# David A. Reimann

Born in Sioux Falls, South Dakota, USA, 1963.
Lives and works in Albion, Michigan, USA.

## Education

1998        PhD in Computer Science, Wayne State University, Detroit, Michigan.

1990        MA in Mathematics, Wayne State University, Detroit, Michigan.

1986        BS in Mathematics, The University of Toledo, Toledo, Ohio.

## Awards

2022        "Best photograph, painting, or print", American Mathematical Society JMM [Joint Mathematical Meetings] Mathematical Art Exhibition Award.

## Solo Exhibitions

2016        "Mathematics as Muse", Ella Sharp Museum. Jackson, Michigan, USA.

## Group Exhibitions

2023        "Mathematical Art Exhibition", Joint Mathematical Meetings. Boston, Massachusetts, USA.

2022        "Exhibition of Mathematical Art", Bridges Conference. Espoo, Finland.

2022        "Mathematical Art Exhibition", Joint Mathematical Meetings. Online.

2021        "Exhibition of Mathematical Art", Bridges Conference. Online.

2020        "Exhibition of Mathematical Art", Bridges Conference. Online.

2020        "Mathematical Art Exhibition", Joint Mathematical Meetings. Denver, Colorado, USA.

2019        "Mathematical Art Exhibition", Joint Mathematical Meetings. Baltimore, Maryland, USA.

2019        "Exhibition of Mathematical Art", Bridges Conference. Linz, Austria.

2018        "Exhibition of Mathematical Art", Bridges Conference. Stockholm, Sweden.

2018        "Mathematical Art Exhibition", Joint Mathematical Meetings. San Diego, California, USA.

2017        "Exhibition of Mathematical Art", Bridges Conference. Waterloo, Ontario, Canada.

2017        "Mathematical Art Exhibition", Joint Mathematical Meetings. Atlanta, Georgia, USA.

2016        "Exhibition of Mathematical Art", Bridges Conference. Jyväskylä, Finland.

2016        "Mathematical Art Exhibition", Joint Mathematical Meetings. Seattle, Washington, USA.

2015        "Exhibition of Mathematical Art", Bridges Conference. Baltimore, Maryland, USA.

2015        "Mathematical Art Exhibition", Joint Mathematical Meetings. San Antonio, Texas, USA.

2015        "In the Realm of Forms", Ohio State University Mansfield. Mansfield, Ohio, USA.

2014        "Exhibition of Mathematical Art", Bridges Conference. Seoul, Korea.

2014        "Mathematical Art Exhibition", Joint Mathematical Meetings. Baltimore, Maryland, USA.

2013        "Exhibition of Mathematical Art", Bridges Conference. Enschede, the Netherlands.

2013        "Mathematical Art Exhibition", Joint Mathematical Meetings. San Diego, California, USA.

2012        "Exhibition of Mathematical Art", Bridges Conference. Towson, Maryland, USA.

## Commissions

2015–2019   Cover Art, *Mathematics Magazine*, published 5 times per year (25 artworks).

2017        "Synergy Squared" Funded by the Special Interest Group on Mathematics and theArts (SIGMAA-ARTS). Constructed at the 2017 Joint Mathematical Meetings. Donated to the STEM Discovery Center at Piedmont College, Demorest, Georgia.

## Press

2023    American Mathematical Society, "2023 Calendar of Mathematical Imagery"

2019    Elizabeth Whiteley, "The 2019 Joint Mathematics Meetings Exhibition of Mathematical Art", *Journal of Mathematics and the Arts*, 13:4, 383–394. DOI: 10.1080/17513472.2019.1601380

2018    Douglas Dunham, "The Bridges 2018 mathematical art exhibitions", *Journal of Mathematics and the Arts*, 13:4, 383–394. DOI: 10.1080/17513472.2019.1654330x

2018    Karl Kattchee, "The Bridges 2018 mathematical art exhibitions", *Journal of Mathematics and the Arts*, 12:1, 34-43, 2018. DOI: 10.1080/17513472.2017.1394089

2015    Siobahn Roberts, "Cogito, Ergo Summer". *The New Yorker*. 27 August 2015.
        `https://www.newyorker.com/tech/annals-of-technology/cogito-ergo-summer-the-beauty-of-summer-science`

2015    "Pearl Conard Art Gallery presents In the Realm of Forms exhibition", Richland Source, 8 November 2015.

2015    Alex Bellos and Tash Reith-Banks, "Bridges 2015: a meeting of maths and art — in pictures" Alex Bellos's Adventures in Numberland, *The Guardian*, 30 Jul 2015.

2015    Susan Happersett, "Bridges Math Art Conference Seoul – Part 2", fibonaccisusan (Blog post). 28 August 2014.

2013    Michelle Mueller, "David Reimann dives into the symmetrical — and sometimes, asymmetrical — world of Math Art", *Albion Recorder*, 2 May 2013.

## Professional Contributions

2022    Program Chair, Bridges 2022 Conference, Aalto University, Helsinki and Espoo, Finland.

2018    Curator (with Joshua Holden), Mathematical Ert Exhibition, Trisection Meeting of the Indiana, Illinois, and Michigan Sections of the MAA, Valparaiso University Valparaiso, Indiana, USA.

## Publications

2022    *Bridges 2022 Conference Proceedings*, David A. Reimann, Douglas Norton, and Eve Torrence editors.

2022    David A. Reimann. "Artistic depiction of numbers defined by sets.", In David Reimann, Douglas Norton, and Eve Torrence, editors, *Proceedings of Bridges 2022: Mathematics, Art, Music, Architecture, Culture*, pages 399–402, 2022.

2021    David A. Reimann. "Lifelines: A series of artworks that invite contemplation on the human condition.", In David Swart, Frank Farris, and Eve Torrence, editors, *Proceedings of Bridges 2021: Mathematics, Art, Music, Architecture, Education, Culture*, pages 305–308, 2021.

2020    David A. Reimann. "Reciprocal polyhedral forms using strip pairs.", In Carolyn Yackel, Robert Bosch, Eve Torrence, and Kristóf Fenyvesi, editors, *Proceedings of Bridges 2020: Mathematics, Art, Music, Architecture, Education, Culture*, pages 431–434, Bridges 2020 Conference Proceedings, 2020.

2019    David A. Reimann. "Symmetry patterns from multiple identically patterned cubes.", In Susan Goldstine, Douglas McKenna, and Kristóf Fenyvesi, editors, *Proceedings of Bridges 2019: Mathematics, Art, Music, Architecture, Education, Culture*, pages 431–432, 2019.

2018    David A. Reimann. "Visualizing symmetry subgroup structures using simple motifs.", In Eve Torrence, Bruce Torrence, Carlo Séquin, and Kristóf Fenyvesi, editors, *Proceedings of Bridges 2018: Mathematics, Art, Music, Architecture, Education, Culture*, pages 363–366, Bridges Conference, Stockholm, Sweden, 25–29 July, 2018.

2017    Amy L. Reimann and David A. Reimann. "Chris K. Palmer: Origami in action.", *Mathematics Magazine*, 90(5):380–382, December 2017.

2017    David A. Reimann. "Transforming squares to strips in expanded polyhedral forms.", In David Swart, Carlo Séquin, Kristóf Fenyvesi, and Craig S. Kaplan, editors, *Bridges: Mathematics, Art, Music, Architecture, Education, Culture*, pages 435–438, Bridges Conference, Waterloo, Ontario, Canada, 27–31 July, 2017.

2016    Amy L. Reimann and David A. Reimann. "Anne Burns: Mathematical botanist.", *Mathematics Magazine*, 89(5):375–377, December 2016.

2016    Amy L. Reimann and David A. Reimann. "Dick Termes: Art of the sphere.", *Mathematics Magazine*, 89(4):290–292, October 2016.

2016    David A. Reimann. "Snub polyhedral forms constructed from flexible 60-120 degree rhombic tiles.", In Eve Torrence, Bruce Torrence, Carlo Séquin, Douglas McKenna, Kristóf Fenyvesi, and Reza Sarhangi, editors, *Bridges: Mathematics, Music, Art, Architecture, Culture*, pages 443–444, Bridges Conference, Jyväskylä, Finland, 9–13 August, 2016.

2016    Amy L. Reimann and David A. Reimann. "Robert Fathauer: Polymath purveyor.", *Mathematics Magazine*, 89(3):220–222, June 2016.

2016    Amy L. Reimann and David A. Reimann. "Bjarne Jespersen: The magic woodcarver.", *Mathematics Magazine*, 89(1):55–57, February 2016.

2015    Amy L. Reimann and David A. Reimann. "George Hart: Troubadour for geometry.", *Mathematics Magazine*, 88(5):374–6, December 2015.

2015    David A. Reimann. "Nonplanar expansions of polyhedral edges in Platonic and Archimedean solids.", In Kelly Delp, Craig S. Kaplan, Douglas McKenna, and Reza Sarhangi, editors, *Bridges Baltimore: Mathematics, Music, Art, Architecture, Culture*, pages 143–150, Bridges Conference, Baltimore, Maryland, 29 July–2 August, 2015.

2014    David A. Reimann. "Art and symmetry of Scottish carved stone balls.", In Gary Greenfield, George Hart, and Reza Sarhangi, editors, *Bridges Seoul: Mathematics, Music, Art, Architecture, Culture*, pages 441–444, Bridges Conference, Seoul, Korea, 14–19 August, 2014.

2013    David A. Reimann. "Symmetric interlace patterns on polyhedra using generalized Truchet tiles.", *Symmetry: Culture and Science*, 24:185–190, 2013.

2013    David A. Reimann. "Point symmetric ribbon patterns using a hexagonal motif from M.C. Escher.", In George Hart and Reza Sarhangi, editors, *Bridges Enschede: Mathematics, Music, Art, Architecture, Culture*, pages 531–534, Bridges Conference, Enschede, The Netherlands, 27–31 July, 2013.

2013    David A. Reimann. "Symmetric interlace patterns on regular octahedra.", In *Hyperseeing*, pages 61–66, Shape Modeling International, Bournemouth, UK, 10–12 July 2013.

2012    David A. Reimann. "Point symmetry patterns on a regular hexagonal tessellation.", In Robert Bosch, Douglas McKenna, and Reza Sarhangi, editors, *Bridges Towson 2012: Mathematics, Music, Art, Architecture, Culture*, pages 365–368, Towson, Maryland, 25–29 July 2012.

2012    David A. Reimann. "Modular construction of knots.", In *Hyperseeing*, pages 63–69, The International Society of the Arts, Mathematics, and Architecture, ISAMA '12, Chigago, Illinois, USA, 18–22 June 2012.

2011    David A. Reimann. "Decorating regular tiles with arcs.", In Reza Sarhangi and Carlo Sequin, editors, *Bridges Coimbra: Mathematics, Music, Art, Architecture, Culture*, pages 581–584, Coimbra, Portugal, 27–31 July 2011.

2011    David A. Reimann. "Tessellation patterns from a simply decorated triangle.", In *Hyperseeing*, pages 127–130, The International Society of the Arts, Mathematics, and Architecture, ISAMA '11, Chigago, Illinois, USA, 13–17 June 2011.

2010    David A. Reimann. "Patterns from Archimedean tilings using generalized Truchet tiles decorated with simple Bézier curves.", In George W. Hart and Reza Sarhangi, editors, *Bridges Pécs: Mathematics, Music, Art, Culture*, pages 427–430, Pécs, Hungary, 24–28 July 2010.

2009    David A. Reimann. "Text from Truchet tiles.", In Craig S. Kaplan and Reza Sarhangi, editors, *Bridges Banff: Mathematics, Art, Architecture, Culture*, pages 325–326, Banff, Alberta, Canada, 26–29 July 2009.

## Conference Presentations

2023    David A. Reimann. "Connections between Truchet tiling and hitomezashi patterns.", Joint Mathematics Meetings, Boston, Massachusetts, 4–7 January. Abstract 21336.

2022    David A. Reimann. "Visual representations of natural numbers using geometric patterns.", 2022 Virtual Joint Mathematics Meetings. Abstract 7234.

2021    David A. Reimann. "Art from Langford sequences.", MAA MathFest, Virtual, 4–7 August.

2020    David A. Reimann. "A retrospective of creating five years of cover art for Mathematics Magazine.", Joint Mathematics Meetings, Denver, Colorado, 15–18 January. Abstract 1154-K1-2743.

2019    David A. Reimann. "Simultaneously visualizing symmetry subgroups.", Joint Mathematics Meetings, Baltimore, Maryland, 16–19 January. Abstract 1145-D1-2989.

2018    David A. Reimann and Antoniu Fodor. "Panoramic photographic polyhedral pavilions.", Joint Mathematics Meetings, San Diego, California, 10–13 January. 2018. Abstract 1135-F1-3101.

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| 2017 | David A. Reimann and Liliya Chernysheva. "Sheets, tubes, and capsules constructed from corner connected rectangles.", Joint Mathematics Meetings, Atlanta, Georgia, 4–7 January. |
| 2016 | David A. Reimann. "Forms resulting from replacing edges with flexible plates in convex equilateral polyhedra.", Joint Mathematics Meetings, Seattle, Washington, 6–9 January. |
| 2015 | David A. Reimann. "Halftoning images using solid convex and nonconvex dodecagons on a hexagonal tessellation.", Joint Mathematics Meetings, San Antonio, Texas, 10–13 January. |
| 2014 | David A. Reimann. "Relationships between Scottish carved stone balls and Platonic solids.", Annual Meeting of the Michigan Section of the Mathematical Association of America, Flint, Michigan, 2–3 May. |
| 2014 | David A. Reimann. "Symmetries of generalized Truchet tiles.", Joint Mathematics Meetings, Balitmore, Maryland, 15–18 January. |
| 2013 | David A. Reimann. "Symmetric interlace patterns on polyhedra using generalized Truchet tiles.", Symmetry Festival 2013, Delft, Netherlands. |
| 2013 | David A. Reimann. "Point symmetry patterns on 1-uniform tessellations.", Joint Mathematics Meetings, San Diego, California, 9–12 January. |
| 2012 | David A. Reimann. "Modular construction of knot and link patterns from simple tangles on $k$-uniform tessellations.", Joint Mathematics Meetings, Boston, Massachusetts, 4–7 January. |
| 2010 | David A. Reimann. "Exploring regular and decorated tessellations.", European Society for Mathematics and Art Conference, Paris, France, 19–22 July. |

## Talks and Activities

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| 2023 | David A. Reimann. "Polygons and polyhedra.", STEM Saturdays K–12 Activity, INNOVATE Albion, Albion, Michigan. 21 January 2023. |
| 2023 | David A. Reimann. "Truchet cubes.", Pi Mu Epsilon Undergraduate Mathematics Reception Activity, Joint Mathematics Meetings, Boston, Massachusetts. 6 January 2023. |
| 2022 | David A. Reimann. "Soccer-ball symmetries: Exploring symmetric patterns on spheres.", Alma College Mathematics Colloquium. 2 November 2022. |
| 2022 | David A. Reimann. "A travelogue of the mathematical universe.", Albion College Faculty Lecture. 13 October 2022. |
| 2022 | David A. Reimann. "Soccer-Ball Symmetries: Exploring Symmetric Patterns on Spheres.", Albion College Mathematics and Computer Science Colloquium. 29 September 2022. |
| 2022 | David A. Reimann. "Family day sculpture build: *Rudbeckia Ball*.", Bridges Conference, Helsinki, Finland, 1–5 August. 2022. |
| 2022 | David A. Reimann. "Play truchet: fun with tiling patterns and generalizations.", Math Encounters, National Museum of Mathematics. 11 May 2022. |
| 2021 | David A. Reimann. "Geometric constructions.", NYC Math Festival, National Museum of Mathematics. 14 August 2021. |
| 2021 | David A. Reimann. "Visual Representations of Natural Numbers using Geometric Patterns.", Albion College Mathematics and Computer Science Colloquium. 16 September 2021. |
| 2021 | David A. Reimann. "Fun with figurate numbers.", On-line NYC Math Festival, National Museum of Mathematics. 17 July 2021. |
| 2019 | David A. Reimann. "A Travelogue of the Mathematical Universe.", Albion College Mathematics and Computer Science Colloquium. 12 September 2019. |
| 2020 | David A. Reimann. "Breathing room.", Charge from the Faculty, Matriculation Ceremony, Albion College. 21 August 2020. |
| 2020 | David A. Reimann. "Symmetry Groups: The mathematical connection between patterns in Moorish architecture and the artwork of M.C. Escher.", Albion College Mathematics and Computer Science Colloquium. 13 February 2020. |
| 2019 | David A. Reimann. "Sculpture build: *Fireball*.", Hope College Mathematics Department. 5 February 2019. |
| 2019 | David A. Reimann. "Symmetry: A mathematical approach using group theory and linear algebra.", Hope College Mathematics Colloquium. 5 February 2019. |

2018    David A. Reimann. "Mathematical art.", Heritage Commons Lunch and Learn, Marshall, Michigan. 11 October 2018.

2018    David A. Reimann. "Spherical panoramic photographic processing.", Albion College Mathematics and Computer Science Colloquium. 11 October 2018.

2018    David A. Reimann. "Sculpture build: *Goldberg Variation*.", MoMath NYC Math Festival, New York City, 18 August. 2018.

2018    David A. Reimann. "The art of symmetry.", Family Fridays, National Museum of Mathematics (MoMath), New York City, 17 August. 2018.

2018    David A. Reimann. "Family day sculpture build: *Fire Pyre*.", Bridges Conference, Stockholm, Sweden, 25–29 July. 2018.

2018    David A. Reimann. "Sculpture build: *Trisection Tribute*.", Mathematical Art Exhibition, Trisection Meeting of the Indiana, Illinois, and Michigan Sections of the MAA, Valparaiso University, Valparaiso, Indiana. 23–24 March 2018.

2017    David A. Reimann. "Symmetry: A mathematical approach using group theory and linear algebra.", 19 October 2017.

2017    David A. Reimann. "Mathematics in art, art in mathematics.", Eastern Michigan University, Ypsilanti. 11 March 2017. Keynote Address, Michigan Mathematics Prize Competition Awards Banquet.

2017    David A. Reimann. "Fourth annual sculpture build.", Joint Mathematics Meetings, Atlanta, Georgia, 4–7 January. 2017.

2016    David A. Reimann. "Creating Escher-like tessellations.", Albion College Mathematics and Computer Science Colloquium. 8 September 2016.

2016    David A. Reimann. "Family day sculpture build.", Bridges Conference, Jyväskylä, Finland, 9–13 August. 2016.

2016    David A. Reimann. "Building with squares.", MoSAIC Festival, University of Colorado - Boulder. 2 April 2016. Workshop.

2016    David A. Reimann. "Creating Escher-like tessellations.", MoSAIC Festival, University of Colorado - Boulder. 2 April 2016. Workshop.

2016    David A. Reimann. "Mathematics in the art of M.C. Escher.", MoSAIC Festival, University of Colorado - Boulder. 1 April 2016. Workshop.

2016    David A. Reimann. "Forms resulting from replacing edges with flexible plates in convex equilateral polyhedra.", Albion College Mathematics and Computer Science Colloquium. 4 February 2016.

2015    David A. Reimann. "Creating Escher-like tessellations.", MoSAIC Festival, MIT Museum, Cambridge, Massachusetts. 11–12 December 2015. Workshop.

2015    David A. Reimann. "Mathematics in the art of M.C. Escher.", MoSAIC Festival, MIT Museum, Cambridge, Massachusetts. 11–12 December 2015.

2015    David A. Reimann. "Creating Escher-like tessellations.", MoSAIC Festival, University of Nebraska - Lincoln. 14–15 November 2015. Workshop.

2015    David A. Reimann. "Mathematics in the art of M.C. Escher.", MoSAIC Festival, University of Nebraska - Lincoln. 14–15 November 2015.

2015    David A. Reimann. "Soccer-ball symmetries: Exploring symmetric patterns on spheres.", Hillsdale College Mathematics and Computer Science Colloquium. 29 October 2015.

2015    David A. Reimann. "Mathematical building with squares: A hands-on mathematical art sculture construction.", Ella Sharp Museum, Jackson, Michigan. June 25 and July 2 2015.

2015    David A. Reimann. "Mathematical art of the MoSAIC exhibition.", Ella Sharp Museum, Jackson, Michigan. 11 June 2015. Gallery Talk.

2015    David A. Reimann. "Symmetry groups: The mathematical connection between patterns in Moorish architecture and the artwork of M.C. Escher.", Dominican University, River Forest, Illinois. 12 April 2015. Guest Speaker, KME Induction Ceremony.

2014    David A. Reimann. "Symmetry groups: The mathematical connection between patterns in Moorish architecture and the artwork of M.C. Escher.", Hope College Mathematics Colloquium. 2 December 2014.

2014   David A. Reimann. "Relationships between Platonic solids and Scottish carved stone balls.", Albion College Mathematics and Computer Science Colloquium. 25 September 2014.

2014   David A. Reimann. "The art of teaching without teaching.", Albion College Teaching Symposium. 12 April 2014.

2014   David A. Reimann. "Principles of x-ray computed tomography.", Andrews University, Pi Mu Epsilon Lecture, jointly sponsored by Mathematics, Physics, and Engineering. 28 March 2014.

2013   David A. Reimann. "Symmetry groups: The mathematical connection between patterns in Moorish architecture and the artwork of M.C. Escher.", Alma College Mathematics Colloquium. 7 October 2013.

2013   David A. Reimann. "Symmetries on spheres.", Albion College Mathematics and Computer Science Colloquium. 12 September 2013.

2013   David A. Reimann. "Principles of x-ray computed tomography.", Albion College, Physics Department Colloquium. 5 April 2013.

2013   David A. Reimann. "Symmetry groups: The mathematical connection between patterns in Moorish architecture and the artwork of M.C. Escher.", Andrews University, Pi Mu Epsilon Lecture, jointly sponsored by Mathematics, Physics, and the School of Architecture, Art and Design. 29 March 2013.

2013   David A. Reimann. "Symmetry groups: The mathematical connection between patterns in Moorish architecture and the artwork of M.C. Escher.", Kalamazoo College, Mathematics and Computer Science Department Colloquium. 6 March 2013.

2012   David A. Reimann. "Symmetry groups: The mathematical connection between patterns in Moorish architecture and the artwork of M.C. Escher.", University of Detroit Mercy Mathematics and Computer Science Colloquium. 27 November 2012.

2012   David A. Reimann. "Tessellations and symmetries of the plane.", Albion College Mathematics and Computer Science Colloquium. 27 September 2012.

2012   David A. Reimann. "Symmetry groups: The mathematical connection between patterns in Moorish architecture and the artwork of M.C. Escher.", Hillsdale College Mathematics and Computer Science Colloquium. 11 April 2012.

2012   David A. Reimann. "Exploring mathematical themes in M. C. Escher's artwork.", Albion College ARTH 216: Modern and Contemporary Art. 5 April 2012. Guest Lecturer.

2011   David A. Reimann. "Finding symmetry: mathematical connections between Moorish architecture and the artwork of M.C. Escher.", Albion College Faculty Lecture. 9 September 2011.