BRIDGES

WATERLOO 2017

UNIVERSITY OF WATERLOO

Program and Conference Information

July 27-31, 2017
Waterloo, Ontario Canada

Bridges Waterloo 2017

The Bridges Organization oversees the annual Bridges conference on mathematical connections in 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 conference features invited speakers, full and short paper presentations, educational workshops, a juried art exhibition, and arts performance events.

Supporters

UNIVERSITY OF WATERLOO
FACULTY OF MATHEMATICS
David R. Cheriton School
of Computer Science

THE CITY OF Waterloo

WATERLOO MATH 50 1967–2017

FIELDS

University of Waterloo

University of Waterloo

The University of Waterloo is home to the world's largest co-operative education program and boasts a uniquely entrepreneurial culture that encourages experimentation and risk-taking. The result is an outstanding learning and research experience for more than 36,000 undergraduate and graduate students in Waterloo, Ontario, Canada — the anchor of Canada's innovation corridor. Waterloo — Canada's top innovation university — is a research powerhouse and the engine of one of the world's leading startup ecosystems. Offering world-class scholarship and research, combined with unparalleled experience-based education, Waterloo builds a better future for Canada and the world by championing innovation and collaboration to create solutions relevant to the needs of today and tomorrow.

Faculty of Mathematics

The University of Waterloo is unique in North America as home to a Faculty of Mathematics, made up of five departments – applied mathematics, combinatorics and optimization, pure mathematics, statistics and actuarial science, and the David R. Cheriton School of Computer Science. The Faculty is currently home to 7,588 undergraduate students from 68 countries, 616 master's and 316 doctoral students, 63 postdoctoral researchers, 240 faculty, and 115 staff members. This vibrant research community investigates questions from theoretical foundations to applications across the full range of mathematical disciplines. Topics include cybersecurity and privacy, quantum information, artificial intelligence, quantitative finance, computer algebra, mathematical biology, data science, general relativity theory, functional analysis, number theory, and more.

Cheriton School of Computer Science

The David R. Cheriton School of Computer Science brings together over 80 faculty members, 40 staff and 2700 students at the undergraduate and graduate levels. The School has its origin in the Department of Applied Analysis and Computer Science, founded in 1967, and has grown to become the largest academic computer science research centre in Canada. Researchers in the School engage in an incredible range of computer science and information systems topics, from artificial intelligence to computer graphics, machine learning to scientific computation. They are leading the scientific community: QS Top University Rankings places Waterloo in the top 25 globally among computer science departments, while US News and World Report ranks Waterloo in the top 20. Approximately one quarter of all university spin-off companies in Canada are from the University of Waterloo and computer science plays a prominent role in many of these.

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Schedule

2:00 p.m. - 6:00 p.m.
DC atrium
Registration

Thursday, July 27, 2017

8:00 a.m. - 5:00 p.m.
Fed Hall
Registration

9:00 a.m. - 9:30 a.m.
Fed Hall
Welcome remarks
Bridges Waterloo Organizing Committee and guests:
Dave Jaworsky
Mayor, City of Waterloo
Stephen Watt
Dean, Faculty of Mathematics

9:30 a.m. - 10:30 a.m.
Fed Hall
**Stumbling Into It: You Make Your Best Work When You
Don't Know What You're Making**
Damian Kulash

10:30 a.m. - 11:00 a.m.
Coffee break

11:00 a.m. - 12:00 p.m.
Fed Hall
Reza Sarhangi Memorial Lecture
Fun with Fonts: Mathematical Typography
Erik Demaine

12:00 p.m. - 2:00 p.m.
Lunch break

2:00 p.m. - 3:30 p.m.
Parallel sessions

Regular Papers Session 1
DC 1302

Making Math Visible
George Hart and Elisabeth Heathfield

**Let the Numbers Do the Walking: Generating Turtle Dances on the
Plane from Integer Sequences**
Adam Colestock

A Mathematics and Digital Art Course
Vincent J. Matsko

Regular Papers Session 2
DC 1304

Dichromatic Dances
Karl Schaffer

Kissing Rings, Bracelets, Roses and Canadian Magnetic Coins: Circle Packing with Ferrite Block Magnets and Magnetic Sheet
Maria Victoria Canullo, Veronika Irvine and Robin Linhope Willson

Magnetic Sphere Constructions
Henry Segerman and Rosa Zwier

Short Papers Session 1
DC 2568

3D Printable Golden Sponges
Donald Plante

Constructing Deltahedra from Recycled Plastic Bottles
Weiling He, Chengde Wu and Ergun Akleman

Triskelion Block Families
Akihiro Matsuura and Hiroshi Shirane

Designing Skeletal Polyhedral Sculptures Inspired by Octet-Truss Systems and Structural Inorganic Chemistry with Bugle Beads
Chia-Chin Tsoo and Bih-Yaw Jin

Surfaces Foliated by Planar Geodesics: A Model for Curved Wood Design
David Brander and Jens Gravesen

Designing Modular Sculpture Systems
Christopher Carlson

Short Papers Session 2
DC 2585

Math Creations - A Math-Art Competition
Bianca Violet, Chiquira Wagner and Ekaterina Eremenko

The English Translation of the 1652 Edition of J-F Niceron's Perspective Curieuse
James Hunt and Sylvia Hunt

Nebula: Live Dynamic Projection Mapping via Object Saliency
Sara Greenberg, Audrey G. Chung and Alexander Wong

The Sound of Space-Filling Curves
Herman Haverkort

Listening to the Logistic Map
Andrea Capozucca, Marco Fermani and Simone Giorgini

Algorithmic Aesthetics: Redefining Traditional Islamic Art
Carol Bier

Workshops Session 1a
MC 5417

Creating Polyhedra with Snapology
Faye Goldman

Workshops Session 1b
MC 5479

How to Use Vector Theory to Write a Story
Cynthia Clay

3:30 p.m. - 4:00 p.m.
DC atrium
Coffee break

4:00 p.m. - 5:30 p.m.
Parallel sessions

Regular Papers Session 3
DC 1302

The Golden Ratio: How Close Is Close Enough?
Lisa Lajeunesse

Zometool Tribute to Fabien Vienne at Bridges Finland 2016
Samuel Verbiese

Art of Infinity
Kenneth Brecher

Regular Papers Session 4
DC 1304

Non-Euclidean Virtual Reality
Vi Hart, Andrea Hawksley, Elisabetta Matsumoto and Henry Segerman

HyperRogue: Playing with Hyperbolic Geometry
Eryk Kopczyński, Dorota Celińska and Marek Čtrnáct

Regular Papers Session 5
DC 2585

A General Method for Building Topological Models of Polyhedra
Mircea Draghicescu

Inter-transformability II
John Hiigli and Stephen Weil

Artwork Inspired by Dual Dodecahedra and Icosahedra
Stephen Wassell and Mark Reynolds

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Short Papers Session 3
DC 2568

Cartesian Lace Drawings
Susan Happersett

How to Draw a Line
Simon Ever-Hale

Topological Images with Modular Block Print Tiles
Felicia Tabing

Inversive Diversions and Diversive Inversions
Gregg Helt

Symmetric Binary Trees with Branching Ratios Larger than 1
Nick Mendler and Vincent J. Matsko

Ballistic Deposition and Aesthetic Patterns
Gary Greenfield

Workshops Session 2a
MC 5417

Folding the Dragon Curve Fractal
Natalija Budinski and Miroslav Novta

Please register for this workshop at the registration desk!
Maximum number of participants: 30

Workshop Session 2b
MC 5479

The Aesthetics of Colour in Mathematical Diagramming
Eva Knoll, Tara Taylor, Wendy Landry, Paul Carreiro, Katie Puxley
and Karyn Harrison

Please register for this workshop at the registration desk!
Maximum number of participants: 24

5:30 p.m. - 6:00 p.m.
Break

6:00 p.m. - 9:00 p.m.
Fed Hall
Opening reception and art exhibit opening

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Friday, July 28, 2017 - CanCon Day

9:30 a.m. - 10:30 a.m.
Fed Hall
Plenary Talks

Motion Exposure: Telling the Story of Movement With Light Painting Photography

Stephen Orlando

Numbers with Personality

Alice Major

10:30 a.m. - 11:00 a.m.
Coffee break

11:00 a.m. - 12:00 p.m.
Fed Hall
Plenary Talks

Aspects of Symmetry in Bobbin Lace

Veronika Irvine and Frank Ruskey

New Quasiperiodic Architectures: Work in progress from the Living Architecture Systems Group

Philip Beesley

12:00 p.m. - 2:00 p.m.
Lunch break

2:00 p.m. - 3:30 p.m.
Parallel sessions

Regular Papers Session 6
DC 1302

Homage to Eva Hild
Carlo H. Séquin

Hopeless Love and Other Lattice Walks
Tom Verhoeff and Koos Verhoeff

Poems Structured by Integer Sequences
Sarah Glaz

Regular Papers Session 7
DC 1304

Geometric Factors and the Well Dressed Solids of Archimedes
Stan Spencer

On Infinite Kepler-Poinsot Polyhedra
Dirk Huylebrouck

Conics from Polygons: The Chord Ratio Construction
Scott Vorthmann, David Hall and David Richter

Short Papers Session 4
DC 2568

A Cellular Automaton for Pied-de-poule (Houndstooth)
Loe Feijs and Marina Toeters

A Temari Permutation Sampler
Debra K. Borkovitz

Quilting the Klein Quartic
Elisabetta Matsumoto

Tiling Notation as Design Tool for Textile Knotting
Nithikul Nimkulrat, Janette Matthews and Tuomas Nurmi

The Complexity of Braids, Cables, and Weaves Modeled with Stranded Cellular Automata
Joshua Holden

Triaxial Weaving for Complex Repeat Patterns and Tessellations
Mary Klotz

Short Papers Session 5
DC 2585

Transforming Squares to Strips in Expanded Polyhedral Forms
David Reimann

Polyhedra: Eye Candy to Feed the Mind
Stacy Speyer

Introducing the Kasparian Constructions
Raffi J. Kasparian and Alice E. Petillo

Die-Cut Colored Paper Sculptures of the Real and Imaginary Parts of Complex Functions
Caroline Bowen

Applying Helical Triangle Tessellations in Folded Light Art
Jiangmei Wu

Hyparhedra Revisited
Eve Torrence

Workshops Session 3a
MC 5417

Playing in the Lux Dimension
Michael Acerra

Workshop Session 3b
MC 5479

Thinking Visually: Triangles as Units of Area
Paul Gailiunas

3:30 p.m. - 4:00 p.m.
DC atrium
Coffee break

4:00 p.m. - 5:30 p.m.
Parallel sessions

Regular Papers Session 8
DC 1302

New Kinds of Fractal Patterns
Douglas Dunham and John Shier

**Obtaining the H and T Honeycomb from a Cross-Section
of the 16-cell Honeycomb**
Hideki Tsuiki

Hidden Beauty in Penrose Tiling: Weavings & Lace
Douglas Burkholder

Regular Papers Session 9
DC 1304

**An Algorithmic Approach to Obtain Generalized 2D
Meander-Pattern**s
Saied Zarrinmehr, Ergun Akleman, Mahmood Ettehad, Negar Kalantar,
Alireza Borhani Haghighi and Shinjiro Sueda

Flowsnake Earth
Jacob Rus

Morphing TSP Art
David Swart

Short Papers Session 6
DC 2585

**Using African Designs in Virtual Manipulatives for
Geometrical Concept Development**
Philip Collett and Catherina Steyn

Visualizing Math Art Activities at the GameLab
Sujan Shrestha

**Obtaining Four Main Animation Cycles Using an Extremely
Limited Set of Poses**
Ergun Akleman, Derya Akleman, Ioannis Pavlidis and Pradeep Buddharaju

3D Printed Tours
Robert Bosch

Collaboration in Creating The Mathematical Poem
Carol Dorf

Please register for this workshop at the registration desk!
Maximum number of participants: 40

Workshops Session 4b
MC 5417

**From Rabbit Ears to Origami Flowers: Triangle Centers
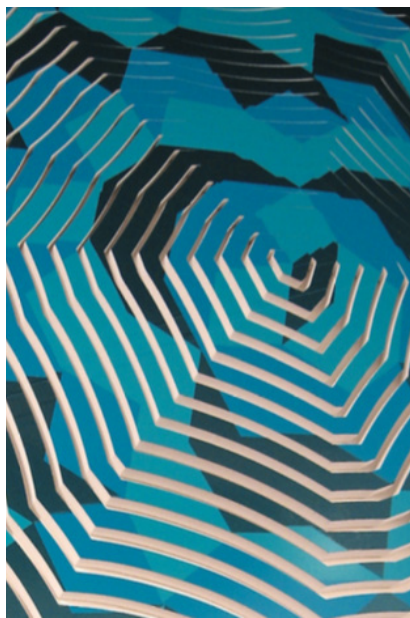and the Concept of Function**
Alan Russell

5:00 p.m. - 8:00 p.m.
East Campus Hall

UNIVERSITY OF WATERLOO ART GALLERY RECEPTION

Passage + Obstacle

A selection of work by multidisciplinary area artists Patrick Cull, Paul Dignan, Laura De Decker, Soheila Esfahani, and Andrew James Smith.

Sharing a rigorous approach to materials and subject matter, their artwork parallels Bridges stated goal to explore "mathematical connections in art, music, architecture, education and culture". The exhibition sets out to complement and expand our perception of the subtle and overt links between the use of geometry, pattern and optical effects across mediums ranging from painting and installation to digital media. Using the bridge as a metaphor, the artworks can be appreciated as a means of getting from A to B by overcoming obstructions, perceptual or otherwise.

8:00 p.m. - 9:30 p.m.
Fed Hall

BRIDGES THEATRE NIGHT

Structure: An Allegory
Peter Taylor and Judy Wearing

9:30 a.m. - 10:30 a.m.
Fed Hall
What are the foundations of mathematics and art?
Form, logic, or intuition?
Lynn Gamwell

10:30 a.m. - 11:00 a.m.
Coffee break

11:00 a.m. -12:00 p.m.
Fed Hall
ALGORITHMIC TRANSFORMATIONS: from idea in mind to idea in code
Roman Verostko

12:00 p.m. - 2:00 p.m.
Lunch break

2:00 p.m. - 3:30 p.m.
Parallel sessions

Regular Papers Session 10
DC 1302

Tuti Inter-Weaving
Abdalla Ahmed and Oliver Deussen

DNA-inspired Basketmaking: Scaffold-Strand Construction of Wireframe Sculptures
James Mallos

Interwoven Islamic Geometric Patterns
Craig Kaplan

Regular Papers Session 11
DC 1304

A Peg Solitaire Font
Taishi Oikawa, Kazuaki Yamazaki, Tomoko Taniguchi and Ryuhei Uehara

Fun with Integer Sequences
Kerry Mitchell

Combinatorics in the Art of the Twentieth Century
Lali Barrière

Regular Papers Session 12
DC 2568

Modelling Seashells Shapes and Pigmentation Patterns: Experiments with 3D Printing
Francesco de Comité

Seeing and Hearing the Eigenvectors of a Fluid
Aaron Jones, Joann Kuchera-Morin and Theodore Kim

Versatile Genius: A Case Study Intersecting Math, Science, Art, and California's National Parks
Leslie Love Stone and Christopher S. Brownell

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Short Papers Session 7
DC 2585

The Interval Dissonance Rate: An Analytical Look into Chromaticism of Chopin's Op. 10 No. 2 and Scriabin's Op. 11 No. 2
Nikita Mamedov and Robert Peck

Non-Octave Guitar and Keyboard Designs for Ervin M. Wilson
Reilly Smethurst

Émilie, an Opera about Love, Death, and Mathematics
Liisamaija Hautsalo and Osmo Pekonen

Shaping Poems – with Visual Forms and Counting
Jo Anne Growney

Great Books, Poetry and Mathematics
Emily Grosholz

The Poetics of a Cyclic Directed Graph
Courtney Huse Wika and Daniel May

Workshops Session 5a
MC 3003

Star Origami
Joy Hsiao
Please register for this workshop at the registration desk!
Maximum number of participants: 30

Workshops Session 5b
MC 5417

Omniwheel Robot Construction at the Math Class
Kristof Fenyvesi, Ákos Vecsei, Diego Lieban, Zsolt Lavicza, Hogul Park and Gábor Vecsei

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3:30 p.m. - 4:00 p.m.
DC atrium
Coffee break

4:00 p.m. - 5:30 p.m.
Parallel sessions

Regular Papers Session 13
DC 1302

Invertible Infinity: A Toroidal Fashion Statement
Ellie Baker and Charles Wampler

A Survey of Symmetry Samplers
Susan Goldstine

Crooked Houses: Visualizing the Polychora with Hyperbolic Patchwork
Taneli Luotoniemi

Regular Papers Session 14
DC 1304

Natural Color Symmetry
Frank A. Farris

A Geometrical Representation and Visualization of Möbius Transformation Groups
Kento Nakamura and Kazushi Ahara

The Artful Kaleidoscopes of the Circular and Spherical Bells
Carlos Puente

Short Papers Session 8
DC 2585

On the Enumeration of Chequered Tilings in Polygons
Hiroaki Hamanaka, Takashi Horiyama and Ryuhei Uehara

The Surprising Versatility of Edge-Matching Tiles
Kate Jones

The Discovery and Application of the Protogon's Spiral
Andrew Smith

Constructing Mini-tools for Tessellations
Loe Feijs, Jun Hu, Mathias Funk, Mayra Goevaerts,
Teun Keusters and Caro Van Kessel

Turing-Like Patterns Revisited: A Peek Into The Third Dimension
Martin Skrodzki and Konrad Polthier

Artistic Rendering of Curves via Lattice Paths
Anton Bakker and Tom Verhoeff

Abstracts Session
DC 2568

Workshops Session 6a
MC 5417

The Magic of Anamorphosis in Elementary and Middle School
Marina Barreto and Diego Lieban

Please register for this workshop at the registration desk!
Maximum number of participants: 20

Workshops Session 6b
DC 1331

Dancing Rope and Braid Into Being: Whole-body Learning in Creating Mathematical/ Architectural Structures
Susan Gerofsky, Eva Knoll and James Forren

8:00 p.m. - 9:30 p.m.
Hagey Hall, Humanities Theatre

FORMAL MUSIC NIGHT

The Dazzled Eye Lost its Speech
A program of music for vocal ensemble spanning seven centuries.

Chosen repertoire explores relationships of music to math through architecture, form, symmetry and process-driven composition. The concert includes Guillaume DuFay's (1397-1474) motet Nuper rosarum flores, composed for the consecration of the newly completed Florence Cathedral in March 1436. DuFay was among the earliest composers to make an explicit link between music and math by composing this dedicatory motet to have the same mathematical proportions as the biblical Temple of King Solomon.

In addition to DuFay's proportionally balanced isometric motet, the program includes music by the 15th century French composer, Johannes Ockeghem, Americans William Billings, John Cage, Phillip Glass and David Lang, as well as Baltic composers Rytis Myžulis, Ēriks Ešenvalds and Arvo Pärt and Canadian R. Murray Schafer. Conducted by University of Waterloo/Conrad Grebel University College music professor, Mark Vuorinen, the program features a specially-formed ensemble of choristers and professional soloists.

Brought to you by the Musagetes Fund at the Kitchener and Waterloo Community Foundation

THE KITCHENER
AND WATERLOO
COMMUNITY
FOUNDATION

THE MUSAGETES FUND

9:30 a.m. - 10:30 a.m.
Fed Hall
Sculptural Forms Based on Radially-developing Fractal Curves
Robert Fathauer

10:30 a.m. - 11:00 a.m.
Coffee break

11:00 a.m. - 12:00 p.m.
Fed Hall
Surprising Structures and Baffling Behaviors:
Kinetic Sculptures Grounded in Geometry
John Edmark

12:00 p.m. - 2:00 p.m.
Lunch break

2:00 pm. - 4:00 p.m.
DC 1304

POETRY READING

The poetry reading at Bridges 2017 features poetry with strong links to mathematics, a great variety of topics, and a wide range of poetic styles.

2:00 pm. - 6:00 p.m.
DC atrium

FAMILY DAY

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?

Bridges Family Day is a free public event that offers a range of hands-on activities, workshops, games, exhibitions, and performances that connect mathematics with art. Join us for an afternoon of delight and inspiration. Family day is a free event, open to any and all who wish to join us!

Bridges Family Day is coordinated by Kristóf Fenyvesi, the Bridges Organization's Director of Community Events, researcher of Contemporary Art & Culture Studies at University of Jyväskylä, Finland.

2:00 p.m. - 4:00 p.m.

2:00 p.m. - 3:00 p.m.

Paper Quilt fun with Irrational Numbers
Elaine F. Ellison

Playing in the Lux Dimension
Mike Acerra

4DFrame Mechatronics
Hogul Park

Geometry Through Time
Roger Burrows

Mathematics and Origami
Natalija Budinski and Miroslav Novta

Imaginary Cube Puzzle
Hideki Tsuiki

Building with Z-bent Springs
James Mallos

Polyhedra Party
Stacy Speyer

4:00 p.m. - 6:00 p.m.

Re-Bot Experience Workshop: Don't throw it out, create a robot!
Gábor Vecsei

How to Write a Story Using Vector Theory?
Cynthia Clay

Polyhedra on a Shoe String: String and Finger Geometry
Karl Schaffer

Poly-Universe & caraWonga Mandalas
Experience Workshop

2:00 p.m. - 6:00 p.m.

Persian Patterned Polyhedra
Eve Torrence

Treasures Inside the Bell
Carlos E. Puente

"X-mas in July": Kirigami Workshop
Corinna Beuermann-Kulp

Jardin Galerie's Children and Youth Art Exhibit
John Hiigli and Kristóf Fenyvesi

The Piano Keyboard as You Never Saw it Before
Samuel Verbiese

Coloring Infinity: a study on The Dougherty Set
Buddy James & Theo Dougherty

3D Geometric Art
Mircea Draghicescu

Navigational puzzles in the hyperbolic plane
Dorota Celinska and Eryk Kopczynski

LEGO Broccoli
Sunil Singh

The Playful Side of Mathematical Art
Kate Jones and Alex Streif

(A-)periodic Puzzles
Uli Seidel

BigZome Construction
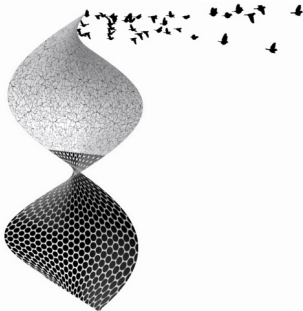Micho Đurđevich, Paul Hildebrandt and Samuel Verbiese

2:00 p.m. - 3:30 p.m. and 4:30 p.m. - 6:00 p.m.

DC 1302
FILM FESTIVAL

The Bridges Short Film Festival was initiated by Reza Sarhangi in 2010, and has since become an integral part of the conference. The festival presents an annual reel of mathematical short films, videos and animations that have been created for educational, corporate and artistic purposes, or just for fun.

This year's program was juried by Aubin Arroyo, Kim Davidson, Chantal Landry, Jos Leys, Ana Cristina Oliveira, and Bianca Violet (chair). The 16 selected short films represent a variety of styles, from visualizing objects or spaces, mathematical stories and fairytales, art based on mathematical rules, exciting explanations and entertainment, conceptual animations, and more. The full program, with links to all of the films, will appear on the Bridges Organization website.

INFORMAL MUSIC NIGHT

Do you sing or play an instrument and would like to share a song with us? Do you have a rhythm group exercise or audience participation number you think your Bridges friends would enjoy? Or do you just want to show up and see what kind of fun happens at the unpredictable Bridges informal night?

Each year we gather for an evening during the Bridges conference for the best variety music show in the math world. Some participants are world-class musicians. Some have never performed before but are eager to bang out a tune. Some songs are mathematical, most are not. The point is to have fun, and that's just what we'll be doing!

We'll have a piano and a guitar on hand, and folks often bring their own instruments. We'll have an informal show for an hour and then those who want to can stay after for an even more informal jam session.

If you'd like to play something for us, just contact Mike Naylor or find him during the first few days of the conference and he'll put you on the roster. We hope you'll join us!
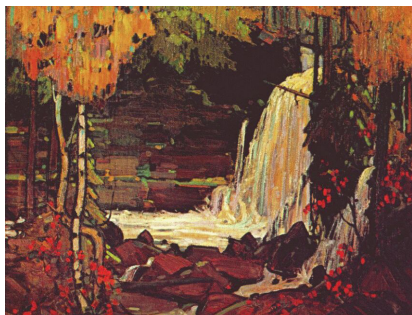

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Advance ticket purchase required- see registration table

The McMichael Gallery
Kleinburg, Ontario

The McMichael Canadian Art Collection stands alone as the only publicly funded fine art gallery in the nation that focuses on Canadian art and the Indigenous art of our country, both historical and contemporary. The permanent collection consists of over 6,400 artworks by Tom Thomson, the Group of Seven, their contemporaries, and First Nations, Métis, Inuit and contemporary artists who have contributed to the development of Canadian art.

Built of fieldstone and hand-hewn logs in a modernist design, the McMichael houses thirteen exhibition galleries where floor-to-ceiling windows enable visitors to enjoy views of the densely wooded Humber River Valley. Beyond the galleries are 100 acres of forested land, from a ridgetop 'wilderness garden,' planted by the McMichaels to echo the northern forest beloved of the Group of Seven, to theheritage wetlands and waterways.

Rattlesnake Point Conservation Area
Milton, Ontario

We will stop at Rattlesnake Point to eat lunch and take in the beautiful scenery. Rattlesnake Point is one of the scenic stops along the Niagara Escarpment, and a popular spot for camping, hiking, rock climbing. There are easily accessible walking trails to panoramic views of the region.

Niagara Falls
Niagara Falls, Ontario

In the afternoon, we will take in the incredible power and beauty of Niagara Falls, one of the world's most famous tourist attractions.

Schedule

Time	Event
8:30 a.m:	Buses leave from University of Waterloo
10:00 a.m:	Arrive at McMichael Gallery
12:00 p.m:	Depart McMichael Gallery
12:50 p.m:	Arrive at Rattlesnake Point
2:00 p.m:	Depart Rattlesnake Point
3:00 p.m:	Arrive at Niagara Falls
4:00 p.m:	Depart Niagara Falls
6:00 p.m:	Return to Waterloo (with optional drop-off Uptown Waterloo)

Reza Sarhangi Fund Art Auction
RezaFund.org

Donations will fund Bridges Conference travel scholarships for students, the Reza Sarhangi memorial lecture, and the Reza Sarhangi student scholarship at Towson University

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 29. Winning bidders will be notified by email. Winning bidders must pick up artwork during the dismantling of the Art Exhibition on July 30, 4 - 5 pm 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!

Aubin Arroyo, Dan Bach, Ellie Baker, Erika Balogh, Chris Bartlett, Corinna Beuermann-Kulp, Regina Bittencourt, Erik and Martin Demaine, Jennifer Doyle, Doug Dunham, Elaine Ellison, Robert Fathauer, Susan Goldstine, Susan Happersett, George Hart, Marye Hobbs, Joy Hsiao, Kate Jones, Margaret Kepner, Hans Kuiper, Kevin Lee, Colin Liotta, Gabriele Meyer, Guy Petzall, Henry Segerman, Ulrich Seidel, Carlo H. Sequin, Laura Shea, John Shier, Andrew Smith, Bogdan Soban, Werner Sun, Bruce Torrence, Samuel Verbiese, Bianca Violet, Marcus Volz, Junichi Yananose.

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

General Information

Travel

The conference is located at the University of Waterloo with events based in Federation Hall, Math and Computing (MC) and the Davis Centre (DC). On campus accomodations are in Ron Eydt Village (REV). See map on page 26.

Airways Transit shuttles (1-800-691-3045) can bring you directly to the Toronto Pearson International Airport (YYZ).

For local travel, Grand River Transit (GRT) buses can bring you almost anywhere within the region for $3.25. They frequently make stops around campus, including right outside of the Davis Centre.

Waterloo Taxi (519-888-7777) is providing a 15% discount on all rides for participants of the Bridges conference.

Internet Access

1. On your device select "uw-wifi-setup-noencryption"
2. When you try to connect to the internet a page will pop up. Select the third option "click here if you are attending an event"
3. Fill out your personal information and the password loo356!#wat
4. You should receive an email confirmation code. Type that code in the field provided.

Shipping & Mailing

FedEx
170 University Ave W
Waterloo, ON N2L 3E9

Canada Post
256 King St N #25067
Waterloo, ON N2J 2Z0

Cash Machines

There is an ATM located in the Davis Centre as well as in the Student Life Centre (SLC).

Recommended Places to Eat

Lunches and dinners are not provided. Here are some recommended eateries.

PROOF KITCHEN & LOUNGE
An upscale dining experience coupled with a menu that reflects a dedication to using ingredients with a local and world conscious initiative.
110 Erb St W, Waterloo, ON N2L 1T5
Free dessert when you show your Bridges 2017 name tag

ABE ERB
Brewery, bar & Canadian eatery featuring modern grub, a late-night menu & weekly live music.
15 King St S, Waterloo, ON N2J 1N9
15% off when you show your Bridges 2017 name tag

SOLÉ
Mediterranean cuisine complimented with an extensive wine list.
83 Erb St W, Waterloo, ON N2L 6C2
10% off when you show your Bridges 2017 name tag

AUNTY'S KITCHEN
Casual Pakistani fusion cuisine with a kick!
160 University Ave W, Waterloo, ON N2L 3E9
10% off when you show your Bridges 2017 name tag

MEL'S DINER
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ALMADINA WOODSTONE OVEN & GRILL
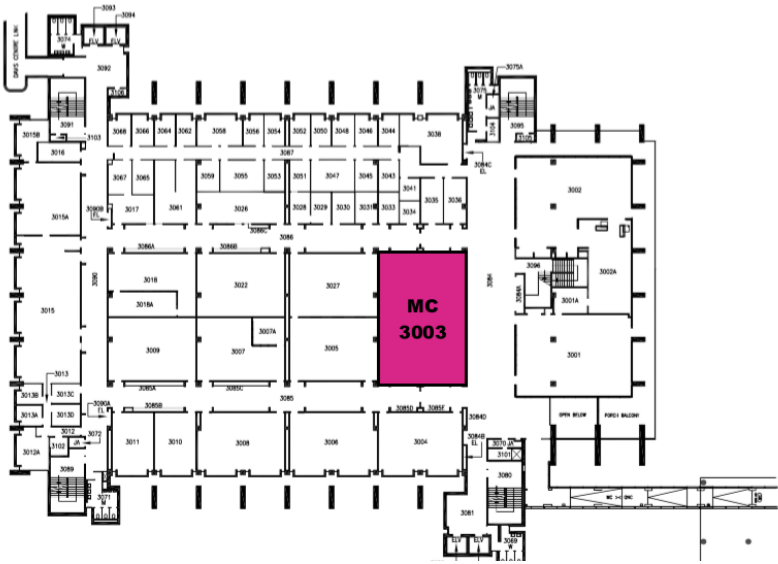Experience the taste of Gourmet Middle Eastern cuisine inspired by the flavours of Egypt.
330 The Boardwalk #2, Waterloo, ON N2J 3Z4
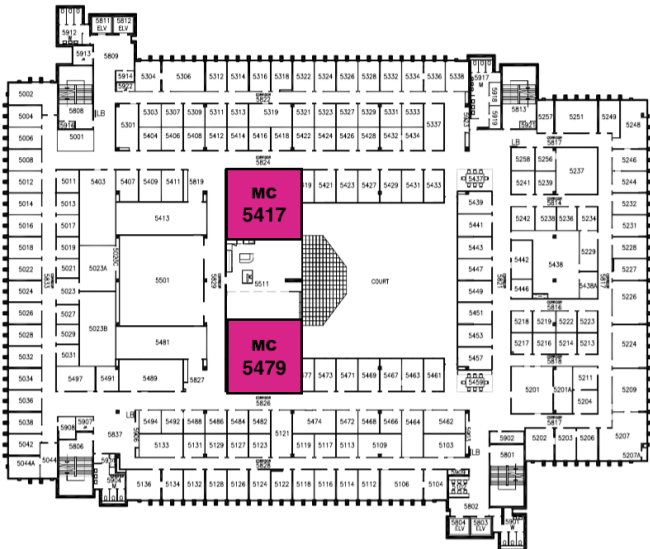10% off when you show your Bridges 2017 name tag

Maps

Mathematics and Computer floor plans

MC 3rd floor

MC 5th floor

Maps
Campus map

1. Ron Eydt Village (REV)
2. Mathematics & Computing (MC)
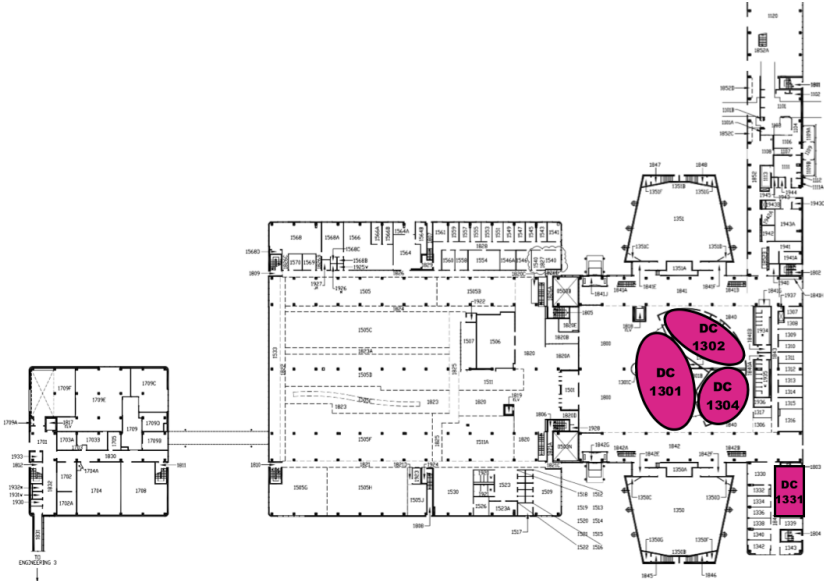3. Mathematics 3 (M3)
4. Davis Centre (DC)

5. Hagey Hall - Humanities Theatre (HH)
6. Federation Hall (Fed Hall)
7. Conrad Grebel University College
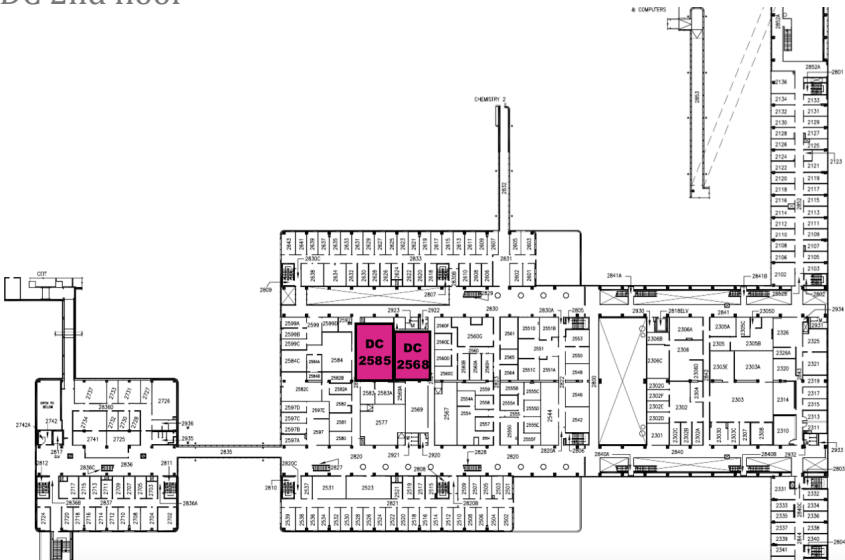8. East Campus Hall - University of Waterloo Art Gallery (ECH)

COLUMBIA STREET WEST

RING ROAD

PHILIP STREET

6
3
2
4
8
5

EC3 EC1 EC5 EC2 EC4

R N L
AHS BMH BMH LHI ERC CSB COM
GSC
M M3 M3
PAC
SLC SLC MC MC DC DC
QNC C2 E5 E5 E7 ECH
B2 ESC KIT E6
STC STC B1 E3 E7
PHY
STJ NH E2
LIB
NH LIB RCH RCH CPH
ML RCH GH
ML DWE
AL
EV3 AL WILMONT COURT
EV1 SCH SCH
EV2 EV1 TC UWP
EV3 EV2 HH UWP
PAS HH A
WATERLOO COURT
H C

LAUREL CREEK
RING ROAD
RING ROAD
SEAGRAM
UNIVERSITY SHOPS PLAZA

Maps

Davis Centre floor plans

DC 1st floor

DC 2nd floor

Notes

Notes

Notes