## SCHEDULE FOR THE BRIDGES 2012 CONFERENCE

## SESSION

## WEDNESDAY JULY 25, 2012

| Kaplan Concert Hall |  |  | Morning 9:30am - 11:30am Chair: Carlo H. Séquin |  |
| :--- | :--- | :--- | :--- | :--- |
| 25 AM 1 | 1 | $9: 30$ |  | Welcoming Remarks <br> Bob Bosch, Craig Kaplan, George Hart, Doug McKenna, James Paulsen, Reza Sarhangi |
| 25 AM 1 | 2 | $10: 00$ | PLEN | Science, Art, Beauty, the Meaning of Life, and the James Webb Telescope <br> John Mather |
| 25 AM 1 | 3 | $10: 45$ | PLEN | Celebrating Mathematics in Stone and Bronze: Umbilic Torus NC vs SC <br> Helaman Ferguson and Claire Ferguson |
| 25 AM 1 | 4 | $11: 30$ |  | Opening of the Art Exhibition and Reception supported by JMA and T\&F <br> Host: Craig Kaplan |

Lunch Break 12:30pm - 2:30pm

| Kaplan Concert Hall |  |  | Afternoon 2:30pm - 4:00pm CESSION I-2 Chair: Craig Kaplan |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 25 PM 2 | 1 | $2: 30$ | REG | Circle patterns in Gothic Architecture <br> Tiffany C. Inglis and Craig S. Kaplan |
| 25 PM 2 | 2 | $3: 00$ | REG | Sinuous Meander Patterns in Natural Coordinates <br> David Chappell |
| 25 PM 2 | 3 | $3: 30$ | REG | Patterned Triply Periodic Polyhedra <br> Douglas Dunham |


| CA 3080 | Afternoon 2:30pm - 4:00pm Chair: Kenneth Brecher |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 25 PM 3 | 1 | $2: 30$ | SHRT | Meta-Vermeer: A Topological Reinterpretation of a Masterpiece <br> Silvia De Toffoli and Yasuhiro Sakamoto |
| 25 PM 3 | 2 | $2: 45$ | SHRT | Mathematical Sequential Art <br> Susan Happersett |
| 25 PM 3 | 3 | $3: 00$ | SHRT | Fisheye View of Tessellations <br> Radmila Sazdanovic |


| 25 PM 3 | 4 | $3: 15$ | SHRT | Harmonic Perspective <br> C. J. Fearnley and Jeannie Moberly |
| :--- | :--- | :--- | :--- | :--- |
| 25 PM 3 | 5 | $3: 30$ | SHRT | Domes, Zomes, and Drop City <br> Paul Hildebrandt and Clark Richert |
| 25 PM 3 | 6 | $3: 45$ | SHRT | The Mazzocchio in Perspective <br> Kenneth Brecher |


| CA 2032 |  | Afternoon 2:30pm - 4:00pm SESSION I-4 $\quad$ Chair: Brian Evans |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 25 PM 4 | 1 | $2: 30$ | SHRT | Diptych View on The Spiral <br> Francoise Beck-Pieterhons and Jacques Beck |
| 25 PM 4 | 2 | $2: 45$ | SHRT | Point Symmetry Patterns on a Regular Hexagonal Tessellation <br> David Reimann |
| 25 PM 4 | 3 | $3: 00$ | SHRT | Geometry and Art with a Circle Cutter <br> Roberta La Haye |
| 25 PM 4 | 4 | $3: 15$ | SHRT | Amazing Labyrinths, Further Developments III <br> Samuel Verbiese |
| 25 PM 4 | 5 | $3: 30$ | SHRT | Spelunking Adventure III: Close-Pack and Space-Fill Octahedral Domains <br> Curtis Palmer |
| 25 PM 4 | 6 | $3: 45$ | SHRT | To Trace a Creative Thought <br> Brian Evans |


| CA 3003 |  |  | Afternoon 2:30pm - 4:00pm | SESSION I-5 |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 25 PM 5 | 1 | $2: 30$ | WORK | Combinatorial Choreography <br> Tom Verhoeff |  |

## Coffee Break 4:00-4:30

| Kaplan Hall |  | REG | Afternoon 4:30pm - 6:30pm <br> 25 PM 6 <br> Broadening the Palette for Bobbin Lace: A Combinatorial Approach <br> Veronika Irvine |  |
| :--- | :--- | :--- | :--- | :--- |
| 25 PM 6 | 2 | $5: 00$ | REG | Geometry and Computation of Houndstooth (Pied-de-poule) <br> Loe M. G. Feijs |
| 25 PM 6 | 3 | $5: 30$ | REG | Weaving Symmetry of the Philippine Northern Kankana-ey <br> Nathaniel A. Baylas IV, Teofina A. Rapanut, Ma. Louise Antonette N. De las Pe~nas |
| 25 PM 6 | 4 | $6: 00$ | REG | The Old Art of Rope Work and Fourier Decomposition <br> Nils Kr. Rossing |


| CA 3080 |  |  | REG | Afternoon 4:30pm - 6:30pmMath in Poetry: Half of a Course <br> Marion Cohen |
| :--- | :--- | :--- | :--- | :--- |
| 25 PM 7 | 1 | $4: 30$ | SESSION I-7 |  |
| 25 PM 7 | 2 | $5: 00$ | REG | Art of p: Mathematical History and Literary Inspiration <br> Tatiana Bonch-Osmolovskaya |
| 25 PM 7 | 3 | $5: 30$ | SHRT | Hierarchical Organization in Writing, Poetry, and Mathematics <br> Russell Jay Hendel |
| 25 PM 7 | 4 | $5: 45$ | SHRT | Tune and Rhyme: Translation Symmetry at Work <br> Alice Major |
| 25 PM 7 | 5 | $6: 00$ | REG | Mathematical Pattern Poetry <br> Sarah Glaz |


| CA 2032 |  | Afternoon 4:30pm - 6:30pm Chair: Merrill Lessley |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 25 PM 8 | 1 | $4: 30$ | SHRT | Digital Sangaku <br> Jean Constant |
| 25 PM 8 | 2 | $4: 45$ | SHRT | Tiling and Weaving with Permutation Functions <br> Robert Hanson |
| 25 PM 8 | 3 | $5: 00$ | SHRT | Optical Minimal Art <br> Hans Kuiper |
| 25 PM 8 | 4 | $5: 15$ | SHRT | The Evolution of An Idea Inspired by 70 <br> Charlene Morrow |
| 25 PM 8 | 5 | $5: 30$ | SHRT | Beaded Realization of Canonical P, D, and G Triply Periodic Minimal Surfaces <br> Chern Chuang, Bih-Yaw Jin, Wei-Chi Wei, Chia-Chin Tsoo |
| 25 PM 8 | 6 | $5: 45$ | SHRT | The Art and Mathematics of Tangrams <br> Xiaoxi Tian |
| 25 PM 8 | 7 | $6: 00$ | SHRT | The Seven Principles of Angle Stitching-A Geometrically Based Beading Technique <br> Laura Shea |
| 25 PM 8 | 8 | $6: 15$ | SHRT | Projecting Mathematical Curves with Laser Light <br> Merrill Lessley and Paul Beale |


| CA 3003 | Afternoon 4:30pm - 6:00pm WESSION I-9 |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 25 PM 9 | 1 | $4: 30$ | WORK | Imagining Negative-Dimensional Space <br> Luke Wolcott and Elizabeth McTernan |

## Bridges 2012 Public Lecture

## July 25th, 8:30pm <br> Kaplan Concert Hall

PICASSO, SPACE, TIME, GUERNICA
This exciting public lecture will be given by Javier Barrallo, Professor of Mathematics at The University of the Basque Country in San Sebastián, Spain.

THURSDAY JULY 26, 2012

| Kaplan Concert Hall |  |  | Morning 9:30am - 11:00am SESSION II-1 $\quad$ Chair: Henry Segerman |  |
| :--- | :--- | :--- | :--- | :--- |
| 26 AM 1 | 1 | $9: 30$ | REG | From M"obius Bands to Klein-Knottles <br> Carlo H. Séquin |
| 26 AM 1 | 2 | $10: 00$ | REG | Polyhedra on an Equilateral Hyperboloid <br> Dirk Huylebrouck |
| 26 AM 1 | 3 | $10: 30$ | REG | Sculptures in S3 <br> Saul Schleimer and Henry Segerman |


| CA 3080 |  |  | Morning 9:30pm - 11:00am Chair: Robert J. Krawczyk |  |
| :--- | :--- | :--- | :--- | :--- |
| 26 AM 2 | 1 | $9: 30$ | SHRT | Extension of Neo-Riemannian PLR-group to Seventh Chords <br> Boris Kerkez |
| 26 AM 2 | 2 | $9: 45$ | SHRT | Music Synthesis Based on Nonlinear Dynamics <br> Maximos A. Kaliakatsos-Papakostas, Andreas Floros, Michael N. Vrahatis |
| 26 AM 2 | 3 | $10: 00$ | SHRT | A Non-Pythagorean Musical Scale Based on Logarithms <br> Robert Schneider |
| 26 AM 2 | 4 | $10: 15$ | SHRT | Balanc,o: The Contour of Relative Offbeatness <br> Mehmet Vurkac |
| 26 AM 2 | 5 | $10: 30$ | SHRT | Mathematics in the World of Dance <br> Katarzyna Wasilewska |
| 26 AM 2 | 6 | $10: 45$ | SHRT | Exploring the Visualization of Music <br> Robert J. Krawczyk |


| CA 3003 |  |  |  | Morning 9:30pm - 11:00pm | SESSION II-3 | Workshop |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 26 AM 3 | 1 | 9:30 | WORK | A Workshop on Making Modified Truncated Icosahedra Using 4D Frame Park, Ho-Gul and Taeyoung Choi |  |  |


| CA 4030 Computer Lab | Morning 9:30am - 11:00am Workshop |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 26 AM 4 | 1 | $9: 30$ | WORK | Mathematical Synthesis and Making of Rope Mats and Rosettes <br> Nils Kr. Rossing |

## Coffee Break 11:00-11:30am

Kaplan Concert Hall

| 26 AM 5 | 1 | $11: 30$ | PLEN |  |
| :--- | :--- | :--- | :--- | :--- |

Morning 11:30am-12:30pm
SESSION II-5
Chair: Doug McKenna
Sculpture Inspired by Connectivity in Nature
William Duffy

## Lunch Break 12:30pm - 2:30pm

| Kaplan Concert Hall |  |  | Afternoon 2:30pm - 4:00pm | RES |
| :--- | :--- | :--- | :--- | :--- |
| 26 PM 6 | 1 | $2: 30$ | REG | My Parade of Algorithmic Mathematical Art <br> Greg M. Frederickson |
| 26 PM 6 | 2 | $3: 00$ | REG | An Algorithm for Creating Geometric Dissection Puzzles <br> Yahan Zhou and Rui Wang |
| 26 PM 6 | 3 | $3: 30$ | REG | Bringing M. C. Escher's Planaria to Life <br> George Hart |


| CA 3080 |  |  | Afternoon 2:30pm - 4:00pm Chair: Manil Suri |  |
| :--- | :--- | :--- | :--- | :--- |
| 26 PM 7 | 1 | $2: 30$ | REG | Never-ending Storytelling with Discrete-Time Markov Processes <br> Yutu Liu, Ergun Akleman, Jianer Chen |
| 26 PM 7 | 2 | $3: 00$ | SHRT | The Creative Process: Risk-taking in an Interdisciplinary Honors Course <br> Heather Pinson and Monica VanDieren |
| 26 PM 7 | 3 | $3: 15$ | SHRT | Training Teachers after Bridges <br> M. G. Margues and M. Pires |
| 26 PM 7 | 4 | $3: 30$ | SHRT | The "Golden Canon" of Book-Page Design: A Visual Presentation Using Geometer's Sketchpad <br> Stanley M. Max |
| 26 PM 7 | 5 | $3: 45$ | SHRT | On the Geometry of Metafiction <br> Manil Suri |


| CA 3003 | Afternoon 2:30pm - 4:00pm Workshop |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 26 PM 8 | 1 | $2: 30$ | WORK | Musical Composition Without Standard Musical Knowledge <br> Ana Pereira do Vale |


| CA 4030 Computer Lab | Afternoon 2:30pm - 4:00pm Workshop |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 26 PM 9 | 1 | $2: 30$ | WORK | Using Technology to Explore the Geometry of Navajo Weavings <br> Mary Kay Kirchner and Reza Sarhangi |


| Kaplan Hall |  |  | Afternoon 4:30pm -6:30pm $\quad$ SESSION II-10 $\quad$ Chair: James Mai |  |
| :--- | :--- | :--- | :--- | :--- |
| 26 PM 10 | 1 | $4: 30$ | REG | The Experience Workshop MathArt Movement: Experience-centered Education of ... <br> Kristóf Fenyvesi |
| 26 PM 10 | 2 | $5: 00$ | REG | Mohr or Mascheroni? <br> Elaine Ellison |
| 26 PM 10 | 3 | $5: 30$ | REG | Playing with the Platonics: A New Class of Polyhedra <br> Walt van Ballegooijen |
| 26 PM 10 | 4 | $6: 00$ | REG | Juan Gris'Compositional Symmetry Transformations <br> James Mai |


| CA 3080 |  | Afternoon 4:30pm - 6:30pm Chair: Garry Greenfield |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 26 PM 11 | 1 | $4: 30$ | REG | Self Similar Patterns <br> Stanley Spencer |
| 26 PM 11 | 2 | $5: 00$ | REG | Twisted D-Forms: Design and Construction of D-Forms with Twisted Prismatic Handles ... <br> Qing Xing, Gabriel Esquivel, Ergun Akleman |
| 26 PM 11 | 3 | $5: 30$ | REG | Tiles and Patterns of a Field: From Byzantine Churches to User Interface Design <br> Asaf Degani, Ron Asherov, Peter J. Lu |
| 26 PM 11 | 4 | $6: 00$ | REG | Stigmmetry Prints from Patterns of Circles <br> Garry Greenfield |


| CA 2032 |  | Afternoon 4:30pm - 6:30pm $\quad$ SESSION II-12 $\quad$ Chair: Tatyana Sorokina |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 26 PM 12 | 1 | $4: 30$ | SHRT | Structural Qualities and Serial Construction of Tournament Braids <br> D. Jacob Wildstrom |
| 26 PM 12 | 2 | $4: 45$ | SHRT | Using Star Polygons to Understand Cyclic Group Structure <br> Sandy Spitzer |
| 26 PM 12 | 3 | $5: 00$ | SHRT | Analytical Calculation of Geodesic Lengths and Angle Measures on Sphere Tiling ... <br> Kyongil Yoon |
| 26 PM 12 | 4 | $5: 15$ | SHRT | Crystallizing Topology in Molecular Visualizations <br> T. Hunter, K. Marineli, D. Marsh, T. J. Peters |
| 26 PM 12 | 5 | $5: 30$ | SHRT | A Novel Geometric Pattern Extraction by Means of a Level-Set Method <br> Afshin Asefpour Vakilian and Maryam Rahnemoonfar |
| 26 PM 14 | 6 | $5: 45$ | SHRT | The Immersive Bridge Between Math and Art <br> John Miller |
| 26 PM 14 | 7 | $6: 00$ | SHRT | Symmetry and Bivariate Splines <br> Tatyana Sorokina |


| CA 4030 Computer Lab |  |  | Afternoon 4:30pm - 6:00pm Workshop |  |
| :--- | :--- | :--- | :--- | :--- |
| 26 PM 13 | 1 | $4: 30$ | WORK | Mathematical Eyes on Figure Skating <br> Diana Cheng, Tanya Berezovski, Cherie Farrington |

## Journal of Mathematics and the Arts Editorial Board Meeting <br> July 26, 2012 <br> 7:00 PM <br> Place: To be Announced <br> By invitation - Craig Kaplan

## Planetarium Show and Telescope Viewing

Thursday, July 26th, 8:00 pm, 8:40 pm, 9:20 pm Watson-King Planetarium, Smith Hall Rm. 521

## NATURE BY NUMBERS

A meditative exploration of the way in which our understanding of nature has progressed hand-in-hand with understanding of number. Three shows, each followed by outdoor telescope viewing (weather permitting) Presented by Towson University faculty members James Overduin and Alex Storrs

## FRIDAY JULY 27, 2012

## Bridges 2012 Excursion Day

A Day in Baltimore: Art, History, and the Chesapeake Bay
A Lecture by William Noel, Curator of Manuscripts and Rare Book at the Walters Art MuseumDirector of the Archimedes Palimpsest Project, Coauthor of The Archimedes Codex

## SATURDAY JULY 28, 2012

| Kaplan Concert Hall |  |  | Morning 9:30am - 11:00am Chair: Tom Verhoeff |  |
| :--- | :--- | :--- | :--- | :--- |
| 28 AM 1 | 1 | $9: 30$ | REG | Two-color Fractal Tilings <br> Robert Fathauer |
| 28 AM 1 | 2 | $10: 00$ | REG | The Mathematical Art of Juggling: Using Mathematics to Predict, Describe and Create <br> Mike Naylor |
| 28 AM 1 | 3 | $10: 30$ | REG | Mitered Fractal Trees: Constructions and Properties <br> Tom Verhoeff and Koos Verhoeff |


| CA 3080 |  | Morning 9:30am - 11:00am $\quad$ SESSION III-2 $\quad$ Chair: B. Lynn Bodner |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 28 AM 2 | 1 | $9: 30$ | REG | Polyhedral Modularity in a Special Class of Decagram Based Interlocking Star Polygons <br> Reza Sarhangi |
| 28 AM 2 | 2 | $10: 00$ | REG | Simple Rules for Incorporating Design Art into Penrose and Fractal Tiles <br> San Le |
| 28 AM 2 | 3 | $10: 30$ | REG | Ihe Topkapi Scroll's Thirteen-Pointed Star Polygon Design <br> B. Lynn Bodner |


| CA 2032 |  | Morning 9:30am - 11:00am Chair: Kerry Mitchell |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 28 AM 3 | 1 | $9: 30$ | SHRT | Escher Unraveled: Using Artwork to Investigate Transformations <br> Ming Tomayko, Sandy Spitzer, Linda Cooper |
| 28 AM 3 | 2 | $9: 45$ | SHRT | From Two Dimensions to Four-and Back Again <br> Susan McBurney |
| 28 AM 3 | 3 | $10: 00$ | SHRT | Dune Surfaces: A Spatial Visualization Technique for Medial Axes in the Plane or on the Sphere <br> Peter Calvache |
| 28 AM 3 | 4 | $10: 15$ | SHRT | Images and Illusions from Orthogonal Pairs of Ellipses <br> Hartmut F. W. Höft |
| 28 AM 3 | 5 | $10: 30$ | SHRT | The Mathematics behind Anamorphic Art <br> Kimberly Rausch |
| 28 AM 3 | 6 | $10: 45$ | SHRT | Fun with Chaotic Orbits in the Mandelbrot Set <br> Kerry Mitchell |


| CA 3003 | Morning 9:30am - 11:00am WOM SESSION III-4 $\quad$ Workshop |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 28 AM 4 | 1 | $9: 30$ | WORK | Exploring Braids through Dance: The "Waves of Tory" Problem <br> Andrea Hawksley |


| Kaplan Concert Hall |  |  | Morning 11:30am - 12:30pm $\quad$ SESSION III-5 $\quad$ Chair: George Hart |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 28 AM 5 | 1 | $11: 30$ | PLEN | Developing Mathematical Tools to Investigate Art <br> Ingrid Daubechies |

## Lunch Break 12:30pm - 2:30pm

| Kaplan Concert Hall |  |  | Afternoon 2:00pm - 3:30pm SESSION III-6 Family Day Chair: Kristóf Fenyvesi |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 28 PM 6 | 1 | $2: 00$ | FD | Bridges 2010 Short Movie Festival |
|  |  |  | Coordinators: Amy and Nathan Selikoff |  |


| CA 3003 | Afternoon 2:00pm - 3:30pm SESSION III-7 $\quad$ Workshop |  |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 28 PM 7 | 1 | $2: 00$ | WORK | Teaching Temari: Geometrically Embroidered Spheres in the Classroom <br> Carolyn Yackel |


| CA 3005 |  |  |  | Afternoon 2:00pm - 3:30pm | SESSION III-8 | Workshop |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 28 PM 8 | 1 | 2:00 | WORK | Let's Make a $\left(3^{6}\right)_{D}\left(3^{6}\right)_{L}$ Chiral Tessellation Dance Joseph D. Clinton |  |  |

## Coffee Break 3:30pm - 4:00pm

| Kaplan Concert Hall |  |  |  | Afternoon 4:00pm - 7:30pm | SESSION III-9 | Family Day | Chair: Kristóf Fenyvesi |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 28 PM 9 | 1 | 4:00 | FD | Bridges 2012 Experimental Theater Organizer: Steve Abbott |  |  |  |
|  |  |  |  |  |  |  |  |
| 28 PM 9 | 2 | 5:30 | FD |  |  |  |  |
|  |  |  |  | Brid | 12 Mathemat rdinator: Sa | Poetry Day Glaz |  |


| CA 3003 |  |  |  | Afternoon 4:00pm - 7:00pm | SESSION III-10 | Workshop |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 28 PM 10 | 1 | 4:00 | WORK | Creating Non-Systematic Islamic Geometric Patterns with Complex Combinations of Star Forms Jay Bonner |  |  |
| 28 PM 10 | 2 | 5:30 | WORK | A Workshop in the Persian Art of Tazhib Mojgan Lisar |  |  |
| CA 3005 |  |  |  | Afternoon 4:00pm - 7:00pm | SESSION III-11 | Workshop |
| 28 PM 10 | 1 | 4:00 | WORK | Kolam Workshop <br> Shanthi Chandrasekar |  |  |
| 28 PM 11 | 2 | 5:30 | WORK | Bead Crochet Bracelets: What Would Escher Do? Ellie Baker and Susan Goldstine |  |  |

## Dinner Break 7:00pm - 8:30pm

## Bridges 2012 Mime-Matics Night

> July 28th, 8:30pm Kaplan Concert Hall

Tim and Tanya Chartier's mime combines masks, puppetry, and classical mime illusions into a distinctive style that they have performed throughout the United States and in national and international settings.

The Chartiers have trained at Le Centre du Silence mime school, the Dell'Arte School of International Physical Theater and with the world-renowned mime artist Marcel Marceau.

## INFORMAL MUSIC EVENT

Coordinator: Vi Hart
July 28th, 10:00pm
Kaplan Concert Hall
Music is always a part of every Bridges conference. As one can see from the titles of the pervious proceedings books there are always a large number of contributed sessions given over to the intricacies of music, musical styles, and rhythm with mathematics. The conference participants who are music performers, present a night of music and educate the audience about their new findings in performing music and its connections with mathematics.

| Kaplan Concert Hall |  |  | Morning 9:30am - 11:00am Chair: Bob Bosch |  |  |
| :--- | :--- | :--- | :--- | :--- | :---: |
| 29 AM 1 | 1 | $9: 30$ | PLEN | The Color Symmetries of the Solstices: Ritual Sandals from the Prehistoric American Southwest <br> Dorothy Washburn and Donald Crowe |  |
| 29 AM 1 | 2 | $10: 15$ | PLEN | Commissioning a Bridge <br> Brent Collins |  |
| Coffee Break 11:00am - 11:30am |  |  |  |  |  |
| 29 AM 1 | 3 | $11: 30$ | PLEN | Splitting Tilings <br> Rinus Roelofs |  |

## Lunch Break 12:30pm - 2:30pm

| Kaplan Concert Hall |  |  | Afternoon 2:30pm - 4:00pm $\quad$ SESSION IV-2 $\quad$ Chair: Jay Bonner |  |
| :--- | :--- | :--- | :--- | :--- |
| 29 PM 2 | 1 | $2: 30$ | REG | A 7-Fold System for Creating Islamic Geometric Patterns Part 1: Historical Antecedents <br> Jay Bonner and Marc Pelletier |
| 29 PM 2 | 2 | $3: 00$ | REG | A 7-Fold System for Creating Islamic Geometric Patterns Part 2: Contemporary Expression <br> Marc Pelletier and Jay Bonner |
| 29 PM 2 | 3 | $3: 30$ | REG | Moorish Fretwork Revisited <br> Paul Tucker |


| CA 3080 |  | Afternoon 2:30pm - 4:00pm Chair: Jay Zimmerman |  |  |
| :--- | :--- | :--- | :--- | :--- |
| 29 PM 3 | 1 | $2: 30$ | SHRT | Generating Chinese Knots from Arbitrary Shapes IV-3 <br> Andrew Lee and Brandon Wang |
| 29 PM 3 | 2 | $2: 45$ | SHRT | Building the Schwarz D-Surface from Paper Tiles <br> Stephen Luecking |
| 29 PM 3 | 3 | $3: 00$ | SHRT | A Topology-Preserving Voxelization Shrinking Algorithm <br> Daniel Whalen |
| 29 PM 3 | 4 | $3: 15$ | SHRT | Exploring the Projective Plane via Variations on the Faceted Octahedron <br> Franklin Gould and S. Louise Gould |
| 29 PM 3 | 5 | $3: 30$ | SHRT | Models of Stellations of the Icosahedron <br> Eve Torrence |
| 29 PM 3 | 6 | $3: 45$ | SHRT | Portraits of Groups in Three Dimensions <br> Jay Zimmerman and Kevin Zimmerman |



| CA 3080 |  |  | Coffee Break 4:00pm -4:30pm |  |
| :--- | :--- | :--- | :--- | :--- |
| 29 PM 6 | 1 | $4: 30$ | REG | Art of the Quantum Moment <br> Robert P. Crease and Alfred S. Goldhaber |
| 29 PM 6 | 2 | $5: 00$ | REG | Knots as Processes in Art and Mathematics <br> Bojana Ginn |
| 29 PM 6 | 3 | $5: 30$ | SHRT | Mathematics and the Ballet Barre <br> Karl Schaffer |
| 29 PM 6 | 4 | $5: 45$ | SHRT | Depression Glass and Nested Symmetry Groups <br> Darrah Chavey |


| CA 2032 |  |  | Afternoon 4:30pm -6:00pm $\quad$ SESSION IV-7 $\quad$ Chair: Paul Gailiunas |  |
| :--- | :--- | :--- | :--- | :--- |
| 29 PM 7 | 1 | $4: 30$ | SHRT | A Mathematica GUI for Generating Conway Tiles <br> Bruce Torrence |
| 29 PM 7 | 2 | $4: 45$ | SHRT | Steps Towards the Analysis of Geometric Decorative Motifs Using Shape-matching Techniques <br> Alice Humphrey and Michael Hann |
| 29 PM 7 | 3 | $5: 00$ | SHRT | Brand Values and the Perception of Symmetry <br> J. L. Marsden and B. G. Thomas |
| 29 PM 7 | 4 | $5: 15$ | SHRT | Rotate, Reflect, Recycle <br> Karl Kattchee |


| 29 PM 7 | 5 | $5: 30$ | SHRT | The MathStudio Pendulum Project <br> Pau Atela |
| :--- | :--- | :--- | :--- | :--- |
| 29 PM 7 | 6 | $5: 45$ | SHRT | Intersecting Helices <br> Paul Gailiunas |


| CA 3005 | 1 | $4: 30$ | WORK | Afternoon 4:30pm -6:00pm <br> Poetry-with-Mathematics Workshop <br> JoAnne Growney |
| :--- | :--- | :--- | :--- | :--- |

## Bridges 2012 Music Night <br> Kaplan Concert Hall

Sunday July 29, 2012

## 8:30 pm

Coordinator: Dmitri Tymoczko

