17th BUAP-UAMI-UTRGV-TAMIU Joint International Conference

Hosted by the Department of Mathematics and Physics, Texas A&M International University
Sponsored by the College of Arts and Sciences

November 13–15, 2026 · Pellegrino Hall (PLG), Room 112, Laredo, Texas · Hybrid Mode

Short Program

Schedule at a Glance Pellegrino Hall (PLG), Room 112

Friday, November 13, 2026

8:00 – 8:30 am	Registration and Opening Remarks
8:35 – 11:05 am	Session D1-S1
11:05 – 11:20 am	Coffee Break
11:20 am – 1:00 pm	Session D1-S2
1:00 – 2:00 pm	Lunch Break
2:00 – 3:15 pm	Session D1-S3
3:15 – 3:25 pm	Coffee Break
3:25 – 5:30 pm	Session D1-S4

Saturday, November 14, 2026

8:30 – 8:40 am	Opening Remarks
8:40 – 10:45 am	Session D2-S1
10:45 – 10:55 am	Coffee Break
10:55 am – 12:10 pm	Session D2-S2
12:10 – 1:05 pm	Lunch and Group Photo
1:05 – 3:10 pm	Session D2-S3
3:10 – 3:20 pm	Coffee Break
3:20 – 5:25 pm	Session D2-S4
5:30 – 6:00 pm	Planetarium Show: *Fronteras* (in Spanish), LBV Planetarium

Sunday, November 15, 2026

8:30 – 10:35 am	Session D3-S1
10:35 – 10:45 am	Coffee Break
10:45 am – 1:15 pm	Session D3-S2
1:15 pm	Closing Remarks, Group Photo and Lunch

Online Participation via Microsoft Teams

All sessions on all three days are streamed live through a single Microsoft Teams meeting. Online presenters and attendees may use the same link to join at any time during the conference.

Join: teams.microsoft.com/meet/2255226721660942?p=RvDxXdz9G7HbotXTad
Meeting ID: 225 522 672 166 094 2
Passcode: Gs2aM7m6

Online presenters are kindly asked to join 10 minutes before their session begins to test audio, video and screen sharing.

Schedule of Sessions

Day	Time	Session	Moderator	Code
Fri, Nov 13	08:35–11:05	Applied Mathematics	Nam Nguyen (UTRGV)	D1-S1
Fri, Nov 13	11:20–13:00	Pure Mathematics	Eun Yoon Ann (UTRGV)	D1-S2
Fri, Nov 13	14:00–15:15	Statistics and Applied Probability	Dr. César Contreras (TAMIU)	D1-S3
Fri, Nov 13	15:25–17:30	Analysis, Operator Theory and Numerical Methods	Dr. Azucena Herrera (UTRGV)	D1-S4
Sat, Nov 14	08:40–10:45	Operator Algebras and Real Analysis	Mr. Juan J. Arellano, Jr. (TAMIU)	D2-S1
Sat, Nov 14	10:55–12:10	Applied Mathematics and Math Education	Dr. Mahanthesh Basavarajappa (TAMIU)	D2-S2
Sat, Nov 14	13:05–15:10	Operator Theory and Data Science	Dr. César Contreras (TAMIU)	D2-S3
Sat, Nov 14	15:20–17:25	Applied Mathematics, Statistics and Education	Miguel Contreras Martinez (Laredo College)	D2-S4
Sun, Nov 15	08:30–10:35	Analysis and Probability	Dr. Hongwei Wang (TAMIU)	D3-S1
Sun, Nov 15	10:45–13:15	Applied Mathematics, Statistics, and Applications	Dr. Hongwei Wang (TAMIU)	D3-S2

All sessions are held in Pellegrino Hall (PLG), Room 112, and streamed online. All times are Central Time (UTC-6).

Notes

- Each presentation is 20 minutes followed by 5 minutes of Q&A. (S) denotes a student presenter; † denotes an online presentation.
- All times are Central Time (UTC-6), which is the same clock time in Laredo, Puebla and Mexico City in November.
- Online participants can join all sessions on all three days through the Microsoft Teams meeting shown above. Online presenters are kindly asked to join 10 minutes before their session begins to test audio, video and screen sharing.
- In-person presenters are kindly asked to bring their presentation on a USB drive (PDF or PowerPoint) and load it onto the session computer before their session begins.
- Session moderators will keep each talk within the allotted time so that the program runs on schedule.
- For any questions, please contact the Local Organizing Committee:
  Dr. Mahanthesh Basavarajappa (mbasavarajappa@tamiu.edu)
  Dr. Runchang Lin (rlin@tamiu.edu)
  Dr. Hongwei Wang (hongwei.wang@tamiu.edu).

Day 1: Friday, November 13, 2026

08:00–08:30 Registration and Opening Remarks

D1-S1: Applied Mathematics

08:35–11:05

Moderator: Nam Nguyen (UTRGV)

Time	Presenter (Affiliation)	Title
08:35–09:00	Mike Lindstrom† (UTRGV)	A Delayed, Stochastic Model of Prion Diseases with Interconnectome Protein Transport
09:00–09:25	Omar Sharif (S)† (UTRGV)	Oscillations in neuronal activity: a neuron-centered spatiotemporal model of the Unfolded Protein Response
09:25–09:50	Dambaru Bhatta† (UTRGV)	A Computational Phase-Field Framework for Crack Propagation in Transversely Isotropic Elastic Solids
09:50–10:15	Erika Olivares (S)† (UTRGV)	Semi-analytical methods for FitzHugh–Nagumo reaction–diffusion equation
10:15–10:40	Saugata Ghosh (S)† (UTRGV)	Modeling Crack-Induced Thermoelastic Fields in Transversely Isotropic Strain-Limiting Solids
10:40–11:05	Mahanthesh Basavarajappa (TAMIU)	Onset and Subcritical Behavior of Double-Diffusive Convection in Tridisperse Porous Media

11:05–11:20 Coffee Break

D1-S2: Pure Mathematics

11:20–13:00

Moderator: Eun Yoon Ann (UTRGV)

Time	Presenter (Affiliation)	Title
11:20–11:45	Pavel Ramos Martínez† (UAMI)	Invertibility on weighted vector-valued continuous function algebras
11:45–12:10	Jhonatan Saúl López Beltran (S)† (BUAP)	Investigations into Generalized Integration
12:10–12:35	Josué Ivan Rios Cangas† (UAMI)	C_0-Semigroups Generated by Domain-Multivalued Orthogonal Linear Relations
12:35–13:00	Denisse Amélie Sophie Bernès Carmona (S)† (BUAP)	Completeness of Trigonometric Systems on Arbitrary Frequency Range

13:00–14:00 Lunch Break

D1-S3: Statistics and Applied Probability **14:00–15:15**

Moderator: Dr. César Contreras (TAMIU)

Time	Presenter (Affiliation)	Title
14:00–14:25	Hongwei Wang (TAMIU)	Suppression-Like Effects in Logistic Modeling of STEM Participation: Engagement and Self-Efficacy as Correlated Predictors
14:25–14:50	Mirzobedil Dzhamolzoda (S) (TAMIU)	Socioeconomic Determinants of Health Insurance Coverage and Health Outcomes Across Texas Counties
14:50–15:15	Carlos James Gonzalez (S) (TAMIU)	Actuarial Analysis of Life Insurance Premiums Using Applied Probability and Python

15:15–15:25 Coffee Break

D1-S4: Analysis, Operator Theory and Numerical Methods **15:25–17:30**

Moderator: Dr. Azucena Herrera (UTRGV)

Time	Presenter (Affiliation)	Title
15:25–15:50	Francisco Javier Mendoza Torres† (BUAP)	Generalized Integration and Regular Convergence of Improper Integrals in $\mathbb{R}^2$
15:50–16:15	Alma Yasmin Luciano Gerardo (S)† (BUAP)	Hypercyclicity and d-Hypercyclicity of Tridiagonal Toeplitz Operators
16:15–16:40	Karen Yagdjian† (UTRGV)	Propagation of Dirac spherical waves in the expanding universe
16:40–17:05	Runchang Lin (TAMIU)	Local Convergence for C^0 Interior Penalty Approximation of Biharmonic Problems
17:05–17:30	Vanessa Sperling (S) (TAMIU)	FFNN vs. PINN: Which Neural Network Solves Differential Equations Better?

17:30 End of Day 1

Day 2: Saturday, November 14, 2026

08:30–08:40 Opening Remarks

D2-S1: Operator Algebras and Real Analysis

08:40–10:45

Moderator: Mr. Juan J. Arellano, Jr. (TAMIU)

Time	Presenter (Affiliation)	Title
08:40–09:05	Lourdes Palacios (UAMI)	On right Complemented Algebras and their left Multiplier Algebra
09:05–09:30	Gerardo Alfonso Sánchez Márquez (S) (BUAP)	Examples to illustrate the Peano derivative
09:30–09:55	Víctor Eduardo San Martín Macías (S) (UAMI)	The multiplier algebra on some classes of topological algebras
09:55–10:20	Slavisa Djordjevic (BUAP)	From Approximation Theory to Operator Theory
10:20–10:45	Carlos Signoret (UAMI)	The second dual algebra of certain Topological Algebras

10:45–10:55 Coffee Break

D2-S2: Applied Mathematics and Math Education

10:55–12:10

Moderator: Dr. Mahanthesh Basavarajappa (TAMIU)

Time	Presenter (Affiliation)	Title
10:55–11:20	Xiaohui Wang (UTRGV)	Perception Operators and Response Surfaces: Students' Views of Parental STEM Involvement and Math Intention
11:20–11:45	Zhaosheng Feng (UTRGV)	Parabolic System of Aggregation Formation in Bacterial Colonies
11:45–12:10	Vesselin Vatchev (UTRGV)	Periodic Solutions on the Circle for Shallow-Water Model

12:10–13:05 Lunch and Group Photo

D2-S3: Operator Theory and Data Science — 13:05–15:10

Moderator: Dr. César Contreras (TAMIU)

Time	Presenter (Affiliation)	Title
13:05–13:30	Jasang Yoon (UTRGV)	Two-way connections between 1-variable and 2-variable weighted shifts
13:30–13:55	Jorge Ricardo Bolaños Servín† (UAMI)	G-circulant structure in Quantum Markov Semigroups
13:55–14:20	Ivan Moises Roque Tlatelpa† (UPAEP)	Generalized diagonal of linear relations
14:20–14:45	Tamer Oraby† (UTRGV)	Measurement Error in Machine Learning
14:45–15:10	Anahit Galstyan† (UTRGV)	Semilinear Klein-Gordon equation in space-time of black hole

15:10–15:20 Coffee Break

D2-S4: Applied Mathematics, Statistics and Education — 15:20–17:25

Moderator: Miguel Contreras Martinez (Laredo College)

Time	Presenter (Affiliation)	Title
15:20–15:45	Dacun Li (LC)	Challenges of Teaching Technology at a High School and Solutions
15:45–16:10	Karla Linero-Reyes (S) (TAMIU)	Does Inertia Matter? Onset of Double-Diffusive Convection in a Darcy Porous Medium
16:10–16:35	David Alexandro Figueroa (S) (TAMIU)	A Categorical Data Analysis on College Graduates Participating in the Labor Workforce
16:35–17:00	Michael Edmund Gutierrez (S) (TAMIU)	Relationships Among Web Accessibility, Content Governance, and User Engagement: A Multivariate Statistical Approach
17:00–17:25	Kristel Rochell Herrera (S) (TAMIU)	Applying Linear Discriminant Analysis to Higgs Boson Signal Identification in Simulated Proton-Proton Collisions

17:30–18:00 LBV Planetarium Show: *Fronteras* (Borders)

Description: A journey to discover that boundaries are blurred. Giordano Bruno spoke of infinite worlds, Emmanuel Kant of island universes, and modern physics of the multiverse. We have only one certainty: it is our knowledge that has limits. But the joy we can derive by breaking through our limits in our search for answers, is infinite.

Language: Spanish
Length: 29 minutes
Topics: Astronomy/Cosmology
Fee: FREE for conference attendees
Location: LBV Planetarium, Texas A&M International University

18:00 End of Day 2

Day 3: Sunday, November 15, 2026

D3-S1: Analysis and Probability

08:30–10:35

Moderator: Dr. Hongwei Wang (TAMIU)

Time	Presenter (Affiliation)	Title
08:30–08:55	Enrique Díaz-Ocampo (S)† (UAEM)	The Haseman Boundary Value Problem with Shifts on Pure Cusp Stars
08:55–09:20	Netzahualcóyotl Castañeda-Roldán† (BUAP)	Ultrametrics, weak ultrametrics, and extended ultrametrics
09:20–09:45	John Villavert† (UTRGV)	On Sobolev-type embeddings and supercritical problems
09:45–10:10	Alfredo Reyes Vazquez† (BUAP)	About integration of functions in $\mathbb{R}^2$
10:10–10:35	Mrinal Kanti Roychowdhury† (UTRGV)	Optimal Quantization for Probability Distributions

10:35–10:45 Coffee Break

D3-S2: Applied Mathematics, Statistics, and Applications

10:45–13:15

Moderator: Dr. Hongwei Wang (TAMIU)

Time	Presenter (Affiliation)	Title
10:45–11:10	Eleftherios Gkioulekas (UTRGV)	The hydroxychloroquine controversy for COVID-19: A review of the statistical evidence
11:10–11:35	Hyung Won Kim (UTRGV)	Intuition-Grounded Instruction in Introductory Statistics: Findings from a Pilot Survey of Instructors
11:35–12:00	Erwin Suazo (UTRGV)	On explicit solutions for systems of partial differential equations with variable coefficients through Riccati-type systems
12:00–12:25	Camilo Abarca Estrada (S)† (BUAP)	The region of visibility over the Sun from a given point of the Earth surface and an Integral for determining the radiation emmited
12:25–12:50	Moisés Soto Bajo† (BUAP)	Revisiting Shannon's Information Theory in the Context of Numerical Finite Signals
12:50–13:15	José Daniel Torres Campos (S)† (BUAP)	Some Approximation Results for a Generalized Szász–Mirakyan Operator

13:15 Closing Remarks, Group Photo and Lunch

BUAP: Benemérita Universidad Autónoma de Puebla; UAMI: Universidad Autónoma Metropolitana–Iztapalapa; UAEM: Universidad Autónoma del Estado de Morelos; UPAEP: Universidad Popular Autónoma del Estado de Puebla; UTRGV: The University of Texas Rio Grande Valley; TAMIU: Texas A&M International University; LC: Laredo College.