopy Data*, EuroVis Conference, Porto, Portugal, June 2019. [**Best Poster Award**]

INVITED TALKS

External

- *Exploring engagement and empowerment through visualization for medicine and public health*. Department of Informatics of the University of Zurich 2024 Spring Colloquium. [upcoming April 2024].
- *Crash Course in Creating Biomedical Graphics*. Bio+Med+Vis Summer School co-located with EG Workshop on Visual Computing in Biology and Medicine (VCBM). Norrköping, Sweden, September 2023.

- *Evolving Aesthetics in Biomolecular Graphics*. MolVA Workshop EuroVis Conference, Leipzig, Germany, June 2023.
- Approaches in Narrative Medical Visualization, TU Wien, May 2023.
- *Visual Exploration, Analysis, and Communication of Physiology from Molecules to the Masses*. Linköping University, Norrköping, Sweden, November 2022.
- *Designing Accessible Visualizations*. Bouvet One, Bergen, Norway, November 2021.
- Visualization and Communication. Bio+Med+Vis Spring School, Digital School, May 2021.
- *An Exploratory Tool for the Interactive Visual Analysis of Magnetic Resonance Spectroscopy Data*. Department of Neurology, Otto-von-Guericke University, Magdeburg, Germany, August 2019.

Internal (UiB/affiliated)

- *Exploring engagement and empathy in data-driven (bio)medical stories*, Innovative Human-Computer Interaction (HCI): Eight Ways to Advance Interactive Technology, Bergen, Norway, October 2023.
- *Share Your Science: Visualization for Communication*. Autumn Research School in Artificial Intelligence Methods in Medical Imaging 2023, Sommarøy, Norway, September 2023.
- *Data Visualization Basics*, R Ladies Meetup, Bergen, Norway, April 2023.
- *Gynecological Cancer Imaging: A Medical Illustration Case Study*, Bergen Gynecological Cancer Imaging Research Group Retreat, Voss, Norway, March 2023.
- *Accessibility in Data Visualization*, University of Bergen Digital Library Lab, Bergen, Norway. November 2022.
- *A Visual Data Science Primer*, Center for Data Science (CEDAS) Networking Event, Bergen, Norway. August 2022.
- *Hierarchical Visual Exploration of Clinical Cohort Data*, Mohn Medical Imaging and Visualization Centre (MMIV) Conference 2020, Bergen, Norway, December 2020.
- *Visual Data Science for Medicine*, Mohn Medical Imaging and Visualization Centre (MMIV) Seminar Series, Bergen, Norway, February 2020.
- *Visual Imaging Biomarker Discovery for Neuroscience*, Mohn Medical Imaging and Visualization Centre (MMIV) Conference 2019, Bergen, Norway, December 2019.
- *SpectraMosaic: An Exploratory Tool for the Interactive Visual Analysis of Magnetic Resonance Spectroscopy Data*, ICT Research School, University of Bergen, Norway, November 2019.
- *The BioDigital Human*, Visual Computing Forum, Institute for Informatics, University of Bergen, Norway, December 2018.

CONFERENCE & JOURNAL REVIEWING

- EG PacificVis Conference External Reviewer, 2023–present.
- ACM CHI Conference External Reviewer, 2022–present.
- IEEE VIS Conference External Reviewer, 2020–present.
- EG EuroVis Conference External Reviewer, 2021–present.
- ChinaVis Conference External Reviewer, 2021. [**Outstanding Reviewer Award**] (awarded to 10 out of 233 reviewers).

SERVICE

- **VCBM Short Papers co-chair**, Visual Computing for Biology and Medicine (VCBM) Workshop 2024.
- **IEEE VIS Open Practices Committee**. 2023–present.
- **Association of Medication Illustrators (AMI) Scholarship Committee Co-Chair**, Association of Medical Illustrators, 2022–2023.
- **Censor for PhD Self-Selected Topics Lectures**, UiB ICT Research School. Flåm, Norway. October 2023.
- **VCBM Poster co-chair**, Visual Computing for Biology and Medicine (VCBM) Workshop 2023.
- **Posters International Program Committee Member**, EuroVis 2023.
- **Short Papers International Program Committee Member**, EuroVis 2023, 2024.
- **Jury**, MMIV-PRESIMAL Image Contest, Mohn Medical Imaging and Visualization Centre Conference 2022, Bergen, Norway, December 2022.

- **Member**, Reducing Barriers to Understanding COVID-19 Data Working Group, 2022—present.
- **Co-organizer**, MMIV Seminar Committee, Mohn Medical Imaging and Visualization Centre, 2021—present.
- **Judge and co-organizer**, Vesalius Trust Student Symposium, Association of Medical Illustrators/Vesalius Trust for Visual Communication in the Health Sciences, 2018 — 2022.
- **Board member**, Vesalius Trust Board of Directors, Vesalius Trust for Visual Communication in the Health Sciences, 2017—2023.
- **ICT PhD Forum co-chair**, Institute for Informatics, University of Bergen, Norway, 2021—22.
- **President**, Student Association of Medical Illustrators, University of Illinois at Chicago. 2011—12.

COLLABORATORS

- **Bernhard Preim**, Professor, Simulation & Graphics Group, Otto von-Guericke University, Magdeburg, Germany.
I was a Guest Researcher (digital) to the group in November 2021.
- **Steffen Oeltze-Jafra**, Professor for Medical Information Systems at the Peter L. Reichertz Institute (PLRI), Hannover Medical School (MHH), Hannover, Germany.
I was a Guest Researcher to the group in July 2019 when Steffen was Medicine & Digitalization group leader, Dept. of Neurology, Otto von-Guericke University, Magdeburg, Germany.
- **Eli Renate Grüner**, Director of Research, Haukeland University Hospital, Associate Professor, Spectroscopy methods research group, Institute for Physics & Technology, University of Bergen.
I am a member of the group since 2018.
- **David Goodsell**, Associate Professor, Department of Integrative Structural and Computational Biology, The Scripps Research Institute, La Jolla, CA 92037, USA.
- **Jennifer Fairman**, Associate Professor of Art as Applied to Medicine, Johns Hopkins University, Principle Artist at Fairman Studios, Baltimore, Maryland, USA.

PROFESSIONAL MEMBERSHIPS

- Member, IEEE. 2018—present.
- Member, Eurographics Association. 2018—present.

LANGUAGE PROFICIENCY

- **English** - native
- **Norwegian** (bokmål and nynorsk) - working proficiency

CITIZENSHIP

- American
- Norwegian permanent resident