

BRIDGES LINZ 2019

The interdisciplinary conference on art and mathematics. For more information please visit bridgesmathart.org

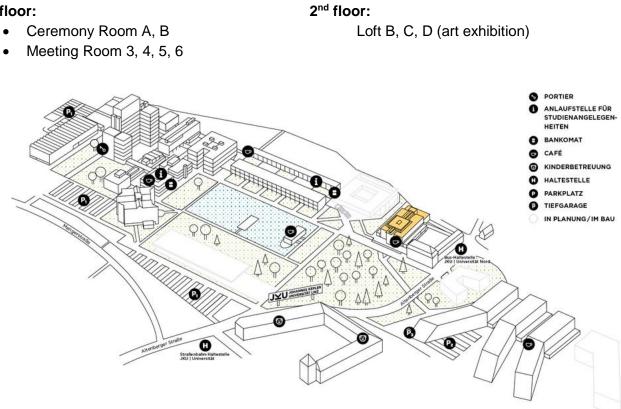




1. Maps

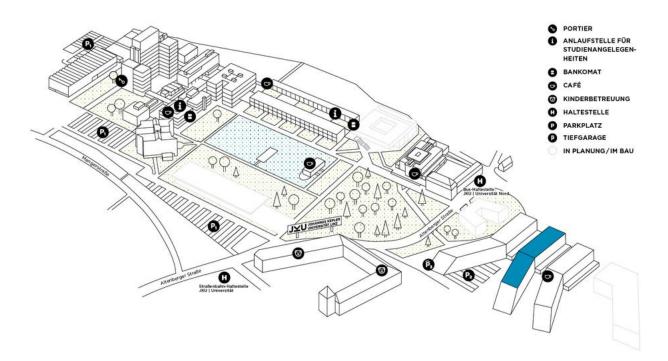
JKU: Uni Center

1st floor:



JKU: Science Park II (S2)

Rooms: S2 044, S2 046, S2 048, S2 059



2. Bridges Linz 2019

The goal of the Bridges Organization is to foster research, practice, and new interest in mathematical connections to art, music, architecture, education and culture. Since 1998, Bridges has traveled to North America, Europe, and Asia, and has attracted participants from over thirty countries. The 2019 conference will feature paper presentations, hands-on workshops, a visual art exhibition, a Family Day, and arts-related performance events.

Bridges 2019 is hosted by Johannes Kepler University and Ars Electronica Center in Linz!

3. Linz

Linz is the capital of Upper Austria. The Danube, Europe's longest river, flows through the center of Linz. The main street, called Landstraße, and the main square are known for the Dreifaltigkeitssäule (Holy Trinity Column) and many historically relevant and architecturally interesting houses. Some other points of interest in Linz are the St. Mary's Cathedral, which is the tallest church in Austria, the Pöstlingberg hill with its pilgrimage church, the steepest mountain rail in the world and the grotto railway on top of the hill and the Brucknerhaus, a concert and congress house named after the composer Anton Bruckner. Other popular attractions are the Ars Electronica Center, the Lentos Art Museum, the Tobacco Factory and the port of Linz including Mural Harbor.

The capital of Upper Austria is hosting a lot of students because of its universities and colleges: Johannes Kepler University, University of Art and Design, Anton Bruckner Private University, Catholic Private University, Universities of Applied Science and Educational colleges.

4. Johannes Kepler University Linz

The Johannes Kepler University Linz (short: JKU) was established in 1966. It has four faculties and three schools: Faculty of Social Sciences, Economics & Business, Faculty of Law, Faculty of Engineering & Natural Sciences, Faculty of Medicine, Linz Institute of Technology, Linz School of Education, Business School. The JKU is a campus university and has approximately 20.000 students and about 130 professors at 127 institutes.

STEAM Education in Linz

There is a growing emphasis for encouraging creative thinking in mathematics education and needs to develop connections of mathematics with other subjects. Activities focusing on the creative process, rather than concentrating on achieving only results for posed problems, are being designed and trialled by innovative groups around the world. Often involving Arts, in a broader sense of design and creation, can be good a starting point for students to find their own interests and follow their own way of learning. Such creative activities often involve the development of collaborative problem-solving skills utilising students' strengths in different areas that adds up at the group level. Furthermore, such activity designs and the opportunities offered by the availability of digital technologies inevitably afford new multi- and trans-disciplinary approaches for education. In Linz, at Johannes Kepler University (JKU), GeoGebra, Arts University and Ars Electronica Centre, we introduce ideas and examples for mathematics teaching involving STEM to STE-A-M transitions. Our teams are involved in research, mainly in our STEAM Education doctoral programme at JKU with more than 25 PhD students; develop new technologies for mathematics teaching, the main development centre for GeoGebra is in Linz; engage, exhibit, and develop arts- and technology-related projects at Arts University and Ars Electronica Centre.

5. Conference Schedule

Monday July 15, 2019

2:00pm – 6:00pm

Registration

Uni Center, 1st floor

		Tu	iesday July 16, 2019			
8:30am -	- 5:00pm	Registrat	tion	Uni Center, 1 st floor		
9:00am – 9:30am Team			nz: Markus Hohenwarter, Ar	ndreas Bauer, Zsolt Lavicza,		
		Barbara	Barbara Lichtenegger, Sandra Reichenberger			
		Opening	Opening Session Ceremony A			
9:30am -	- 10:30am		Reza Sarhangi Memorial Lecture: Allan McRobie			
			uction of Curves	Ceremony A+B		
	– 11:00am	Coffee b		Uni Center		
11:00am	- 12:00		an Deventer			
		That is N	lot Art, It Is a Puzzle!	Ceremony A+B		
12:00 – 1	l:00pm	Art Exhit	bition Opening	Uni Center, 2 nd floor		
12:00am	– 2:00pm	Lunch br	eak			
2:00pm -	– 3:30pm	Regular	Paper Session 1, 2, 3			
Room	Ceremony A+B		Meeting Room 3	Meeting Room 6		
	Uyen Nguyen, B	en	Jeffrey Ventrella	Carlo H. Séquin		
	Fritzon, Marcus I	Michelen				
2:00	Folding Functions:		Portraits from the Family	From Seifert Surfaces to Star		
	Origami Corrugations from		Tree of Plane-filling	Cinders		
	Equations		Curves			
	Rinus Roelofs		Joerg Arndt, Julia Handl	María Antonieta Emparan		
2:30	Helixations		Puzzling plane-filling	The Planar Crystallography		
2100			curves	Groups as an Iconographic		
				Analysis Tool in Islamic Art		
	George Hart (Ch	air)	Tom Bates (Chair)	Roger Burrows (Chair)		
3:00	Max Brückner's		A Generalization of the	Reconstructions Early Islamic		
	Wunderkammer of Paper		Chaos Game	Geometries of Space Applied to		
	Polyhedra			Surface Designs		
2:00pm -	– 3:30pm	Sort Pap	per Session 1	S2 048		
2:00			Sombra del Río, Mónica Es ough the Lens of a Camera	ster Manceñido		
2:15	Mehtap Kuş, Erd Eliciting Students		giu patial Thinking Processes in	an Art Studio		
2.20	Kit Lee, Rachel L	.im, Oi Mei	Тео			
2:30	Perception of Stu	dents in an Arts-Integrated Mathematics Performance Task				

2:45	Jeanette McLeod, Phillip Wil	son, David Poi	meroy, Erik Brogt		
	Maths Craft in Class Sara Hinterplattner, Barbara	Sabitzer, Jako	b Skoaø		
3:00	•	•			
3:15	Anna Maria Hartkopf (Chair) Citizen Art—Collective Mathematical Art to Raise the Public Awareness of Mathematics				
2:00pm -	- 3:30pm Worksho	ps 1, 2			
Room	S2 044		S2 059		
2:00 – 3:30	<i>Emily Grosholz, Sarah Glaz</i> How to Use Prime Numbers Periodicity to Write a Poem	and	Lali Barrière Exploring Randomness in Digital Art Bring your own device with a free-access software, "Processing" installed from https://processing.org/download/		
3:30pm –	- 4:00pm Coffee bre	eak	Uni Center / Science Park 2		
4:00pm -	- 5:30pm Regular F	Paper Session	4, 5		
Room	Ceremony A+B		Meeting Room 3		
4:00	Loe Feijs, Marina Toeters Exploring a Taxicab-based M like Set	landelbrot-	Samuel Milner, Carolina Duque, Susan Gerofsky Dancing Euclidean Proofs: Experiments and Observations in Embodied Mathematics Learning and Choreography		
4:30	Bernat Espigule A Family of Fern-like Comple	ex Trees	<i>Karl Schaffer (Chair)</i> Three-Dimensional Symmetries in Dance and Other Movement		
5:00	Gary Greenfield (Chair) Generative Art from One-Din Chip-Firing Automata	nensional			
4:00pm -	- 5:15pm Short Paj	per Session 2	, 3		
Room	Meeting Room 6		S2 048		
4:00	Jiangmei Wu, Matthias Web Double-layered Weaving of I foldable Polyhedral Complex	nfinite Bi-	John Nicholson Curve Stitching Density Plots		
4:00 4:15	Jiangmei Wu, Matthias Web Double-layered Weaving of I	nfinite Bi- e f <i>f (Chair)</i> dular Building			

	Klara Mundilova		Shai Gul, D	Daniel Cohen		
4:45	Curved Crease Folds of Spherical		The Hairy Klein Bottle			
	Polyhedra with Regular Faces					
	Chirag Mehta (Chair)		Karl Kattch	ee (Chair)		
5:00	Search for a Perfect Unequa	al	Grid-Based	Circuits from de Bruijn		
	Trapezohedron with Similar	Faces	Sequences			
4:00pm -	4:00pm – 5:30pm Workshops 3, 4, 5					
Room	S2 044	S2 046		S2 059		
		02 040		52 035		
4:00 - 5:30	Annette Mauer, Melissa Silk, Lisa Giles A Synthesis of Sectors	Andrea Capoz Marco Fermal Make Music V Mathematics	ni	Marina Menna Barreto, Keri Howard Weaving Mondrian with GeoGebra		
4:00 -	Annette Mauer, Melissa Silk, Lisa Giles	Andrea Capoz Marco Fermal Make Music V	ni ′isible, Play	Marina Menna Barreto, Keri Howard Weaving Mondrian with		

		Wec	Inesday July 17, 2019		
8:30am –	5:00pm	Registrat	ion	Uni Center, 1 st floor	
9:00am – 10:00am		Helmut Pottmann			
		Discrete	and Computational Differential	Geometry	
		for Funct	ional Pattern Design	Ceremony A+B	
10:00am – 10:30am (Coffee br	eak	Uni Center	
10:30am ·	– 11:15am	Elisabetta	a Matsumoto	Ceremony A+B	
· · · ·			Fopological Tangles: Or the Kno	ot Theory of Knitting	
11:15am – 12:00			s Braumann	Ceremony A+B	
			Creative Robotics		
12:00am	– 2:00pm	Lunch bro	eak (JMA board lunch by invitat	tion)	
2:00pm –	3:30pm	Regular	Paper Session 6, 7, 8		
Room	Ceremony A+B		Meeting Room 3	Meeting Room 6	
	D. Jacob Wildstro (Chair)	om	Jordan Schettler, Mitchell Chavarria	Georg Grasegger, Jan Legerský, Josef Schicho	
2.00	Symmetries of		The Secret behind the	Animated Motions of	
2:00	Interlocking Crock	net	Squiggles: Guitars with	Exceptional Flexible	
	Designs		Optimally Curved Frets	Instances of Generically Rigid	
				Graphs	
	Douglas Dunham, Lisa		Ion Bica, Zhichun Zhai, Rui	James Mai	
	Shier		Hu, Mickey Melnyk		
2:30	Embroidery of a		Sound Signature Detection	Shape-Partitions: New	
	Hyperbolic Fish P	attern	by Probability Density	Elements, New Artworks	
			Function of Normalized		
	Abdella C. M. Ab		Amplitudes	Androw Simoson (Chair)	
	Abdalla G. M. Ahi	nea,	Nadav Drukker (Chair)	Andrew Simoson (Chair)	
3:00	<i>Eva Knoll</i> Tuti-Like Interweaving		Coromics Inspired by String	Which Flower is It?	
			Ceramics Inspired by String Theory		
2:00pm –	· 3:30pm	Sort Pap	er Session 4	S2 048	
	Hans Kuiper, Her	k Rusmar	1		
2:00	•		the Crop Fields of Fryslân		
	Doris Schattschne	eider	· · · · ·		
2:15	Escher's Polyhed	ral Models	6		
	Ellie Baker, Kevin	Lee			
2:30	Tessellated Seve	n-Color To	ori		
	Diego Lieban, Bja	rnheiður H	Kristinsdóttir, Zsolt Lavicza		
2:45	Setting a Creative	Math Tas	sk with SET 3D: Modeling Phys	ical Pieces through Digital	
	Resources				
3:00	David Reimann (0	Chair)			
5.00	Symmetry Patterns from Multiple Identically Patterned Cubes				

2:00pm -	- 3:30pm Worksho	ops 6, 7, 8		
Room	S2 044	S2 046		S2 059
2:00 – 3:30	Melissa Silk, Corey Stewart, Annette Mauer Hungry Birds – a STEAM experience	Alan Russell, William DeMichele, Nicole Holland, Caroline Lanzarone, Nettie Leepson The Organ Base in Origami: Teaching Mathematics and Creativity in the Elementary Classroom		<i>Giulia Bini, Ornella Robutti</i> Yo Math Is So Arty: Inspiring Creative Learning with Mathematical Internet Memes <i>Bring laptops or tablets!</i>
3:30pm –	4:00pm Coffee bi	reak	Uni	Center / Science Park 2
4:00pm –	- 5:30pm Regular	Paper Session 9	9, 10	
Room	Ceremony A+B		Meeting Ro	pom 3
4:00	<i>Chamberlain Fong, Douglas Dunham</i> Hyperbolization on a Squircular Continuum		Martin Flashman Mapping Diagrams and a New Visualization of Complex Functions with GeoGebra	
4:30	<i>Eryk Kopczynski, Dorota Ce Kopczyńska</i> Conformal Mappings of the Plane to Arbitrary Shapes		Matteo Torre Impossible F Education	e Pictures: When Art Helps Math
5:00	Craig Kaplan (Chair) Animated Isohedral Tilings		Dissecting a	n, Zsolt Lavicza (Chair) Cube as a Teaching Strategy easoning: Combining Physical Resources
4:00pm -	- 5:30pm Short Pa	oper Session 5, 6	5	
Room	Meeting Room 6		S2 048	
4:00	Stefanie Hittmeyer, Bernd Krauskopf, Hinke Osinga Generalized Julia Sets: From Cantor Bouquet to Cantor Cheese		Jean Francois Maheux Experiencing Mathematics through Astonishment	
4:15	Vaclav Kucera New Generalizations of Qua Sets to 3D	adratic Julia	Demian Nah Magritte Mee	nuel Goos ets Matisse Meets Mathematics
4:30	<i>Roza Aceska, Ben O'Brien</i> Artistic Excursions with the Triangle	Sierpinski	Teaching Ac	<i>linski, Zsolt Lavicza</i> Ivanced Mathematical th Origami and GeoGebra Reality

	S2 059 <i>Michael Acerra, Matias Kaukolinna, Alexey</i> <i>Ivchenko, Kristóf Fenyvesi</i> Exploring Kaleidocycles with LUX BLOX			
Jim Dine and the Austrian Geo-heart 5:30pm Workshops 9, 10	S2 059			
Jim Dine and the Austrian Geo-heart				
Richard Nau (Chair) Jim Dine and the Austrian Geo-heart				
Polyana Perosa Simulating a Scissor Lift through a Geometric Modeling Approach: Integrating Physical and Digital Resources				
Ruana Maíra Schneider Developing the Game SET for android using	JAVA by High School students			
Mingjang Chen Leaping Iteration with Two Generators for Drawings				
<i>Hossein Behforooz</i> More on the Artistic Aspects of Benjamin Fra	nklin Magic Squares			
Helena Verrill Variations on Three Intersecting Circles				
Yoshifumi Matsuda Topological Study of Sepak Takraw Ball				
<i>Ingrid Graz</i> Skin-inspired Electronics and the Art of (Im)p	erfection			
5:20pm Abstract Session	S2 044			
<i>Gregg Helt (Chair)</i> Mandelshapes: Thinking Outside the Mandelbox				
Fractal Analysis of a Sequence of LSD- Influenced Self-Portraits	Rhythm Domes — Applications of Euclid's Algorithm to Architecture			
Visually Synthesizing the Genotype- Phenotype Distinction in Cannabis Sativa	John Lind Sandpiles and Synthesizers: Listening to the Discrete Laplacian Eric Worcester (Chair)			
	Phenotype Distinction in Cannabis Sativa Debanuj Chatterjee Fractal Analysis of a Sequence of LSD- nfluenced Self-Portraits Gregg Helt (Chair) Mandelshapes: Thinking Outside the Mandelbox Scopm Abstract Session Ingrid Graz Skin-inspired Electronics and the Art of (Im)p Yoshifumi Matsuda Topological Study of Sepak Takraw Ball Helena Verrill Variations on Three Intersecting Circles Hossein Behforooz More on the Artistic Aspects of Benjamin Fra Mingjang Chen Leaping Iteration with Two Generators for Dra Ruana Maíra Schneider Developing the Game SET for android using Polyana Perosa Simulating a Scissor Lift through a Geometric			

		Thursday July 1	18, 2019	
8:30am –	5:00pm	Registration	Uni Center, 1 st floor	
9:00am –	12:00	Plenary session (Austria	n Day) Ceremony A+B	
9:00am –	9:30am	Team Linz: <i>Barbara Lichte</i> STEAM in Linz	enegger, Zsolt Lavicza, Andreas Bauer	
9:30am –	10:10am	Peter Paule		
		Kepler: A Poet Needs to b and Creativity	e a Seer - Thoughts on Mathematical Art	
10:10am	– 10:40am	Coffee break	Uni Center	
10:40am	– 11:20am	Georg Glaeser		
11:00	10:00	· · ·	illusions, and humour in mathematics	
11:20am	– 12:00am	Gerfried Stocker AI meets Art		
12:00am	– 2:00pm	Lunch break		
2:00pm –	•	Regular Paper Session 1	1, 12	
Room	Ceremony A+B		Meeting Room 3	
2:00	Peter Stampfli Fractal Images fro Circles	om Multiple Inversion in	Andreia Hall, Isabel Brás, Sónia Pais Interlacing Mathematics and Art: Hands-on Non-Euclidean Geometry	
2:30	Clayton Shonkwil Stiefel Manifolds		Jeanette McLeod, Phillip Wilson Maths Craft New Zealand: An Unexpected Journey	
3:00	Kerry Mitchell (Cl Fun with Newton'	,	<i>James Mallos (Chair)</i> Deriving Baskets	
2:00pm -	- 3:30pm	JMA Session 1	Meeting Room 6	
2:00	<i>António Bandeira</i> Ruler, compass, a	Araújo and nail: constructing a tota	l spherical perspective	
2:30		an, Lorelei Caraman oint theorem and the madel	eine moment	
3:00	<i>Patricia Bentley (</i> Star taker: art, sc	,	n astrolabe from fourteenth-century Spain	
2:00pm –	· 3:30pm	Short Paper Session 7, 8	l de la companya de l	
Room	S2 048		S2 044	
2:00	<i>Roos van Berkel,</i> Lehmer's Dance:	<i>Tom Verhoeff</i> A Lecture Performance	<i>Ioanna Symeonidou</i> The Magnified Pixel: Digitally Fabricated Prototypes at the Intersection of Art, Mathematics, and Architecture	
2:15	Daniela Bertol Mindful Geometri Inside the Icosah	es: Making and Moving edron	Sandra Reichenberger, Diego Lieban, Cecilia Russo, Barbara Lichtenegger 3D Printing to Address Solids of Revolution at School	

2:30	Valeria González Roel, Teresa F. Blanco, Raquel Valuja, José Manuel Diego Mantecón Light and Geometry: An Artistic- Mathematical Experience in Primary School	Walt van Ballegooijen, Hans Kuiper A Minimal Art Object with Six Horses in a Carousel
2:45	Jouko Koskinen, Petteri Mäkiniemi Polyhedral Music	Kate Jones The Surprising Symmetry Pairs of 24 Di- Oct Ochominoes Tiles
3:00	Srividhya Balaji Exploring Raaga Improvisations of Carnatic Music with Mathematical Proof Writing	Barbara Lichtenegger Light Painting: Visualization with and through Light
3:15	Donald Spector (Chair) Images Produced via Modular Multiplicative Inverse Filters	Elisabetta A. Matsumoto, Henry Segerman (Chair). Geared Jitterbugs
2:00pm -	- 3:30pm Workshops 11, 12	
Room	S2 046	S2 059
2:00 - 3:30	<i>Elizabeth Lugosi</i> Active Learning ArtMath Project in College Algebra Classes <i>maximum 30 participants, bring a pen or</i>	Briony Thomas, Azael Capetillo, Alejandra Díaz de León, Fabio López, Rafael Machado A Shape-based Approach to Creativity and Connection Making
	pencil	
3:30pm –	4:00pm Coffee break	Uni Center / Science Park 2
4:00pm -	- 5:30pm Regular Paper Session	13, 14
Room	Ceremony A+B	Meeting Room 3
4:00	Robert Bosch, Abagael Cheng, Ari Smith Exploring Szpakowski's Linear Ideas	<i>Iggy McGovern</i> Making A Mystic Dream of 4
4:30	<i>Erik D. Demaine, Martin L. Demaine, Tomoko Taniguchi, Ryuhei Uehara</i> Impossible Folding Font	<i>Lisa Lajeunesse</i> Graeco-Latin Square Poems
5:00	Robert Fathauer (Chair) Walkable Curves and Knots	Paul Gailiunas (Chair) Bridges and Artists
4:00pm -	- 5:00pm JMA Session 2	Meeting Room 6
4:00	<i>Menno Hubregtse</i> Concrete curves: architectural curvilinearity, Eero Saarinen's TWA terminal	Descartes' Géométrie, Leibniz's calculus and
4:30	<i>Carlo H. Séquin (Chair)</i> Möbius bridges	

4:00pm –	4:00pm – 5:30pm Short Paper Session 9, 10				
Room	Meeting Room 6	S2 044			
4:00	Jonathan Heddle, Agnieszka Kowalczyk, Bernard Piette Hendecagonal Near-miss Polyhedral Cages	Petra Surynkova Exploring Simple Geometries Using Beaded Jewelry			
4:15	<i>Liang-Chen Peng</i> Creating Deltahedra with Unfolded Net of Tetrahedron	Hedy Hempe Quest for the Golden Egg			
4:30	Ulrich Reitebuch, Martin Skrodzki, Konrad Polthier Discrete Gyroid Surface	Krystian Kazaniecki, Michał Wojciechowski Regular Whitney Coverings			
4:45	Josep Tarres, Luis Sanchez Cuenca, Manuel Moreno, Toni Vinyes Art and Math Using an Equally Linked Tetrahedron	Anna Chupa, Michael Chupa Florautomata Faunautomata			
5:00	Shen-Guan Shih, Chih-Hung Yen, Long- Wei Chou Extensible Structures of Interlinking SL Strands	Alexander Astrom, Christoffer Astrom Braids Formed by the Impression of Knots			
5:15	<i>Bih-Yaw Jin (Chair)</i> Bead-Chain Construction Set and Interlocking Puzzle Inspired by Polyhedranes	<i>Elaine Ellison (Chair)</i> The Sum of Odd Integers Quilt			
4:00pm –	- 5:30pm Workshops 13, 14				
Room	S2 046	S2 059			
4:00 – 5:30	<i>Antonio Araujo</i> A Fisheye Gyrograph: Taking Spherical Perspective for a Spin <i>maximum 20 participants</i>	Kristóf Fenyvesi, Christopher Brownell, Hannu Salmi, Ho Gul Park, Adela Muntean, Matias Kaukolinna, Helena Thuneberg, Franz Bogner, Zsolt Lavicza Environmental Problem-solving and Hands- on Geometry Learning through Storytelling inside a Geodesic Dome: Ice, Honey and Stardust			
7:30pm –					

	Friday July 1	9, 2019		
8:30am – 5:00pm	Registration		Uni Center, 1 st floor	
9:00am – 10:00	Lynn Gamwell Ceremony A+B			
	The Foundations of Mathe	ematics and Art: For	m, Logic, Intuition	
10:00am – 10:30am	John Sullivan		Ceremony A+B	
	Symmetry in Koloman Mo	oser's Flächenschmu	uck	
10:30am – 11:00am	Coffee break		Uni Center	
11:00am – 11:30am	Gabriele Meyer		Ceremony A+B	
	Yarn: Not just for Socks a	any More		
11:30am – 12:00	Announcements		Ceremony A+B	
12:00am – 2:00pm	Lunch break			
2:00pm – 6:00pm	Family Day / Poetry Rea	ding / Short Film F	estival / Theater Event /	
	Demoscene			
2:00pm – 6:00 pm	Family Day l	Jniversity of Art and	Design, SPLACE Gallery	
2:00pm – 4:00 pm	Poetry Reading	Ur	iversity of Art and Design	
2:00pm – 3:15pm	Short Film Festival (1st sc	reening)	Ars Electronica Center	
3:30pm – 4:30pm	Demoscene		Ars Electronica Center	
4:45pm – 6:15pm	Short Film Festival (2 nd so	creening)	Ars Electronica Center	
4:45pm – 6:15pm	Theater Event	Ur	niversity of Art and Design	
8:30am – 7:00pm	SPLACE Gallery	Ur	niversity of Art and Design	
8:00pm – 11:00pm	Informal Music Night at	JKU	Ceremony A+B	

Saturday July 20, 2019

EXCURSION DAY

6. Event Details

Art Exhibition

Place: Johannes Kepler University Uni-Center Loft B, C, D, 2nd floor

Opening: Tuesday, 12:00 - 1:00pm

3rd Annual Reza Sarhangi Fund Art Auction

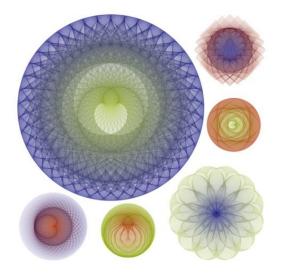
Donations will fund Bridges Conference Travel Scholarships for Students

Please go to RezaFund.org to bid on pieces by the artists listed below. Pieces in the Art Exhibition that are in the auction are marked with a small green dot. Bidding will end at exactly **2pm on July 18**. Winning bidders will be notified by email. Winning bidders must pick up artwork during the dismantling of the Art Exhibition on **July 19**, **12 - 2pm** and are responsible for transporting or shipping artwork home. Payments will be made by credit or debit card through a contribution to the Reza Sarhangi fund online and must be made before picking up artwork. We are not able to accept cash payments.

A Huge Thank You to all our Generous Art Auction Donors!

Paul Ashwell, Ellie Baker, Erika Balogh, Chris Bartlett, Tom Bates, Regina Bittencourt, Bronna Butler, Amenda Chow, Andrea Dozmati, Mircea Draghicescu, Elaine Ellison, Juan Escudero, Robert Fathauer, Paul Gailinunas, Amanda Garcia, Richard Harrington, Margaret Kepner, Joo Kim, Teja Krasek, Paula Krieg, Kerry Mitchell, Uyen Nguyen, John Nicholson, Guy Petzall, Martin Pham, Carlo Sequin, Clayton Shonkwiler, Andrew Smith, Bogdan Soban, Aiman Soliman, Susana Sulic, Emanuela Ughi, Ligia Unanue, Suman Vaze, Jiangmei Wu, Yanxiang Zhang

If you have any question contact Eve Torrence in person or at etorrenc@rmc.edu



"Variations on Curve Stitching, #2" by John Nicholson

SPLACE Gallery

Place: University of Art and Design Hauptplatz 6, 4020 Linz (Tram stop: Hauptplatz)

Opening hours:

Wednesday, July 17:	3:00pm – 7:00pm
Thursday, July 18:	3:00pm – 7:00pm
Friday, July 19:	8:30am – 7:00pm
	Special program, 2:00pm – 7:00pm: Bridges Family Day Workshop
	AFRICAN ART SHAPES by Catherina Steyn (Nelson Mandela
	University, South Africa), more info: www.familyday.hu
Saturday, July 20:	8:30am – 7:00pm
	Special program, 10:00pm – 6:00pm: Experience Workshop's STEAM-
	SPLACE-4-Kids. Various math-art workshops and activities for children
	above the age of 3.

The SPLACE Gallery of the Art University Linz presents two special exhibitions and programs at the Bridges conference 2019. The "Light, Shapes and Numbers" exhibit is featuring the following three artists: BARBARA LICHTenegger, GABRIELE E. MEYER and EUGEN JOST. This exhibit combines artistic, mathematical and technological topics. The "John A. Hiigli" Children and Youth Math-Art Exhibit by Experience Workshop is introducing more than 500 math-artworks made by children from all around the world.

LICHTenegger, MEYER and JOST – Light, Shapes and Numbers

BARBARA LICHTenegger presents both oil and light paintings that are building bridges between traditional techniques and the new technology of 3D printing.

GABRIELE MEYER's work focuses on light and shadow, to form shapes, solid surfaces and holes. Details of the artwork emerge fully when light shines at and through the different textures of the art piece allowing impressive effects to arise.

The exhibition is complemented by digital prints created by EUGEN JOST based on his project "Everything is Number".



BARBARA LICHTenegger: light painting, backlighted with different colors

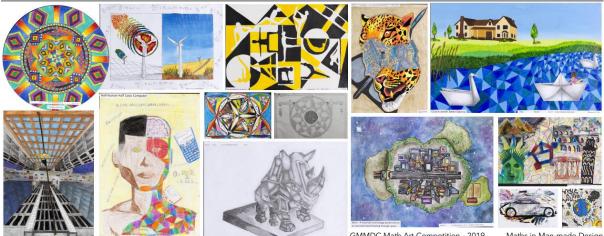


Gabriele Mayer: White and Yellow Blossom: 83cm x 49cm x 49 cm, 500g

Explore the artists and their works!

The "John A. Hiigli" Children and Youth Math-Art Exhibit

Curated by Kristóf Fenyvesi, Catherina Steyn, Werner Olivier, Christopher Brownell & Zsolt Lavicza



GMMDC Math Art Competition - 2019 Maths in Man-made Design

The Bridges Children and Youth Math-Art Exhibits were originally initiated by John A. Hiigli (1943-2017), painter and educator, and the founder of the Jardin Children's Art Galerie in New York (http://jardingalerie.org). Currently, the growing collection is facilitated by Kristóf Fenyvesi and his colleagues from the Experience Workshop International STEAM Movement (www.experienceworkshop.org). In the SPLACE Gallery we present the screened exhibition of more than 500 children and youth mathematical artworks collected all around the world. Our special guests are 12 original pieces from South African secondary school learners who entered the GMMDC National Math Art Competition.

EXPERIENCE WORKSHOP





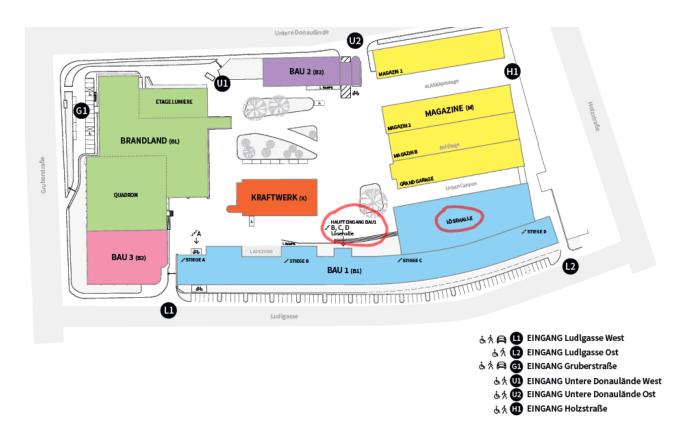


Evening Event at Tabakfabrik

Time: 7:00pm

Place: Lösehalle, Peter-Behrens-Platz 1-15, 4020 Linz

Arriving by public transport: The Tabakfabrik Linz is situated in the heart of the Upper Austrian capital – perfectly connected to public transport. Its main entrance is located at Gruberstraße. Bus route 12 (Stop Parkbad) or Bus route 25 (Stop Parkbad) or Bus route 26 (Stop Lüfteneggerstraße) or Bus route 27 (Stop Lederergasse).





The city of Linz acquired this area in the year 2009 and the buildings, in the style of New Objectivity, have since been transformed into a hotspot for cultural and creative industries, digitalisation, startups and first-class events. Currently, more than 1,600 people work in around 250 companies and organisations on the site—much more than at the end of tobacco production. Starting in the year 2020, the NeuBau 3 will represent a new landmark on the site of the Tabakfabrik Linz, which will gradually form a vibrant city district with around 3,000 workplaces, hotels, educational facilities, as well as residential and shopping facilities.

Eugen Jost

The visit will include a lecture by Eugen Jost, is a Swiss artist, born in Zürich, whose work is strongly influenced by mathematics.

His early career was a technical one: after taking an apprenticeship with Siemens-Albis Telecommunications and working as a technical designer at Bobst et fils in Lausanne, he went on to Teacher Training College in Bern, later becoming a teacher and an instructor in Matten/Interlaken and Spiez. For the past twenty-five years, he has studied and worked in the field of art, particularly pottery, sculpture, and painting.





He likes to experiment with signs and numbers, letters and characters, and his preferred techniques and materials are currently acrylic colours and computer graphic. His artworks and illustrations can be found in numerous books. Together with Peter Baptist and Carsten Miller of the University of Bayreuth he has launched the project "Everything is Number". It resulted in art calendars, books and in an exhibition that was shown in many European Cities.

Math+Fashion Show

The visit will also include the second Bridges Math+Fashion Show. The show will feature a stunning array of apparel and accessories from designers spanning the globe. From Fibonacci and fractals to topology and tilings, this presentation of knitwear, beadwork, origami, and more will be a feast for the eyes.



Formal Music Night at Anton Bruckner Private University

Time: 8:00pm

Place: Hagenstraße 57, 4040 Linz (Großer Saal) Arriving by public transport: <u>https://www.bruckneruni.at/de/top/kontakt/</u> There is an additional shuttle bus to Anton Bruckner Private University. You can buy a ticket at registration (10 €). Limited tickets are available!



ANTON BRUCKNER

OBERÖSTERREICH

"ASR – algorithmic and stochastic resonance"



Bridges 2019's Music Night features a concert of algorithmic and stochastic compositions, improvisations and realtime processing organised by the Computer Music Studio of the Institute of Composition, Conducting and Computer Music in cooperation with the Institute of Keyboard Instruments at the ABPU. CMS Organisation: Andreas Weixler & Se-Lien Chuang

Program and further information: http://avant.mur.at/concerts/2019/Bridges/

Anton Bruckner Private University for music, drama and dance

The Anton Bruckner Private University is an open, innovative centre for the arts, where the performers and teachers of tomorrow receive an individualized education in music, drama and dance. As one of the six Austrian universities for music and drama, and one of the four universities in Linz, the UNESCO City of Media Arts, the Bruckner University sees its role both as a training ground for performing, teaching and academic research, and as an important agent in the development and communication of the arts. The new building of the Bruckner University impresses with its striking architecture and creates the ideal environment for multi-faceted encounters with music, drama and dance.

The range of courses offered by the Bruckner University include performance and teaching degrees in the classical instrumental categories and in Vocal Studies, Early Music, jazz, composition, contemporary dance, drama, music promotion and communication and elementary music education. All courses of study are completed with the academic degrees "Bachelor of Arts" (BA) and "Master of Arts" (MA).



Further information: www.bruckneruni.at

Evening Event at Ars Electronica Center

Time: 7:30pm

Place: Ars-Electronica-Straße 1, 4040 Linz

Arriving by public transport: A convenient way to get here is via public transportation on the Linz Linien.

Tram lines (1,2, 3 or 4) – Stop Rudolfstrasse. From this stop it's just a short walk to the Ars Electronica Center.

The new Ars Electronica Center: Compass – Navigating the Future

Opened in 1996 as a museum of the future, the two-storey building was extended in 2009 to its current size – including new, large exhibition areas in the basement. In 2019, the Ars Electronica Center will be redesigned on a large scale.



"In order to look into the future, a telescope is enough, to move in it, a compass is needed."

From a telescope that opens up a glimpse into the future, the Ars Electronica Center becomes a compass and companion in the present. "Compass – Navigating the Future" is now the motto, claim and invitation of the comprehensively redesigned building.

The topics in the new Ars Electronica Center range from artificial intelligence and neuro-bionics, autonomous systems and robotics, to genetic engineering and biotechnology, to the far-reaching global changes of our time. The focus is on the rapid and difficult to understand developments of the global networks we have created and their connection to technological progress, which shapes our everyday lives on both an individual and a global level.

More information about the Ars Electronica Center and the Deep Space exhibit: <u>https://ars.electronica.art/news/en/</u> https://ars.electronica.art/center/en/exhibitions/deepspace/

Family Day

Time: 2:00pm – 6:00pm Place: University of Art and Design Hauptplatz 6 and 8, 4020 Linz (Tram stop: Hauptplatz)



Can mathematics be playful, can it be fun? Can mathematics be intriguing, attractive, amazing and magical, even for those who did not think it was the most inspiring class at school? At the Bridges Conference Family Day, we throw open our doors and invite people of all ages to browse a rich collection of artistic and scientific workshops and fun programs. Family Day offers an on-site immersion into the fun world of mathematics and arts. Conference participants, including artists, scholars and educators will interactive demonstrations, and offer activities, games, workshops, presentations, giving visitors an opportunity to get inspired by STEAM (Science. Technology, Engineering, Arts and Mathematics). Bridges Family Day is a free public event, open to visitors of all ages! Family Day is coordinated by Kristóf Fenyvesi (Bridges Organization), researcher of STEAM Education at University of Jyväskylä's Finnish Institute for Educational Research, Finland.

The Family Day is integrated in the street art festival Pflasterspektakel (https://pflasterspektakel.at/en/).

2:00pm – 5:3	30pm Workshops 15, 16 and Public Lecture	H8.EG.04
2:00 - 3:30	Christine von Renesse, Julianna Campbell Mathematics and Maypole Dancing maximum 30 participants	
4:00 - 5:30	Lena Nasiakou, Saara Lehto, Svetlana Goranova, Kerry Osborne and K Fenyvesi. Maths in Motion: Exploring Rotational Symmetries and Triangles through Body Movement	
5:30 - 6:00	Dina Hassidov The Relationships Between Mathematics and Sculpture in Wood, Stone (Wax) and Clay	, Bronze
2:00pm – 5:3	30pm Public Workshops	H8.EG.06
2:00 - 3:30	Theo Anagnostopoulos, Giorgos Vagiakis, Vasilena Vasileva, Svetlana Luisa Lenta, Patrizia Sguazzi, Dida-Cristina Isaia, Mariana Mihai, Despo Rafailidou, Lena Nasiakou, Kerry Osborne, Nora Somlyody, Kristof Feng Maths In Motion: Dance, Movement and Maths Learning	oina
4:00 - 5:00	<i>Andrea Capozucca, Marco Fermani</i> Make Music Visible, Play Mathematics	
2:00pm – 6:0	00pm Public Workshops	H8.EG.01
2:00 - 4:00	Briony Thomas, Jamie Mardsen Symmetry, Pattern and Pull-up Polyhedra	

2:00 - 4:00	Karl Schaffer Polyhedra on a Shoe String: String and Finger Geometry	
2:00 - 6:00	Matias Kaukolinna, Nora Somlyody, Kristóf Fenyvesi Experience Workshop STEAM Playground: LUX, Itsphun, CaraWonga	
2:00 - 6:00	Ho Gul Park Geodesic Domes Everywhere! (4Dframe)	
2:00 - 6:00	Andreas Trappmair, Johanna Zöchbauer, Carolin Kern Mathematics: The growing black box of science	
2:00 - 6:00	Daniel Lakos, Eszter Losonczi Logifaces: Analogue Game for Digital Minds	
2:00 - 6:00	<i>Chrissy Pyrounaki</i> Platonic solids / paper folding	
2:00 - 6:00	<i>Marijana Paunović</i> Perspective anamorphosis	
2:00 - 6:00	"Radojic Perovic" school, Podgorica Montenegro: Branko Andjic, Mirjana Boskovic, Milica Djokovic, Nina Vidakovic, Ksenija Buric, Luka Filipovic Robot pianist	
2:00 - 6:00	<i>Kate Jones, Dick Jones</i> Gamepuzzles for the joy of thinking	
2:00 - 6:00	Roger Burrows Labyrinths Workshop	
2:00 - 6:00	Zsuzsanna Dárdai, János Saxon Szász Poly-Universe in School Education	
2:00 - 6:00	Lajos Poczók Original construction set for colleges and secondary schools: An innovation	
2:00 - 5:00	<i>Jelena Joksimovic, Danijela Vucicevic</i> Magic Square vs Poetry Game	
2:00 - 6:00	Elaine F. Ellison Finding Irrational Numbers in Quilt Patterns	
2:00pm – 7:00pm Public Workshop SPLACE Gallery		
2:00 - 7:00	Catherina Steyn African Art Shapes	

Short Film Festival 2019

Time: 2:00pm - 3:15pm, 4:45pm - 6:15pm

Place: Ars Electronica Center

Ars Electronica Straße 1, 4040 Linz Level -1, Lecture Room (Tram stop: Rudolfstraße)



The festival presents an annual reel of juried short films exploring mathematical themes. It will include films, videos and animations that have been created for educational, corporate and artistic purposes, or just for fun. Styles will include mathematical visualizations, conceptual animations, mathematical stories and fairy-tales, art based on mathematical rules, and exciting explanations and entertainment.

The jury for this year's Bridges Short Film Festival was made up of Sabetta Matsumoto, Henry Segerman, Susan Gerofsky and Bianca Violet.

The Short Film Festival reel will be screened twice as part of Family Day, beginning at 2:00pm and at 4:45pm. The 4:45pm screening will also include an introduction and Q&A with the creators of the films who are attending the conference.

A gallery of this year's short films can be found on the Bridges Gallery site: <u>http://gallery.bridgesmathart.org/exhibitions/2019-bridges-conference-short-film-festival</u>

Poetry Reading – An Afternoon of Mathematical Poetry

Time: 2:00 – 4:00pm

Place: University of Art and Design Hauptplatz 6, 4020 Linz Repräsentationsraum, 5th floor (Tram stop: Hauptplatz)

Coordinated by Sarah Glaz, professor of mathematics at the University of Connecticut and poet, the poetry readings at Bridges feature poetry with strong links to mathematics and a wide range of poetic styles. The program starts with a number of invited poets reading selections from their work, followed by an open microphone period where Bridges participants are invited to read their own mathematical poems. Selected poems from the readings appear in the **Bridges Poetry Anthologies**. Poets are encouraged to share more of their art and scholarship by submitting articles for talks or workshops, visual poems to the gallery, or poetry with animated or musical elements for the short movie festival.

Further information: http://tiny.cc/vtge9y

Demoscene

Time: 3:30pm - 4:30pm

Place: Ars Electronica Center Ars Electronica Straße 1, 4040 Linz Level -1, Lecture Room (Tram stop: Rudolfstraße)

Demoscene - Digital Culture in Real-Time

The demoscene represents one of the most colourful facets of digital culture. Musicians, graphic artists and coders (programmers) form groups and work on a demo, a computer program intended to show their personal skills and abilities. Thanks to competition between various groups, demos have been subject to a high degree of evolutionary pressure so-to-speak in terms of technology and style. This includes in particular the underlying algorithms and mathematics.

The incentive behind these efforts is to amaze others, to overcome apparently impossible technical challenges and to exhaust the limits of the hardware. While films as a rule can only play back their images or frames, demos generate these images for the exact moment - in real-time.

The screening is curated by Stefan Pautze (a.k.a. Felidae / Reflex) from Digitale Kultur e.V. <u>http://digitalekultur.org</u>

Stefan Pautze is graduate engineer in the automotive branch and graphic artist. His artistical roots as well as his ties to the Demoscene date back to the nineties, when the mainly Dresden-based Commodore 64 demo group Reflex ruled the demo competitions. Recently he works mainly in the field in between mathematics and art with focus on aperiodic tilings. http://www.pautze.de

The program was supported with captures from Frederik "Annikras" Heinrich. <u>http://www.youtube.com/user/Annikras</u> The program is not suitable for epileptics.

Theater Event

Time: 4:45pm – 6:15pm

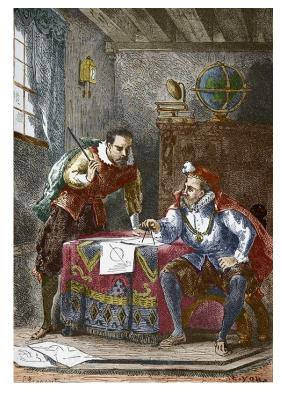
Place: University of Art and Design Hauptplatz 6, 4020 Linz Repräsentationsraum, 5th floor (Tram stop: Hauptplatz)

"A Short History of Night" by John Mighton

"A Short History of Night" charts the strange origins of contemporary science through two of the Renaissance's most unusual figures – mercurial, ambitious Danish astronomer Tycho Brahe and meticulous, idealistic mathematician and Christian mystic Johannes Kepler. As religious wars and witch hunts rage outside the castle walls, an unlikely band of alchemists and astrologers vie to unlock the secrets of the cosmos.

Playwright (and mathematician) John Mighton won the 1992 Governor General's Award for this play loosely based on the life of Kepler that draws disturbing parallels between medieval and modern thought.

Directed by Steve Abbott. Music by Susan Gerofsky. Performed by the Bridges Community Players.



"Kepler and Tycho Brahe in the Observatory in Prague" by J. Ventura, ca 1880

Saturday, July 20, 2019

Excursion Day

The Bridges 2019 Excursion Day offers several different options in and around Linz, at different times of day. We invite you to choose one or more options from the list below.

Boat trip round the harbor - Registration was required!

Admission:	15,50 € / person
Time:	3 times a day:
	11:00am, 1:00pm, 3:00pm
	(duration of 100 minutes)
Meeting point:	Mooring Lentos Kunstmuseum

The harbour tour shows the interplay of culture, nature and industry in Linz. On a trip from the landing stage Lentos Kunstmuseum Linz down the Danube to the mouth of the Traun. On the way back you can observe the fascinating, oversized graffiti of the Mural Harbour.



Voestalpine Stahlwelt & Werkstour – Registration was required!

Admission:	20 € / person (max. 50 people)			
Time:	9:30 am (2.5 hours)			
Location:	Voestalpine-Straße 4, 4020 Linz			
Meeting point:	9:15 am at Voestalpine-Straße 4			
https://www.voestalpine.com/stahlwelt/Besucherservice/Anreise-oeffentliche-Verkehrsmittel				



Around the world, voestalpine produces, processes and develops steel to make high-quality products and innovative solutions. Come and visit voestalpine's world of discovery, where you can learn more about steel and the countless and innovative ways it can be used. Discover the fascinating world of steel. Discover the voestalpine Stahlwelt. The voestalpine steel plant is the cleanest and most innovative in the world. A claim many steel plants make

- but how many allow a glimpse of what is on the other side of the factory gate? voestalpine does and even goes one step further: After you visit the exhibition in the voestalpine Stahlwelt, you're in for an exciting plant tour. The multimedia buses will take you deep inside the plant grounds, covering 5.2 square kilometers, directly to the production facilities, where you will get a behind-the-scenes look at various steps in the steel making process up to the finished product.

Please note: You have to wear sturdy, closed-toed shoes (no sandals, flip-flops, crocs, etc.). We also recommend you wear stain-resistant clothing.

For more information, please visit: <u>https://cutt.ly/eEZZ87</u>

Guided Tour through Linz – Registration was required

Admission:	5 € - 10 € (depending on registration numbers)
Time:	2:30 pm (1.5 hours)
Meeting point:	2:15 pm at Hauptplatz, next to the tourist information
	Hauptplatz 1 (Altes Rathaus), 4020 Linz

Crooked alleyways, historical locations, impressive buildings and the individual districts of Linz – no one knows Linz better than the Austrian Guides. Enjoy a guided tour through Linz and experience the city's history firsthand, discover stories about famous people, and explore sights off the beaten track, which you wouldn't have found by yourself.

"Pflasterspektakel" – International Street Performance Festival Linz

At Pflasterspektakel Linz around 100 companies and solo performers transform Linz' city centre into a unique venue of international street performance art. In addition to professionals from all over the world, young talents from the region also get their chance to perform in front of a big audience.



Pflasterspektakel – one of the biggest and most renowned festivals in Europe presents a huge variety of street performance art at the highest level: juggling and comedy, clownery and pantomime, aerial and fire acrobatics, dance, puppet theatre and music of all kinds. Every year the festival features attractive program innovations and novelties.

Further information: <u>https://pflasterspektakel.at/en/</u>

Sinnesrausch 2019 – Art and Motion

Admission:	10 € / person
Opening hours:	10:00am – 8:30pm
Location:	OK Platz 1, 4020 Linz

"Sinnesrausch – Art and Motion" is the topic of this year's summer exhibition in the OÖ Kulturquartier with artistic highlights on the rooftop park over the centre of Linz.

Large-scale installations, designed for visitors to "perceive" actively and playfully, not only with their eyes but with their whole bodies, are at the heart of the Sinnesrausch exhibition.

The circuit with its walkways, bridges and stairs, the various art spaces, and the vast roof landscape high above Linz along with 30 international artistic contributions forms the atmospherically charged backdrop for this extraordinary art project.

Further information: <u>http://www.sinnesrausch.at/en/</u>

Museums

Naturally, Linz also offers a number of museums that you can explore on your own. We recommend the following options:

- Lentos: <u>https://www.lentos.at/html/en/index.aspx</u>
- Schlossmuseum Linz: <u>http://www.landesmuseum.at/en/location/schlossmuseum-linz.html</u>
- Ars Electronia Center: <u>https://ars.electronica.art/news/en/</u>
- Stifterhaus: <u>https://stifterhaus.at/index.php?id=3</u>
- Nordico Stadtmuseum: <u>https://www.nordico.at/html/de/index.aspx</u>

First-hand facts, information and tips - Tourist Information Linz

Would you like to know what sights, current day programs and event highlights Linz has to offer? Whether you're looking for tips for your cultural and nature program or your restaurant visit, the team at Tourist Information Linz is happy to help you!

Opening hours:

Monday to Saturday:	09:00am – 07:00pm
Sunday/Holiday:	10:00am – 07:00pm

Tourist Information Linz Altes Rathaus, Hauptplatz 1 Further information: https://www.linztourismus.at/en/leisure/plan-a-trip/service/tourist-information/

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