Preliminary Conference Schedule

DATE/TIME	SESSION OR EVENT			
	South Lobby		**Ballroom 1 & 2**	
SUNDAY OCTOBER 2, 2022				
9:00 am – 5:00 pm	Registration/Information			
6:00 – 7:30 pm	Welcome reception Art Exhibition – Alyn Rockwood			
MONDAY, OCTOBER 3, 2022				
7:30 am – 5:00 pm	Registration/ Information			
8:15 – 8:30		**Welcome**	General Chair David Silva	
8:30 – 9:30 am		**Keynote 1**	Michael Kass	Toward the Open Metaverse
9:30 – 10:10		**Invited 1**	Leo Dorst	They Do It with Mirrors - The Essence of PGA
10:10 – 10:30	Networking Break/ Poster Presentations			
10:30 – 11:10 am		**Invited 2**	Dietmar Hildenbrand	Geometric Algebra Computing for Computer Graphics Using GAALOP
11:10 – 11:40			Kai Neumann, Dietmar Hildenbrand, Florian Stock, Christian Steinmetz and Maximilian Michel	GAAlign: Robust Sampling-based Point Cloud Registration using Geometric Algebra
11:40 am – 12:10 pm			Huijing Yao, Stephen Mann and Qinchuan Li	Line--Cyclide Intersection and Colinear Point Quadruples in the Double Conformal Model
12:10 – 12:40 pm			Anna Derevianko and Petr Vašík	On image similarity recognition using Geometric Algebra for Conics
12:40 –2:00 pm	Networking Lunch (lunch provided)			
2:00 – 2:40 pm		**Invited 3**	Nek Valous	Computational image processing workflows using quaternions
2:40 – 3:10 pm			Guilherme Vieira Neto, Marcos Eduardo Valle and Wilder Lopes	Clifford Convolutional Neural Networks for Lymphoblast Image Classification
3:10 – 3:40 pm			Kristina Mullen, Avishek Mukherjee and Khandaker Rahman	Typing Gesture for One-time Authentication Using Smart Wearable
3:40 – 4:00 pm	Networking Break/ Poster Presentations			

4:00 – 4:30 pm			Leo Dorst	Complementary Orientations in Geometric Algebras
4:30 – 5:10 pm		**Invited 4**	Alyn Rockwood	Interpolation and Design: Lessons and Opportunities from CAGD for Geometric Algebra
5:10 – 5:50 pm		**Invited 5**	Werner Benger	Illustrating Geometric Algebra and Differential Geometry in 5D Color Space
5:50 pm			Announcements	
TUESDAY, OCTOBER 4, 2022				
8:00 am – 4:00 pm	Registration/ Information			
8:30 – 9:30 am		**Keynote 2**	David Hestenes	Modeling and Computing with Geometric Algebra (GA)
9:30 – 10:00 am			Garret Sobczyk	Geometric Algebras of Compatible Null Vectors
10:00 – 10:20 am	Networking Break/ Poster Presentations			
10:20 – 10:50 am		**Invited 6**	Andrew J. S. Hamilton	Black Hole Flight Simulation
10:50 –11:30 am		**Invited 7**	Sebastian Xambó-Descamps	Spinning Spinors with Geometric Algebra for One Century and Beyond
11:30 am – 12:00 pm			Ekaterina Filimoshina and Dmitry Shirokov	On some Lie groups in degenerate geometric algebras
12:00 – 12:40 pm		**Invited 8**	G. Stacey Staples	Clifford Algebras & Zeons - Geometry to Combinatorics and Beyond
12:40 – 1:30 pm	Networking Lunch (lunch provided)			
1:30 – 2:00 pm			Sebastian Xambó-Descamps	Geometric Algebra Speaks Quantum Esperanto, I
2:00 – 2:30 pm			Andrew J. S. Hamilton	The Supergeometric Algebra as the Language of Physics
2:30 – 3:10 pm		**Invited 9**	Tristan Müller	Introduction to Quantum Computing
3:10 – 3:40 pm			Jaroslav Hrdina, Dietmar Hildenbrand, Rafael Alves, Ales Navrat, Christian Steinmetz, Carlile Lavor, Petr Vasik and Ivan Eryganov	Quantum Register Algebra: the mathematical language for quantum computing
3:40 – 4:00 pm	Networking Break/ Poster Presentations			
4:00 – 4:30 pm			Jaroslav Hrdina, Rafael Alves, Ales Navrat, Petr Vasik, Dietmar Hildenbrand, Ivan Eryganov, Carlile Lavor and Christian Steinmetz	Quantum Register Algebra: Quantum Circuits

4:30 – 5:10 pm		**Invited 10**	Daniel Apon	The Initial NIST Post-Quantum Cryptography Standards, and What's Next?
5:10 – 5:40 pm			Eric Wieser and Joan Lasenby	Computing with the universal properties of the Clifford algebra and the even subalgebra
6:00 pm			Announcements	
7:00 – 8:30 pm	Award Banquet Dinner			
WEDNESDAY OCTOBER 5, 2022				
8:30 – 9:10 am		**Roundtable**	F.G. Montoya, et al.	Geometric Algebra applied to Power System Engineering
9:10 – 9:40 am			Francisco G. Montoya and Ahmad H. Eid, *A*	Geometric Procedure for Computing Differential Characteristics of Multi-phase Electrical Signals using Geometric Algebra
9:40 – 10:20 am		**Invited 11**	Wilder Lopes	Improving the performance of Adaptive Filters and Neural Networks with Geometric Algebra
10:20 – 10:40 am	Networking Break/ Poster Presentations			
10:40 – 11:10 am			Roman Byrtus and Stanislav Frolík	Notes on forward kinematics of generalised robotic snakes based on compass ruler algebra
11:10 –11:40 am			Julio Zamora, Edgar Macias and Leobardo Campos	Hand-eye calibration using Camera's IMU sensor in QGA
11:40 am – 12:10 pm			Timothy Havel	Line-Bound Vectors, Plane-Bound Bivectors and Tetrahedra in the Conformal Model of Three-Dimensional Space
12:10 pm – 12:40 pm			Vinicius Riter, Rafael Alves and Carlile Lavor	Geometric Algebra and Distance Matrices
12:40 – 2:00 pm	Networking Lunch (lunch provided)			
2:00 – 2:40 pm		**Invited 12**	Joan Lasenby	Improving Matrix Methods with Geometric Algebra
2:40 – 3:10 pm			Alberto Pepe, Joan Lasenby and Pablo Chacon	Geometric Algebra Models of Proteins for Three-Dimensional Structure Prediction
3:10 – 3:40 pm			Eckhard Hitzer	Inner product of two oriented points in conformal geometric algebra
3:40 – 4:00 pm	Networking Break/ Poster Presentations			

4:00 – 4:40 pm		**Invited 13**	Todd Ell	Closing the GA2P: Making geometric algebra a regular expression of aerospace engineering
4:40 – 5:10 pm			Yuhao Teng, Binghuang Pan, Jiyi Zhang, Wen Luo, Zhaoyuan Yu and Linwang Yuan	GA-MCNA: A Geometric Algebra Framework for Mission-Centric Network Analysis
5:10 – 5:40 pm			Melissa Mcleod Price and G Stacey Staples	Binary Linear Codes via Zeon and Sym-Clifford Algebras
5:40 pm			Closing ceremony	