



 **ACCESS**

NAIRR Pilot



NSF ACCESS Regional AI Workshop – SoCal Edition

Empowering Research & Education with Advanced Computing

Ewa Deelman, USC



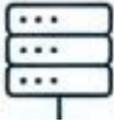
January 22, 2026 | USC Ginsburg Hall

Funded by NSF under
grant #2138286



Welcome to the SoCal AI Community

We are delighted to bring together a diverse group of practitioners from across Southern California.

- ii** **Researchers** pushing the boundaries of scientific discovery.
- rn** **Educators** integrating AI into curriculum and pedagogy.
- G** **Graduate Students** exploring the future of computational science.
-  **Resource Providers** facilitating high-performance computing.

Our Mission:
To strengthen the regional AI network, share best practices, and connect you with the tools and resources needed to advance your work.



The National Ecosystem: ACCESS & NAIRR Pilot



Broad-Spectrum Cyberinfrastructure

- **Focus:** Advancing Science Across All Disciplines (Physics, Bio, SocSci)
- **Resources:** High-Performance Computing (HPC), Cloud, Storage, Networking
- **Key Feature:** **No Cost** to researchers/educators (Grant not required)
- **Mechanism:** Scaled Allocations (Explore, Discover, Accelerate)



NAIRR Pilot

National Artificial Intelligence
Research Resource Pilot

AI Innovation Engine

- **Focus:** Connecting Researchers to AI-Specific Resources
- **Resources:** AI-optimized compute, curated datasets, pre-trained models
- **Partners:** NSF + 10 Federal Agencies + 25 Industry Partners (AWS, NVIDIA, Microsoft)
- **Opportunities:** Start-Up Projects & Deep Partner Access

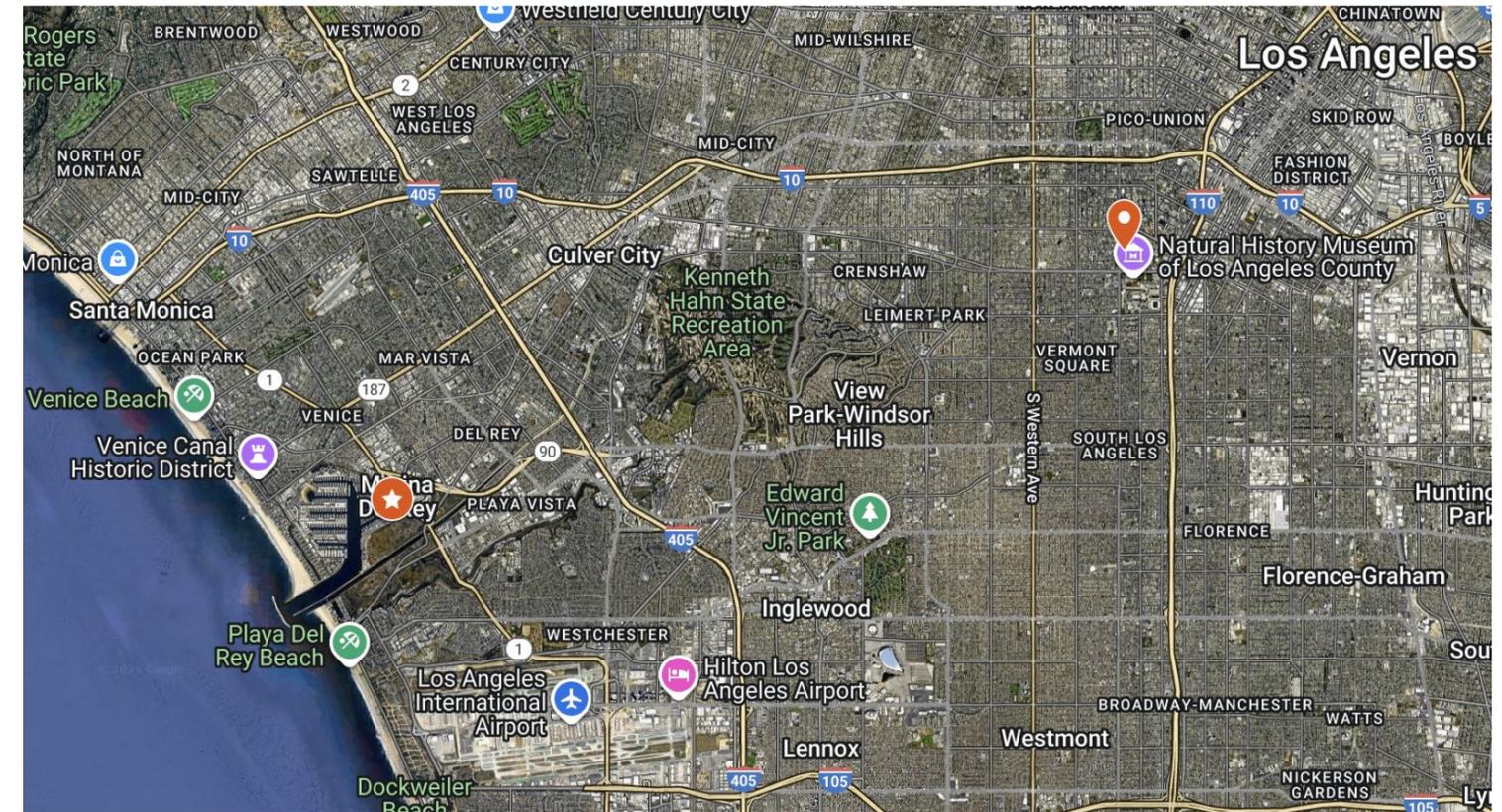
For Researcher, Educators, Graduate Students.

The Intersection: Connected Ecosystem

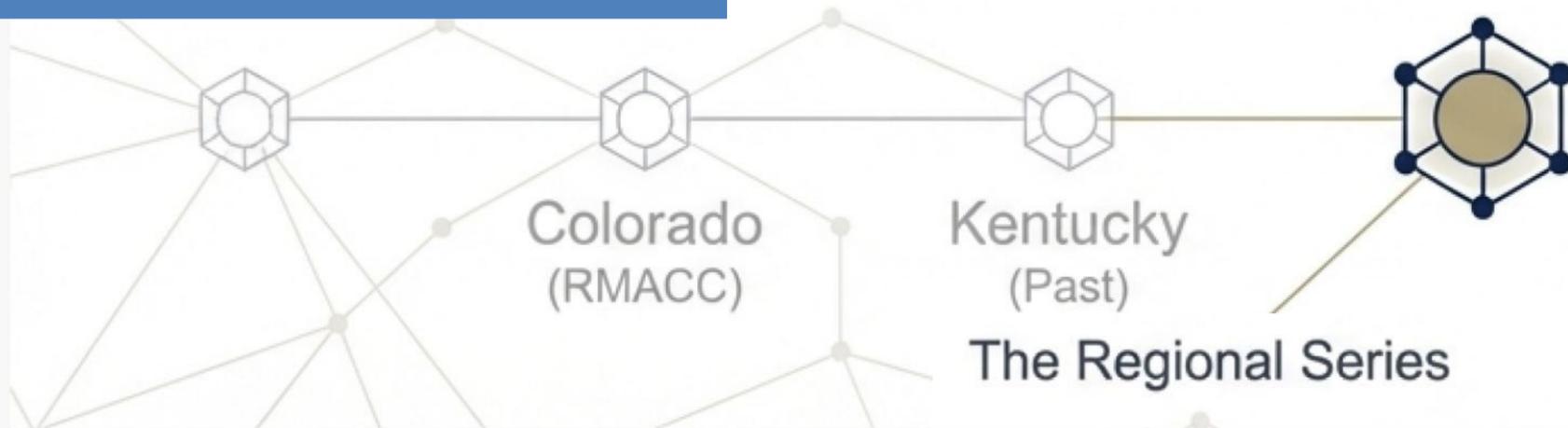
Joint Office Hours (SCIPE) • Shared Workshops • Interoperable Tools (Pegasus) • Allocations often run on shared hardware (e.g., TACC)

Hosted by USC Information Sciences Institute (ISI)

A world leader in research and development of advanced information processing, computer, and communications technologies. From artificial intelligence to networking and cybersecurity, ISI conducts basic and applied research.



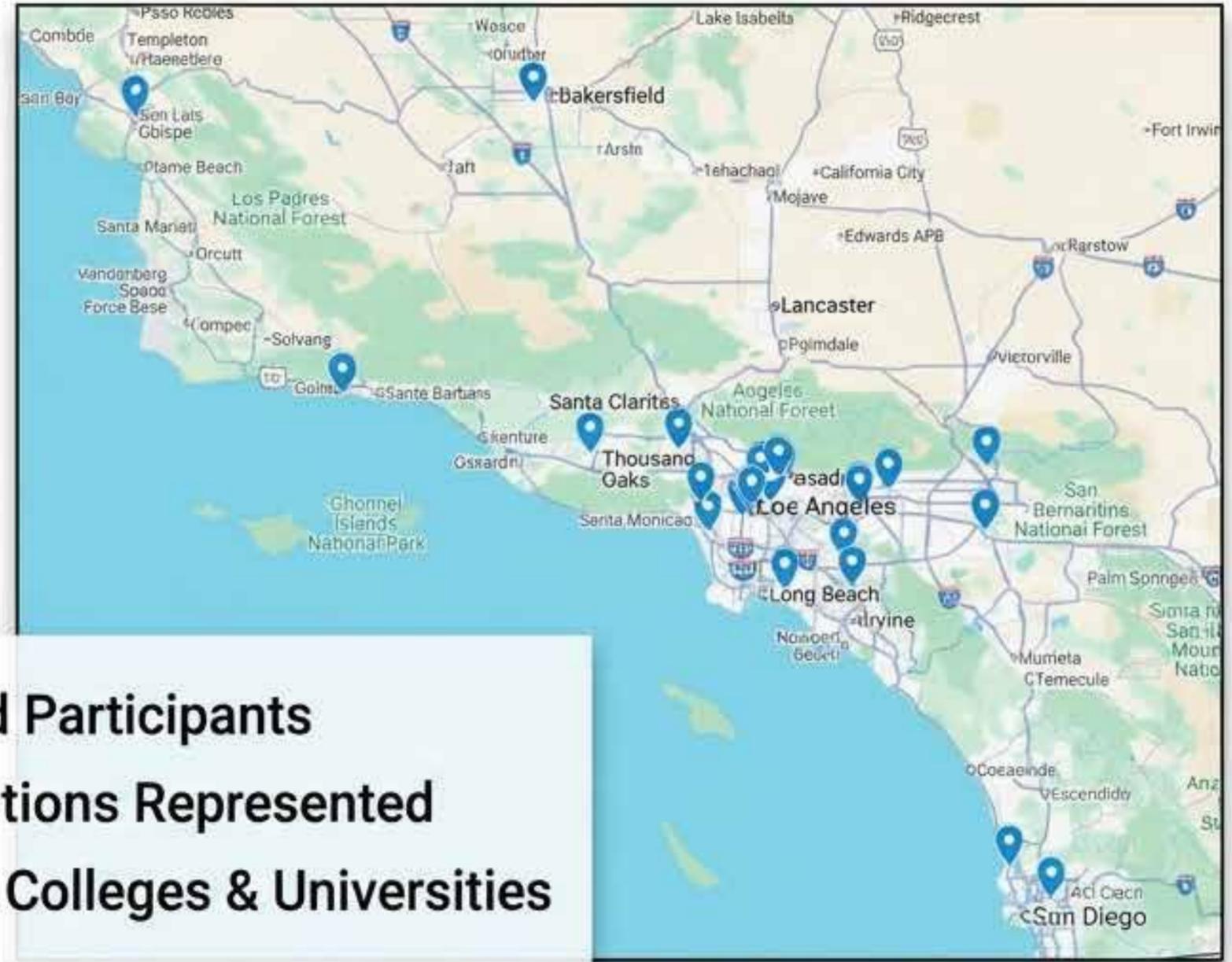
National NAIRR Pilot Workshop
4/25 Denver



Southern California (Today)

Today, we focus specifically on the needs and opportunities within the Southern California ecosystem.

A Regional Hub with National Reach



117 Accepted Participants
30 Distinct Institutions Represented
22 Southern California Colleges & Universities

From the University of California and Cal State systems to private institutions, this room represents the density of Southern California's innovation economy.

Highlights from the NSF ACCESS Regional Workshop

Showcasing the success of the regional AI workshop in Southern California, fostering strong community participation, interdisciplinary collaboration, and key AI applications in research.

Participants' Use of AI

60–65%

use AI for data analysis, modeling, or scientific discovery.

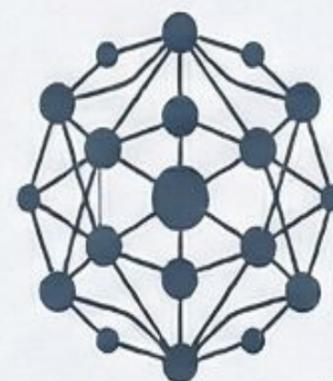
~55%

employ Large Language Models (LLMs) for text-based research tasks.

~50%

have already integrated AI into teaching and workforce development.

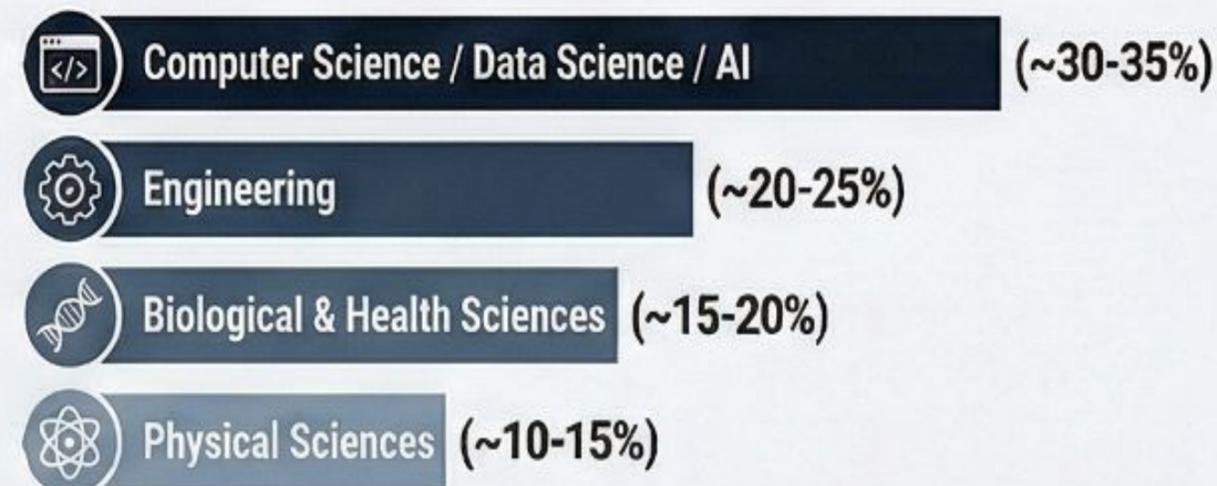
A Community of Interdisciplinary Innovators



AI Across All Disciplines

The majority of participants came from non-computer science fields, fostering cross-domain collaboration.

Top Science Domains Represented



Morning Agenda: The Landscape & Resources



AI on Campus

- 9:10 - 9:40 am **How Generative AI Is Reshaping Learning, Agency, and Equity in Higher Education Worldwide**, Stephen J. Aguilar, University of Southern California 
- 9:40 - 10:10 am **Artificial Intelligence's Transformative Research Methods and Techniques in the Digital Humanities**, Danielle Mihram, University of Southern California 
- 10:10 - 10:40 am **AI for All** - Nabeel Alzahrani, California State University, San Bernardino 
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Break

AI Resources

- 11:00 - 11:30 am **Introduction to NAIRR and ACCESS - Empowering Research and Education with Advanced Computing Resources**, Shelly Knuth, University of Colorado Boulder 
- 11:30 - 12:00 pm **Getting Access to NAIRR Pilot Resources**, Maytal Dahan, University of Texas at Austin 
- 12:00 - 12:30 pm **AI Infrastructure for All** - Frank Würthwein, San Diego Supercomputer Center 

Afternoon Agenda: Application & Innovation



Lightning Talks: What Can You Do With AI? (10 min talks, 5 min Q/A)

- 1:30 - 1:45 pm **Too Smart to be Human: Can AI Agents Replace Us in Behavioral Experiments?** - John Garcia, California Lutheran University (+)
- 1:45 - 2:00 pm **Deepfakes, Data, and Democracy: Artificial Intelligence in Political Life** - Michael Ault, California State University, Bakersfield (+)
- 2:00 - 2:15 pm **AI Agents** - Prakashan Korambath, University of California, Los Angeles (+)
- 2:15 - 2:30 pm **AI-Driven Framework for Personalized Insulin Dosing and Safer Diabetes Management** - Yash Kishorbhai Pansheriya, California State University, Northridge (CSUN) (+)

AI Ready Data

- 2:00 - 2:30 pm **Sage Grande: An AI Testbed for Edge Computing** - Pete Beckman, Northwestern University (+)
- 2:30 - 3:00 pm **From Promise to Practice: Reimagining Resilient Agriculture Through AI** - Nirav Merchant, University of Arizona (+)
- 3:00 - 3:30 pm **Generative Artificial Intelligence and Deep Learning Using NAIRR Reveal Brain Aging Trajectories Before Alzheimer's Disease** - Andrei Irimia, PhD, University of Southern California (+)

- 4:00 - 5:00 pm **Focus Demo: Pegasus Workflow Management System** - Karan Vahi and Mats Rynge, University of Southern California (+)

5:00 PM | Networking Social & Poster Session

Join us for conversation and cross-pollination. Highlighted works include:

ACOSUS - An AI-driven Counseling System for Transfer Students - Sherrene Bogle, Cal Poly Humboldt (+)

Advancing NLP for Non-Latin Scripts and Languages - Adrianna Tan, Future Ethics (+)

AI-Driven Framework for Personalized Insulin Dosing and Safer Diabetes Management - Yash Kishorbhai Pansheriya, California State University, Northridge (+)

AI-Driven Molecular Structure Determination from Ultrafast X-ray Scattering - Roya Moghaddasi Fereidani, University of California San Diego (+)

Autonomous Self-Healing Memory Systems for Energy-Efficient and Reliable Computing - Marjan Asadinia, California State university, Northridge (+)

Data-Driven Mobility Laws for $\Sigma 3\{112\}$ Incoherent Twin Boundaries in Ni-Cr Alloys - Yixi Shen, UC Santa Barbara (+)

Deep Learning for Gene-Environment Interaction Analysis of Complex Traits - Jessica George, University of Southern California (+)

Fairness and generalizability of a machine learning-based model for PAD risk detection across California health systems - Karoline Kallis, University of California, San Diego (+)

Hierarchical Semantic Memory Transformer (H2MT) - Maryam Haghifam, University of California, Los Angeles (+)

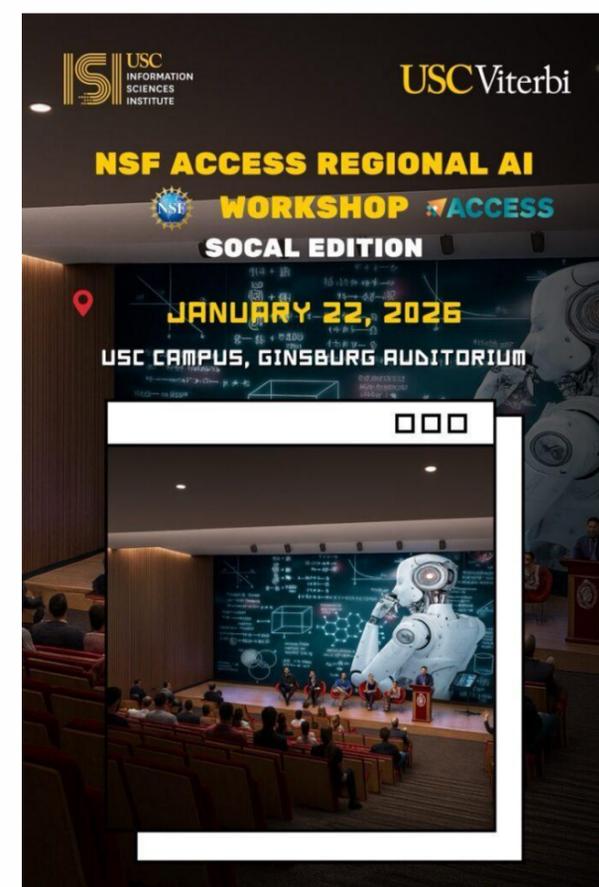
Mechanistic Insights into CO₂ Hydrogenation to Methanol over Inverse ZrO₂/Cu Catalysts - Zihan Yang, University of California, Los Angeles (+)

RadVision - Radiology Visual Question Answering Model - Harsh Toshniwal, University of Southern California (+)

SPHERE: A Global Testbed for Reproducible AI, Cybersecurity, and Privacy Research - David Balenson, USC Information Sciences Institute (+)

The Year of AI: Raising Campus Awareness Through Art, Exhibits, and Community Engagement - Essraa Nawa, Chapman University (+)

Too Smart to be Human: Can AI Agents Replace Us in Behavioral Experiments? - John Garcia, California Lutheran University (+)

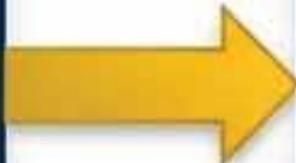


AI on AI: How We Built This Deck



Data Ingestion

Gemini + Google Sheets for attendee demographics & mapping.



Synthesis

ChatGPT 5.2 to summarize survey themes and profiles.



Knowledge Retrieval

NotebookLM to "chat" with PDFs for agenda verification.

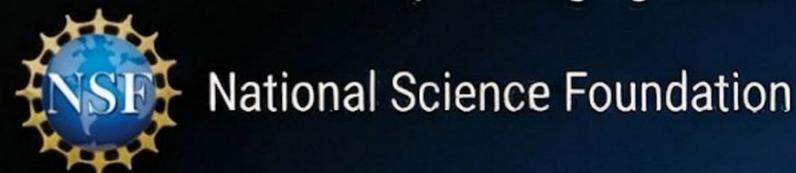


Design

Human curation + AI content generation.

Supercharge Your Research: Free AI & Computing Resources for US Innovators

U.S. National Science Foundation (NSF) funds ACCESS and the NAIRR Pilot to provide no-cost access to advanced cyberinfrastructure, supercharging scientific discovery, advancing AI innovation, and broadening participation in high-performance computing.



The National Resource Ecosystem



ACCESS

ACCESS: Your Gateway to Supercomputing

Provides no-cost access to the nation's advanced computing systems for any research field.

A Broad & Collaborative Effort

The NAIRR Pilot is supported by 10+ federal agencies and 20+ non-governmental partners.

NAIRR Pilot

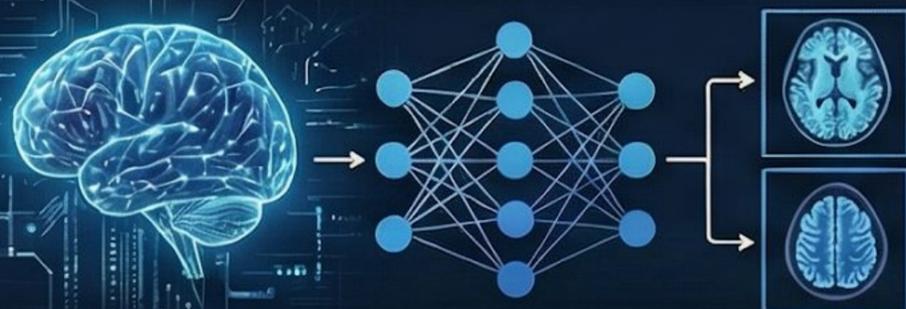
NAIRR Pilot: The National AI Research Resource

Connects researchers to the specific computational, data, and training resources needed for AI.



What Can You Do With These Resources?

Predict Alzheimer's Disease



Leverage deep learning and neuroimaging data to identify brain aging patterns and dementia risk.

Reshape Agriculture



Use a NAIRR allocation to build foundation models for projects like InsectNet for pest identification.

Test Economic Theories with AI Agents



Simulate stock markets to find that AI agents behave more rationally than human investors.

Introducing SoCal-AIRE

Southern California AI for Research & Education Community

Mission: Advancing the effective, responsible, and scalable use of AI in research and teaching.

- Share applied use cases & workflows
- Connect local efforts to NSF resources (ACCESS/NAIRR)
- Foster peer learning and collaboration

Website: social-aire.org

Contact: contact@social-aire.org



ACCESS
Support

All experience levels welcome—from explorers to advanced users.



Acknowledgments & Support



 **ACCESS**

■ Support

NAIRR Pilot



Funded by the ACCESS program (NSF Grants 2138286).

Organized by USC Information Sciences Institute.

Closing Remarks: Ewa Deelman

This workshop is just the start. Join SoCal-AIRE to keep the momentum going.