



SIPAIM 2025 PROGRAM OVERVIEW

	Tuesday, November 18	Wednesday, November 19	Thursday, November 20	Friday, November 21				
08:00		Registration						
08:30	AI for Social Good Pablo Arbeláez (In spanish)	Deep Learning for Segmentation in 3D Slicer Lucia Cubero, Sergio Carreras and Irina Rakotoarisoa	Registration	Registration				
09:00			Keynote 1 Sandra Sanabria PET Imaging in Alzheimer's Disease: Understanding Progression and Supporting the Development of New Therapies	Keynote 2 Neda Jahanshad Integrating neuroimaging data from around the world for large-scale global collaborative studies of brain health and disease	Keynote 4 Antonio Porras and Brooke French A data-driven approach to the management of craniostosis			
09:30		Coffee break	Coffee break	Coffee break				
10:00	Coffee break							
10:30	AI and Health Fabio González (In spanish)	3D Visualization and Printing Primer Darryl Hwang, PhD.	Session 7	Session 8				
11:00			Special (clinical) session		Session 15	Session 16		
11:30	Session 9	Session 10			Session 17	Session 18		
12:00	"Data Sharing Around the World" Panel							
12:30	Touristic trip Catedral de Las Lajas Lunch and transportation provided		Closing and awards					
13:00			Lunch break *		Lunch break *			
13:30			Keynote 3 Diana Mateus Implicit Neural Models for Representing Medical Images from Reconstruction to Shape Analysis					
14:00					Session 1	Session 2	Session 11	Session 12
14:30			Session 3	Session 4	Coffee break and Poster session			
15:00			Coffee break				Session 13	Session 14
15:30	Touristic trip Laguna de la Cocha Dinner and transportation provided		Touristic trip Laguna de la Cocha Dinner and transportation provided					
16:00					Session 5	Session 6		
16:30					Welcome reception		SIPAIM dinner	
17:00								
17:30					SIPAIM dinner			
18:00							SIPAIM dinner	
18:30	SIPAIM dinner							
19:00			SIPAIM dinner					
19:30					SIPAIM dinner			
20:00							SIPAIM dinner	
20:30	SIPAIM dinner							

* Explore local dining option



Pre conference: Tuesday - November 18

Colombia Time



Dr. Pablo Arbeláez
Course: "AI for Social Good" (in spanish)
Chair: to be defined | Room: Paraninfo auditorium



Lucía Cubero, Sergio Carreras and Irina Rakotoarisedy
Course: Deep Learning for Segmentation in 3D Slicer
Chair: to be defined | Room: Javier Fajardo auditorium

8:30

10:00

Coffee break

10:30



Dr. Fabio González
Course: "AI and Health" (in spanish)
Chair: to be defined | Room: Paraninfo auditorium



Dr. Darryl Hwang
Course: 3D Visualization and Printing Primer
Chair: to be defined | Room: Javier Fajardo auditorium

12:00

Panel Discussion: "Data Sharing Around the World"
Chair: Pamela Guevara | Room: Paraninfo auditorium

12:30

Touristic trip
Catedral de Las Lajas
Transportation and lunch provided

19:00

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Wednesday - November 19

Colombia Time

Registration & Opening

8:00



Keynote Speaker: Dr. Sandra Sanabria

Talk: "PET Imaging in Alzheimer's Disease: Understanding Progression and Supporting the Development of New Therapies"

Chair: Jorge Brieva | Room: Paraninfo auditorium

9:00

Coffee break

10:00

Clinical session

Speakers: Dr. Lucia Roa, Dr. Lina Muñoz and Dr. Hernán Ríos

Chair: Eduardo Romero | Room: Paraninfo auditorium

10:30

Lunch break

12:30

Brain Imaging I

Chair: Sandra M. Sanabria | Room: Paraninfo auditorium

[49] White Matter Tract Vulnerability to Amyloid Pathology on the Alzheimer's Disease Continuum *

Presenter: Sophia I. Thomopoulos

[52] MRI-Radiomics Based Retinal Markers to Detect Amyloid Beta

Presenter: Dighvijay Giri

[19] MRI curvelet radiomics to predict tau level burden in Alzheimer's Disease

Presenter: Jully González

[66] DTI versus NODDI White Matter Microstructural Biomarkers of Alzheimer's Disease

Presenter: Kenny Liou

Cardiovascular Signals

Chair: Franco Lepore | Room: Javier Fajardo auditorium

[4] Prediction of Glucose Level Using Temporal and Frequency Parameters of ECG Signal *

Presenter: Ronaldo Rodrigues Soares

[14] Classification of Post Preeclamptic Mexican Women Using ECG and PPG Detrended Fluctuation Analysis: A Pilot Study

Presenter: Gerardo Ortiz Montúfar

[84] ECG-Driven Cardiovascular Risk Prediction

Presenter: Juliana Valentina Castilla Rios

[106] Comparative study of methods for detecting QRS in ECG signals

Presenter: Alexander Cerón Correa

14:00

Brain Imaging II

Chair: Richard Frayne | Room: Paraninfo auditorium

[13] Evaluation of Deep Learning Algorithms to Predict Multiple Dementia-Related Neuropathologies from Brain MRI, Clinical and Genetic Data *

Presenter: Tamoghna Chattopadhyay

[44] Along-Tract Mapping of White Matter Microstructural Abnormalities in Bipolar Disorder using Diffusion MRI *

Presenter: Tamoghna Chattopadhyay

[26] Predicting Longitudinal Cognitive Decline via Multimodal Deep Learning Fusing Brain MRI and Clinical Data

Presenter: Tamoghna Chattopadhyay

[64] Deterministic versus Probabilistic Tractography: Impact on White Matter Bundle Shape *

Presenter: Yuhan Shuai

Cardiovascular Imaging

Chair: Alexander Cerón | Room: Javier Fajardo auditorium

[8] Deep Learning-based Echocardiography Enhancement: Reducing Speckle Noise and Improving Temporal Resolution *

Presenter: Gabriel Carcedo-Rodríguez

[46] Detection of Optimal Echocardiographic Video Segments Using Deep Learning

Presenter: Ismael Pérez

[83] The EchoCardiology open data base EchoUNAL: a benchmarking study for automatic classification of six echocardiographic views

Presenter: Juan David Sarmiento Avila

[101] Evaluation of a novel and simple segmentation uncertainty score in pediatric and neonatal echocardiography

Presenter: Lauren Erdman

15:00

Coffee break

16:00

Body Imaging I

Chair: Jorge Brieva | Room: Paraninfo auditorium

[29] Federated Learning for Organs-at-Risk Segmentation in Prostate Cancer: A Multi-Institutional CT Study

Presenter: Irina Arijohn Rakotoarisedy

[37] Impact of Spatial Normalization on Dose Alignment for Voxel-Based Analysis in Head and Neck Radiotherapy *

Presenter: Lucía Cubero Gutiérrez

[41] A Realistic Synthetic Endoscopy Dataset from CT-Stomachs with Gastric Wall Textures learned from Endoscopy Images

Presenter: Diana Yaquelin Barrero Malagon

[48] Multimodal Radiomic Profiling Can Distinguish AT1- and AT2-Cell of Origin Lung Adenocarcinoma Models

Presenter: Sophia Hai

[51] Segmentation of Pelvic Radiographs After Total Hip Arthroplasty Using U-Net Variants: Towards Morphometric Automation

Presenter: Elina Andrea Huerfano Castro

Learning-based Segmentation

Chair: Ignacio Larrabide | Room: Javier Fajardo auditorium

[21] Convolutional Neural Network Trained with Heatmaps for Segmentation and Measurement of the Femur in Fetal Ultrasound

Presenter: Fernando Arambula

[34] WS-SAM: Segment Anything with Sparse Prompts for Weakly-Supervised Medical Segmentation

Presenter: Tal Shaharabany

[38] Leveraging Uncertainty for Quality Assessment of Total Segmentation Segmentations: A Preliminary Study

Presenter: Sergio Carreras Salinas

[39] Addressing Annotation Scarcity in Hyperspectral Brain Image Segmentation with Unsupervised Domain Adaptation

Presenter: Tim Mach

[73] D3EU-Net: A Diffusion and DeepSeek-aided Dual Encoder-based U-Net Model for Microscopic Medical Image Segmentation

Presenter: Asya Iyanova

[77] FSTS-Net: A Feature-mixing aided Semi-supervised Teacher-Student Network for Polyp Image Segmentation

Presenter: Asya Iyanova

16:30

18:00

19:00

Welcome Reception at V1501 Hotel

* Papers nominated for the SIPAIM 2025 awards.

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Thursday - November 20

Colombia Time

Registration & Opening

8:30



Keynote Speaker: Dr. Neda Jahanshad

Talk: "Integrating neuroimaging data from around the world for large-scale global collaborative studies of brain health and disease"
Chair: Natasha Lepore | Room: Paraninfo auditorium

9:00

Coffee break

10:00

Digital pathology

Chair: Angel Alfonso Cruz Roa | Room: Paraninfo auditorium

Neuroimaging Analysis

Chair: Neda Jahanshad | Room: Javier Fajardo auditorium

10:30

[65] Characterization of complete and incomplete Gastric Intestinal Metaplasia (GIM) by a hamiltonian approach
Presenter: Juan Celis Arambula

[71] Uncertainty Quantification for Metaplasia Detection in Gastrointestinal Histopathology Images
Presenter: Ruben Acosta

[82] CAMIL-A Class Activation Mapping Integrated with MIL-Attention
Presenter: David Aldemar Córdoba Vargas

[87] Automatic Stratification of Gastric Intestinal Metaplasia by a Latent Continuous Representation
Presenter: Fabian Alberto Cano Ramirez

[31] Analysis and Segmentation of Hip Cartilage in MR Arthrography
Presenter: Elina Andrea Huerfano Castro

[35] Does Covert Cerebral Small Vessel Disease Modulate Early Change in Glymphatic Flow from DTI-ALPS?
Presenter: Richard Frayne

[78] Atlas of Cerebellar Connections Based on ROIs and dMRI Tractography
Presenter: Daniela Carrasco

[81] Age-related white matter asymmetry patterns across the lifespan: A diffusion MRI study
Presenter: Catalina Vergara

11:30

Histopathology

Chair: Omar Gutierrez Navarro | Room: Paraninfo auditorium

Generative AI in healthcare

Chair: Manuela Bastidas | Room: Javier Fajardo auditorium

[74] Improving the performance of multimodal large language models on histopathology images classification
Presenter: Jose Sierra Molina

[80] Comparative methods for histology-based prediction of anti-TNF α response in pediatric Crohn's disease
Presenter: Nicholas Denson

[103] Semantic Segmentation of Tissue in Histopathological Breast Cancer Images Using a U-Net
Presenter: Angel Alfonso Cruz Roa

[105] Exploration Of Microscopy Image Super-Resolution Approach For Histopathology Using Deep Learning
Presenter: Angel Alfonso Cruz Roa

[9] Generating diffusion MRI scalar maps from T1-weighted images using Reversible GANs
Presenter: Tamoghna Chattopadhyay

[24] A generative model with domain adversarial training and independent conditional discriminators to predict the development of craniosynostosis
Presenter: Antonio Porras

[62] Visual Explainability of Attention U-Net for Brain Tumor Segmentation in Multicontrast Magnetic Resonance Images
Presenter: Gabriel Guerra Pinto

[12] Using Diffusion Transformers to Generate Synthetic Diffusion Scalar Maps for Data Augmentation
Presenter: Tamoghna Chattopadhyay

12:30

Lunch break

14:00



Keynote Speaker: Dr. Diana Mateus

Talk: "Implicit Neural Models for Representing Medical Images from Reconstruction to Shape Analysis"
Chair: Leticia Rittner | Room: Paraninfo auditorium

15:00

Biomedical Signals and Gait Analysis

Chair: Fernando Arambula | Room: Paraninfo auditorium

Brain Connectivity and Modeling

Chair: Antonio Porras | Room: Javier Fajardo auditorium

[6] A muscle strength monitoring system for the assessment and follow-up of patients with neuromuscular diseases
Presenter: Maria Fernanafa Gomez Cubides

[33] Quantifying the age-anthropometry effect on spatio-temporal gait dynamics
Presenter: Karen Paredes Castro

[55] Calibration of Deterministic Errors in Accelerometer Data of Commercial IMU System
Presenter: Gabriel Ramirez-Larrarte

[98] Classifying early stages of Parkinson's Disease by constructing a temporal latent space
Presenter: Diana Milena Poveda Arias

[32] Structured Artificial Neural Networks for Chronological Brain Age Prediction using Functional Connectivity Matrices
Presenter: Richard Frayne

[68] Brain dynamics at different resolutions of a hierarchical parcellation
Presenter: Pamela Guevara

[72] Age prediction with structural and functional graph-based features using machine learning
Presenter: Bruno Arce

[85] Functional connectivity topology in EEG of Comatose Patients
Presenter: Maria Camila Espinal Ramirez

Coffee break and Poster session

16:00

17:00

Body Imaging II

Chair: Diana Mateus | Room: Paraninfo auditorium

CT Imaging

Chair: Darryl Hwang | Room: Javier Fajardo auditorium

[5] Skin Cancer Detection Using Convolutional Networks and Vision Transformers
Presenter: Davi Israel Abtibol Carvalho

[15] Deep learning for Chagas disease: YOLOv8-based automatic detection of amastigote nests
Presenter: Daniela Guadalupe Sosa Moreno

[23] Pixel-wise Classification of Placenta Multispectral Images using Multilinear Spectral Unmixing and Res-U-Net
Presenter: Omar Gutierrez Navarro

[28] Image Facial Expression Recognition based on Active Muscles and their Notable Triangle Points
Presenter: Edgar Iván Aguilera Hernández

[40] Understanding Effects of Scan Mode, Tilt, and Radiation Dose on CT Radiomic Metrics
Presenter: Dighvijay Giri

[60] Structure-preserving restoration of low-dose CT by means hybrid diffusion-transformer architecture
Presenter: Antonio José Bravo Valero

[63] Lung Nodule-SSM: Self-Supervised Lung Nodule Detection and Classification in Thoracic CT Images
Presenter: Marius Lingurar

[96] Performance comparison of supervised and unsupervised deep learning models for ischemic lesion detection and segmentation in stroke non-contrast CT images
Presenter: Constanza Rodriguez Olguin

18:00

19:00

SIPAIM Dinner

 Papers nominated for the SIPAIM 2025 awards.

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Registration & Opening

8:30

Keynote Speaker: Dr. Antonio Porras and Dr. Brooke French

Talk: "A data-driven approach to the management of craniosynostosis"
Chair: Marius Lingurarau | Room: Paraninfo auditorium

9:00

Coffee break

10:00

Digital and global health

Chair: Lauren Erdman | Room: Paraninfo auditorium

Cardiovascular and Circulatory Analysis

Chair: Nidiyare Hevia-Montiel | Room: Javier Fajardo auditorium

10:30

[42] **Spatiotemporal characterisation of stroke care accessibility and hospital coverage in the Santiago Metropolitan Region**
Presenter: Manuel José Villalobos Cid

[45] **Unsupervised Clustering of Depression Profiles in University Students Using Behavioral and Sociodemographic Features**
Presenter: Arshin Soltan Bayazidi

[47] **DEA-based assessment of technical efficiency of Chilean hospitals before and during COVID-19**
Presenter: Manuel José Villalobos Cid

[95] **Customizing Language Models with Structured Context for Cardiovascular Risk Evaluation**
Presenter: Cristian Camilo Beltrán Velosa

[67] **Non-invasive Blood Glucose Estimation: an Approach Using Multi-Wavelength PPG Signals and Residual Neural Networks**
Presenter: Filipe Augusto de Castro Oliveira

[89] **Radiomic Features Extraction from CMR perfusion imaging to evaluate ischemic damage and ventricular function in coronary artery disease**
Presenter: María Cristina Jara Jiménez

[90] **A Deep-Learning and Bio-inspired Vision Model-Based Approach for Automatic Coronary Arteries Segmentation**
Presenter: Carlos Lopez

[102] **AE-HRS: Autoencoder-Based Health Recommender System for Forecasting Cardiovascular Conditions through Collaborative Filtering**
Presenter: Angel Alfonso Cruz Roa

11:30

Ophthalmic Analysis and Computational Learning

Chair: Angel Alfonso Cruz Roa | Room: Paraninfo auditorium

Body Imaging III

Chair: Darryl Hwang | Room: Javier Fajardo auditorium

[25] **Evaluating Fundus-Specific Foundation Models for Diabetic Macular Edema Detection**
Presenter: Franco Javier Arellano

[27] **Macular Edema Classification using an Evolutionary Binary Regular Expression Strategy**
Presenter: Rafael Alejandro García Ramírez

[57] **FedDAPL: Toward Client-Private Generalization in Federated Learning**
Presenter: Neda Jahanshad

[69] **Towards Individual Channel Classifiers and Ensemble Methods for Enhanced Motor Imagery BCI Performance**
Presenter: Jaime A Riascos-Salas

[30] **Beyond Accuracy: Evaluating Fairness in Deep Learning Models for Chest X-ray Classification** ✳
Presenter: Leticia Lopes Mendes da Silva

[50] **Performance Evaluation of an Algorithm for Respiratory Events Detection**
Presenter: Nataly Rodriguez Atehortua

[94] **Intelligent Cyber-Physical Simulator for Breast Ultrasound Radiology Training**
Presenter: Santiago Prieto Peña

[104] **Comparative study of methods for generating echocardiographic images**
Presenter: Salomon Hernández Velandia

Closing ceremony and Awards

12:30

Lunch break

13:00

**Touristic trip
Laguna de la Cocha
Dinner and transportation provided**

14:30

✳ Papers nominated for the SIPAIM 2025 awards.

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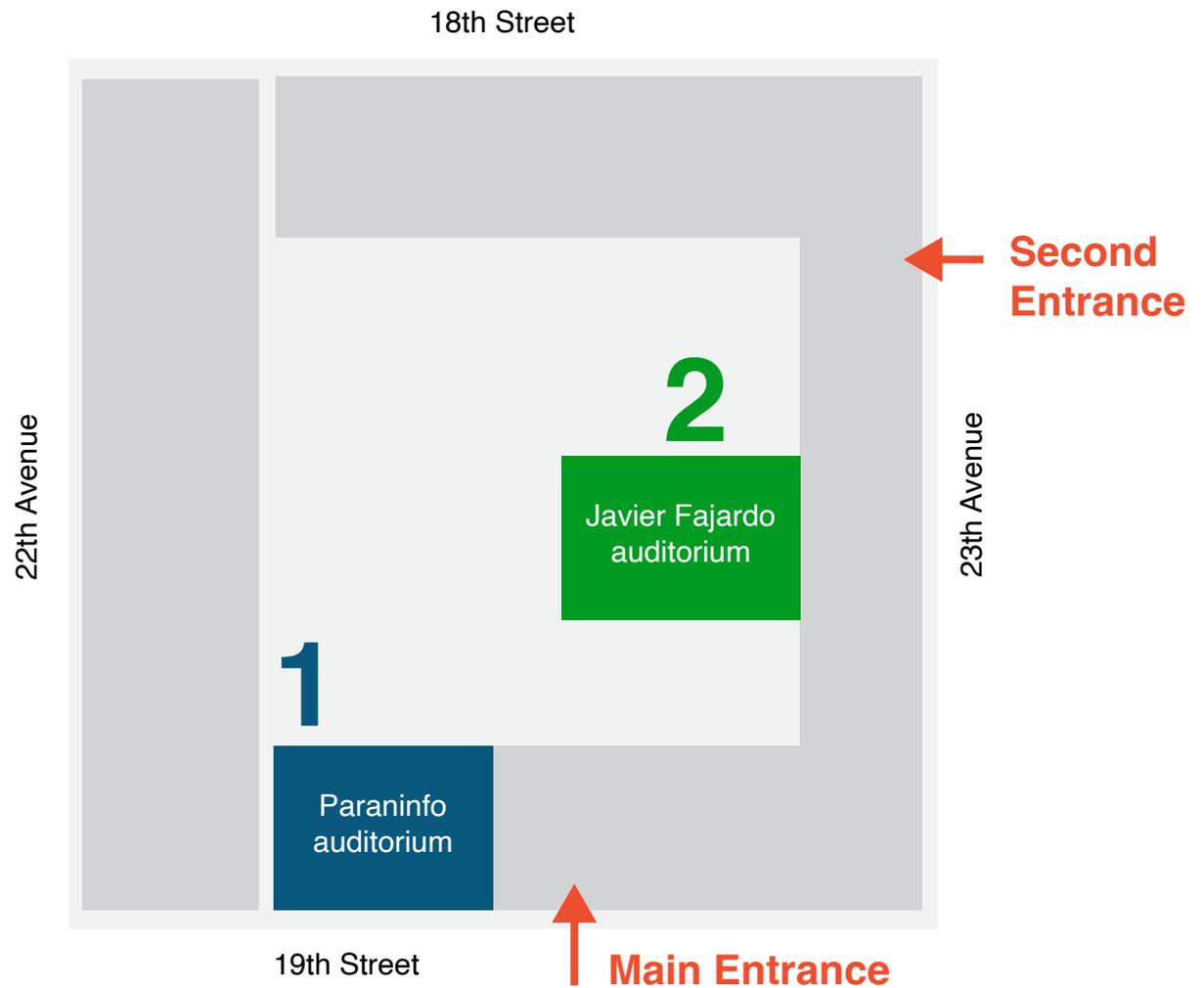


20:30



Conference center University of Nariño Central Campus

- 1 Main auditorium
- 2 Second auditorium



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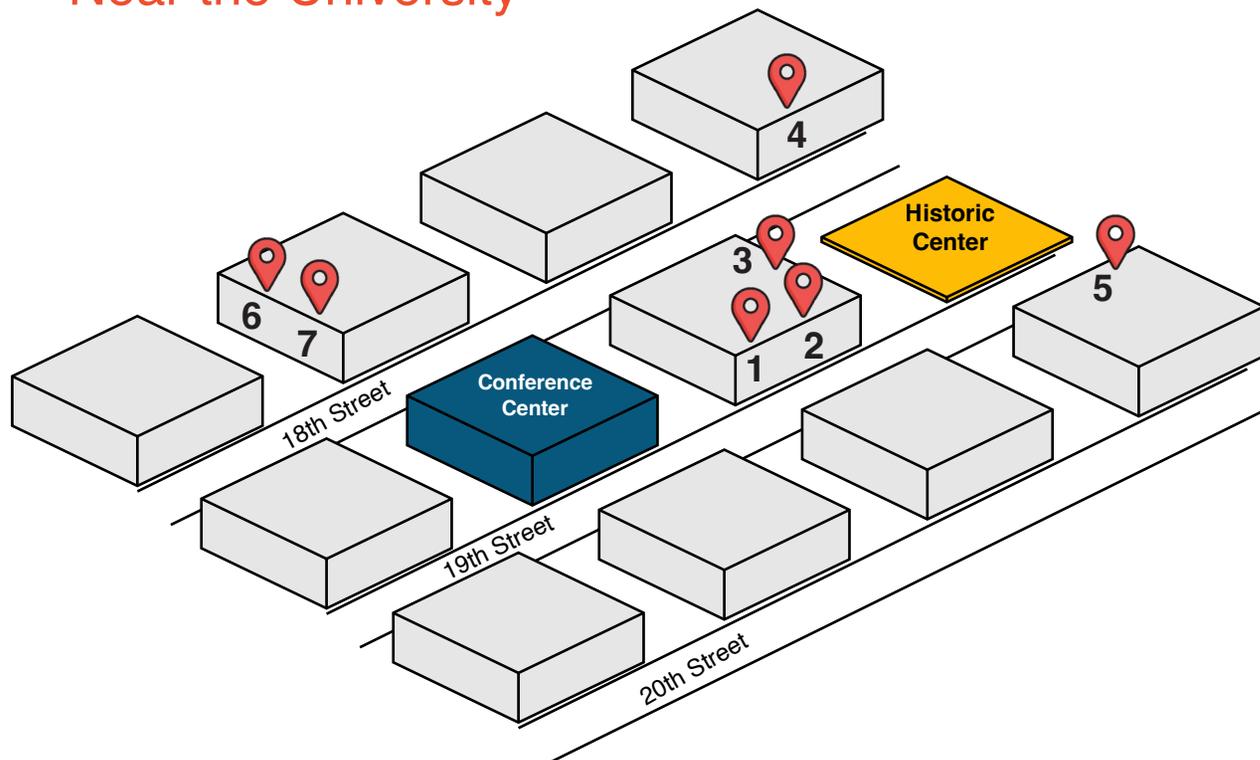
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Recommended Breakfast and Lunch Spots

Near the University



Below are some suggested places where conference attendees can enjoy breakfast or lunch within walking distance of the University of Nariño.

Breakfast options:

1. Star Books
2. Almohabanas de la 17
3. Cafe del Parque
4. Volt Café
5. Guadalquivir Café

Lunch options:

6. Sulerna
7. La Merced

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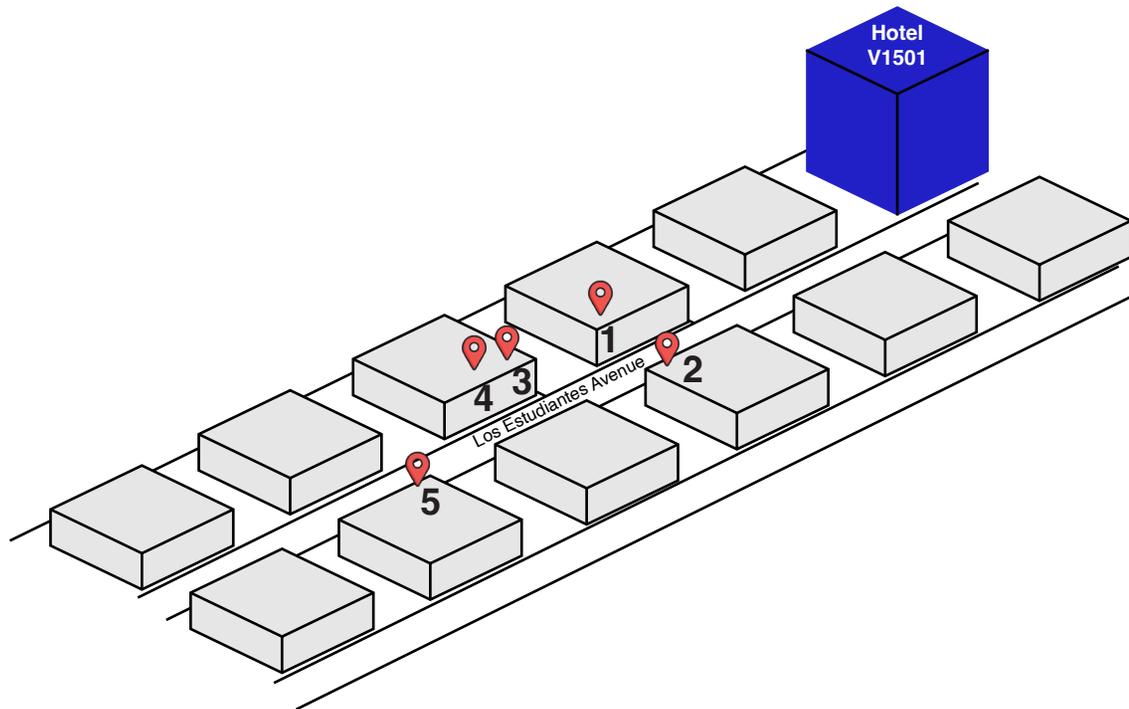
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Recommended Breakfast and Lunch Spots

Near the Hotel V1501



Below are some suggested places where conference attendees can enjoy lunch within walking distance of the Hotel V1501.

Lunch options:

1. Sulerna
2. Cafeto
3. La CATA
4. San Alejo
5. Biela

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