ENERGY HIGH PERFORMANCE COMPUTING CONFERENCE

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MARCH 5-7, 2024
HOUSTON, TEXAS

RICE KEN KENNEDY INSTITUTE
AI, Data, and Computing for Global Impact

MESSAGE FROM THE KEN KENNEDY INSTITUTE LEADERSHIP

The Ken Kennedy Institute at Rice University is pleased to host the 17th annual Energy High Performance Computing Conference in Houston, TX. The Energy HPC Conference is the premier meeting place for key stakeholders to engage in conversations about challenges, opportunities, and new developments to help advance HPC in the energy industry. The program includes a remarkable lineup of invited speakers, panels, technical talks, and birds of feather sessions that combine diverse insights and perspectives from industry, academia, and national labs. The conference also features an exhibit hall, networking receptions, poster presentations, and add-on workshops.

Tuesday's Sponsor Networking Reception will include a specialty wine, cheese, and heavy appetizer selection. Wednesday's Poster Presentation Reception will showcase exciting research happening in the field by the future leaders in HPC. Throughout the conference, take advantage of networking breaks to enjoy specialty coffee, popcorn, and donuts!

The Ken Kennedy Institute at Rice University is committed to supporting cutting-edge research, educating innovators, and connecting across industries by bringing together thought leaders from our regional and global energy and high performance computing communities. We hope that you will thoroughly enjoy the program and use these networking opportunities to initiate collaborations and explore technological innovation to address demands in energy, computing, AI, and more.

We are grateful to our sponsors, ecosystem partners, speakers, and attendees who share our enthusiasm and seek the opportunity to support and engage with the community that is built throughout the next few days. A special thank you is due for our sponsors, as proceeds from this conference are used to provide recruiting fellowships for prospective graduate students to attend Rice University and industry fellowships to current Rice graduate students to help with their education and provide connections with industry professionals. In total, the Energy HPC Conference has funded 78 fellowships for $580,000 since 2012.

The Ken Kennedy Institute team would also like to recognize conference co-founder Keith Gray along with our stellar planning committee for their many contributions to this year's conference — this highly-anticipated event exists because of your efforts.

On behalf of the conference committee, Rice University, and the Ken Kennedy Institute, we thank you for being here.

Lydia Kavraki, PhD
Director, The Ken Kennedy Institute

Angela Wilkins, PhD
Executive Director, The Ken Kennedy Institute

Himani Agrawal, Walmart
Mauricio Araya-Polo, TotalEnergies
Michelle Atkinson, The Ken Kennedy Institute, Rice University
David Baldwin, Shell
Mike Cogan, Equinor
Donny Cooper, TotalEnergies
Erik Engquist, Rice University
Melyssa Fratkin, TACC
Esthela Gallardo, Microsoft
Keith Gray, Intel
Maxime Hugues, Amazon Web Services
Elizabeth L'Heureux, bp
Christopher Leader, SLB
Alex Loddoch, Chevron
David Martin, Argonne National Laboratory
Tom McDonald, Amazon Web Services
Nefeli Moridis, NVIDIA
Samantha Nava, The Ken Kennedy Institute, Rice University
Jan E. Odegard, The Ion
Tim Osborne, Oak Ridge National Laboratory
Kelly Peters, The Ken Kennedy Institute, Rice University
Jeremy Singer, ExxonMobil
Noella Soares, Shell
Suzy Tichenor, Oak Ridge National Laboratory
Mike Townsley, ExxonMobil
Angela Wilkins, The Ken Kennedy Institute, Rice University
Muhong Zhou, bp

AI IN ENERGY WORKSHOP COMMITTEE:

Denis Akhiyarov, AiKYNETIX
Gibby Dunleavy, Constant Impact
Scott Ferguson, New Era Technology
Keith Gray, Intel
Max Grossman, Cruise
Giewee Hammond, Agellus Tank Robotics
Brianna Hemeyer-Taylor, bp
Tyler Peters, Chevron
Pam Randle, Kinder Morgan
Amy Rueve, Pioneer Natural Resources
Julianna Toms, Halliburton
Xiao-Hui Wu, ExxonMobil

RICE KEN KENNEDY INSTITUTE
AI, Data, and Computing for Global Impact

The Ken Kennedy Institute is an interdisciplinary group that works collaboratively on groundbreaking research in artificial intelligence, data, and computing. We foster a clear and strategic pathway to real-world impact by enabling new conversations that drive innovative research, develop new technology, and advance professional training opportunities.

We cannot achieve our mission without meaningful connections and valuable insight. Please contact us with your questions and ideas at kenkennedy@rice.edu.

Rice Ken Kennedy Institute
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Houston, TX 77005
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Conference Code of Conduct

The organizers invite all attendees, sponsors/exhibitors, speakers, media, volunteers, and other participants to help us realize a safe and positive conference experience for everyone. The Ken Kennedy Institute works to increase tolerance, opportunity, and diversity in an effort to continually encourage the open exchange of ideas. For these reasons, the Institute is committed to providing a harassment-free experience at all the events it organizes. If you experience or witness harassment or discriminatory behavior at the conference, report this promptly to kenkennedy@rice.edu.

The conference venue is shared with members of the public that are not attendees of the conference; please be respectful to all patrons of these locations.

Please note that audio recording, videotaping, and/or photography of any portion of the conference material is strictly prohibited without prior consent of the staff.

2024 | ENERGY HIGH PERFORMANCE COMPUTING CONFERENCE

INVITED CONFERENCE SPEAKERS

David Baldwin, MBA
Shell

Kirk Bresniker
Hewlett Packard Labs

Christy Cardenas, CPA
Grit Ventures; Grit Labs

Keith Gray
Intel

Mike Heroux, PhD
Sandia National Laboratories; Exascale Computing Project

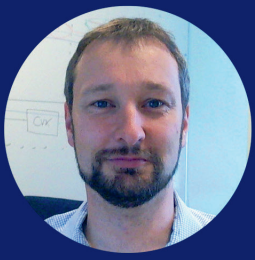
Detlef Hohl, PhD
Shell

Lydia Kavraki, PhD
Rice University

Anastasios Kyrillidis, PhD
Rice University

2024 | ENERGY HIGH PERFORMANCE COMPUTING CONFERENCE

INVITED CONFERENCE SPEAKERS



Alex Loddoch, PhD
Chevron

David Martin, MS
Argonne National Laboratory

Nefeli Moridis, PhD
NVIDIA

Keshav Pingali, ScD
The University of Texas at Austin

Ramamoorthy Ramesh, PhD
Rice University

Dan Stanzione, PhD
TACC; The University of Texas at Austin

Tao Sun, PhD
Chevron Technical Center

Suzy Tichenor
Oak Ridge National Laboratory

2023-2024 Ken Kennedy Institute Industry Sponsored Fellowship Recipients

Rice Ken Kennedy Institute Graduate Fellowship Award recipients (from top row, left to right): Sina Alemohammad, Anja Conev, Katherine Garcia, Jaewoo Kim, Nhi Le, Kashif Liaqat, Edward Duc Hien Nguyen, Tianyang Pan, Carlos Taveras

bp

Scott Morton Memorial Graduate Fellowship

Andrew Ladd Memorial Excellence in Computer Science

ExxonMobil

CRAY

ENERGY HIGH PERFORMANCE COMPUTING CONFERENCE

The Ken Kennedy Institute is pleased to recognize the achievements and research of Rice University's graduate students by awarding fellowships to students pursuing research related to high performance computing, computational science and engineering, and data science.

Fellowship awards are made possible with support from bp, ExxonMobil, Shell, the Energy High Performance Computing Conference, and the Andrew Ladd, Ken Kennedy-HPE Cray, and Scott Morton endowments.

We welcome you to become a partner in sponsoring the Ken Kennedy Institute Fellowship Program at Rice University. For more information, please email **kenkennedy@rice.edu.**

Ken Kennedy Institute Computational Science & Engineering Graduate Recruiting Fellowships

Funded by the proceeds from the Energy High Performance Computing Conference, the goal of this fellowship program is to attract exceptional graduate students to Rice University in the fields of high performance computing, computational science and engineering, and data science, with special consideration given to students with research interests in areas of relevance to the energy industry.

2023-2027

Alexander Ahrens
Applied Physics

Cesar Cardenas
Statistics

Khushbu Pahwa
Computer Science

Xiaorong Zhang
Electrical & Computer Engineering (ECE)

2022-2026

Brianna Barrow
Computer Science
Alyssa Cantu
Computer Science
Rose Graves
Statistics
Kevin McCoy
Statistics
John Steinman
Computational Applied Mathematics & Operations Research
Ria Stevens
Computer Science
Xiaoyu (Rosie) Zhu
Earth, Environmental, and Planetary Sciences

2021-2025

Kelsey Murphy
Earth, Environmental, and Planetary Sciences
Jose Palacio
Statistics
Xinyu (Xin) Yao
Computer Science

2020-2024

Kristen Curry
Computer Science
Raul Garcia
Computational & Applied Mathematics
Bryant Jerome
Applied Physics
Mirae (Sunny) Kim
Computer Science
Camille Little
ECE
Naiming (Lucy) Liu
ECE
Catherine Tuppen
ECE
Cameron Wolfe
Computer Science
Tiancheng Xu
Computer Science

2019-2023

Alejandro Diaz
Computational & Applied Mathematics
Yilei Fu
Computer Science
Christina Taylor
Computational & Applied Mathematics
John Zito
Statistics

ENERGY HIGH PERFORMANCE COMPUTING CONFERENCE

RICE KEN KENNEDY INSTITUTE
AI, Data, and Computing for Global Impact

W Add-On Workshop | B Birds of a Feather (BOF) | M Main Session | N Networking

A Technical Talk: Applications | F Technical Talk: Applications and Frameworks | O Technical Talk: Optimization

8:00 a.m. – 8:30 a.m.	N	**Check-in + Breakfast** » Auditorium + Exhibit Hall
8:30 a.m. – 9:30 a.m.	B	**BOF I The Intersection of HPC and AI** » Auditorium Co-moderator(s): **Mauricio Araya-Polo**, PhD, TotalEnergies; **Maxime Hugues**, PhD, Amazon Web Services (AWS) Panelist(s): **Mark Roberts**, PhD, TGS; **Weichang Li**, PhD, Aramco Research Center - Houston; **Gary Grider**, Los Alamos National Laboratory; **Dan Stanzione**, PhD, Texas Advanced Computing Center (TACC); The University of Texas at Austin
9:30 a.m. – 10:00 a.m.	N	**Morning Coffee Break** » Exhibit Hall
10:00 a.m. – 10:10 a.m.	M	**Welcome I Day 1** » Auditorium Speaker(s): **Lydia Kavraki**, PhD, The Ken Kennedy Institute, Rice University
10:10 a.m. – 10:55 a.m.	M	**Keynote I Megatrends and Micro-Architectures: HPC, AI and the Future of Everything** » Auditorium Speaker(s): **Kirk Bresniker**, Hewlett Packard Labs
10:55 a.m. – 11:30 a.m.	M	**The New Systems at TACC, and the Future (?) of High End Computing** » Auditorium Speaker(s): **Dan Stanzione**, PhD, TACC; The University of Texas at Austin
11:30 a.m. – 12:20 p.m.	N	**Lunch** » Exhibit Hall
12:20 p.m. – 2:00 p.m.	O	**Technical Talks: Optimization** » Auditorium
12:20 p.m. – 2:00 p.m.	A	**Technical Talks: Applications** » Room 280
2:00 p.m. – 2:30 p.m.	N	**Afternoon Break** » Exhibit Hall
2:30 p.m. – 3:05 p.m.	M	**Better Together: Working Toward an Open Software Ecosystem for HPC and AI** » Auditorium Speaker(s): **Mike Heroux**, PhD, Sandia National Laboratories; US DOE Exascale Computing Project (ECP)
3:05 p.m. – 3:40 p.m.	M	**Closing the Gap in Subsurface Characterization and Modeling Through Computational Stratigraphy** » Auditorium Speaker(s): **Tao Sun**, PhD, Chevron Technical Center
3:40 p.m. – 4:15 p.m.	M	**Computational Science, HPC and AI in the Energy Transition – Is It All the Same Now?** » Auditorium Speaker(s): **Detlef Hohl**, PhD, Shell
4:15 p.m. – 5:45 p.m.	N	**Sponsor Networking Reception** » Exhibit Hall

Specialty coffee bar is provided by AMD, DELL Technologies

Tuesday afternoon's break is provided by SUPERMICRO, AMD

Technical Talks: Optimization ❯ **Auditorium**
Moderator(s): ***Elizabeth L'Heureux, bp***

12:20 p.m. – 12:45 p.m.	**Evolution of Energy-Efficient Oil & Gas Simulations with Unified Memory in GPU-Accelerated Systems** Speaker(s): **Arthur Lorenzon**, Federal University of Rio Grande do Sul (UFRGS) Author(s): **Arthur Lorenzon**, UFRGS; **Pedro Rigon**, Institute of Informatics, UFRGS; **Brenda Schussler**, Institute of Informatics, UFRGS; **Alexandre Sardinha de Mattos**, Petrobras; **Alexandre Carissimi**, UFRGS; **Jairo Panetta**, ITA; **Pedro Mário Cruz E Silva**, NVIDIA; **Fábio Alves de Oliveira**, NVIDIA; and **Philippe Navaux**, UFRGS
12:45 p.m. – 1:10 p.m.	**Optimization Strategy for SRME on Highly Parallel Hardware** Speaker(s): **Marcel Nauta**, Shearwater GeoServices Author(s): **Marcel Nauta**, Shearwater GeoServices and **Lorenzo Casasanta**, Shearwater GeoServices
1:10 p.m. – 1:35 p.m.	**Finite-Volume Flux Computation on Cerebras CS2** Speaker(s): **Mauricio Araya-Polo**, TotalEnergies Author(s): **Mauricio Araya-Polo**, TotalEnergies and **Ryuichi Sai**, Rice University
1:35 p.m. – 2:00 p.m.	**Automatic Workload Scheduling for Full Waveform Inversion in Shared-Memory Systems** Speaker(s): **Italo Assis**, Universidade Federal do Rural do Semi-Árido Author(s): **Italo Assis**, Universidade Federal do Rural do Semi-Árido; **Felipe Silva**, Universidade Federal do Rural do Semi-Árido; **Joao Fernandes**, Universidade Federal do Rio Grande do Norte; **Idalmis Sardina**, Universidade Federal do Rio Grande do Norte; **Tiago Barros**, Universidade Federal do Rio Grande do Norte; and **Samuel Xavier-De-Souza**, Universidade Federal do Rio Grande do Norte

Technical Talks: Applications ❯ **Room 280**
Moderator(s): ***David Baldwin, Shell***

12:20 p.m. – 12:45 p.m.	**A Novel Technique to Differentiate Bugs from Precision-Induced Round-Off Errors in Seismic Imaging** Speaker(s): **Karthik Neerala Suresh**, ExxonMobil Author(s): **Karthik Neerala Suresh**, ExxonMobil; **Yongchang Ji**, ExxonMobil; **Kirsten Byers**, ExxonMobil; **James An**, ExxonMobil; and **Rahul Sampath**, ExxonMobil
12:45 p.m. – 1:10 p.m.	**Half Precision Wave Simulation** Speaker(s): **Longfei Gao**, Argonne National Laboratory Author(s): **Longfei Gao**, Argonne National Laboratory
1:10 p.m. – 1:35 p.m.	**Developing a Python Interface for Fortran RTM and FWI Framework** Speaker(s): **Mikhail Davydenko**, NAG/bp Center for High-Performance Computing Author(s): **Mikhail Davydenko**, NAG/bp Center for High-Performance Computing; **Vladimir Bashkardin**, bp; **Anar Yusifov**, bp; and **Qingqing Liao**, bp
1:35 p.m. – 2:00 p.m.	**Developing Seismic Imaging Software to Stand the Test of Time** Speaker(s): **Fabio Luporini**, Devito Codes Author(s): **Fabio Luporini**, Devito Codes; **Mathias Louboutin**, Devito Codes; **Edward Caunt**, Devito Codes; **Paul Holzhauer**, Devito Codes; and **Gerard Gorman**, Devito Codes/Imperial College London

W Add-On Workshop | B Birds of a Feather (BOF) | M Main Session | N Networking

A Technical Talk: Applications | F Technical Talk: Applications and Frameworks | O Technical Talk: Optimization

8:00 a.m. – 8:30 a.m.	N	**Check-in + Breakfast** ›› Auditorium + Exhibit Hall
8:30 a.m. – 9:30 a.m.	B	**BOF	Overcoming Challenges in Recruiting, Retention, and Workforce Development in HPC and AI** ›› Auditorium Moderator(s): **Cristina Beldica**, PhD, MBA, Intel Panelist(s): **Jeff Davis**, Chevron; **Chris Jermaine**, PhD, Rice University; **Arianna Martin**, NAG/bp
9:30 a.m. – 10:00 a.m.	N	**Morning Coffee Break** ›› Exhibit Hall
10:00 a.m. – 10:10 a.m.	M	**Welcome	Day 2** ›› Auditorium Speaker(s): **Keith Gray**, Intel; Conference Co-Founder
10:10 a.m. – 10:55 a.m.	M	**Fireside Chat with Ramamoorthy Ramesh** ›› Auditorium Moderator(s): **Christy Cardenas**, CPA, Grit Ventures; Grit Labs Speaker(s): **Ramamoorthy Ramesh**, PhD, Rice University
10:55 a.m. – 11:30 a.m.	M	**Algorithmic Efficiency in AI and Distributed Learning: Overview and (Maybe) Thinking Out of the Box** ›› Auditorium Speaker(s): **Anastasios (Tasos) Kyrillidis**, PhD, Rice University
11:30 a.m. – 12:20 p.m.	N	**Lunch** ›› Exhibit Hall
12:20 p.m. – 2:00 p.m.	F	**Technical Talks: Applications and Frameworks** ›› Auditorium
12:20 p.m. – 2:00 p.m.	O	**Technical Talks: Optimization** ›› Room 280
2:00 p.m. – 2:40 p.m.	N	**Afternoon Break** ›› Exhibit Hall
2:40 p.m. – 3:15 p.m.	M	**Parallel Programming and the Legacy of Ken Kennedy** ›› Auditorium Speaker(s): **Keshav Pingali**, ScD, The University of Texas at Austin
3:15 p.m. – 3:50 p.m.	M	**Panel	Encouraging Collaboration for Energy HPC** ›› Auditorium Moderator(s): **Nefeli Moridis**, PhD, NVIDIA Panelist(s): **David Baldwin**, MBA, Shell; **Alex Loddoch**, PhD, Chevron; **David Martin**, MS, Argonne National Laboratory; **Suzy Tichenor**, Oak Ridge National Laboratory
3:50 p.m. – 5:15 p.m.	N	**Poster Presentation Reception** ›› Exhibit Hall

Technical Talks: Applications and Frameworks » **Auditorium**
Moderator(s): ***Jeremy Singer, ExxonMobil***

12:20 p.m. – 12:45 p.m.	**HPC/ML Weather Models Coupled to Wind Farm Simulations for Energy Production Forecasting** Speaker(s): **Vidyasagar Ananthan**, Amazon Web Services Author(s): **Vidyasagar Ananthan**, Amazon Web Services; **Satheesh Maheswaran**, Amazon Web Services; **Srinivas Tadepalli**, Amazon Web Services; and **Timothy Brown**, Amazon Web Services
12:45 p.m. – 1:10 p.m.	**GPUs Architectural Benchmarking for ML-based Algae Segmentation and Classification for CO2 Capture** Speaker(s): **Charlene Bruno**, TotalEnergies Author(s): **Charlene Bruno**, TotalEnergies; **Mauricio Araya-Polo**, TotalEnergies; and **Bruno Conche**, TotalEnergies
1:10 p.m. – 1:35 p.m.	**OpenCHAMI: Bridging Traditional HPC and Cloud Ecosystems Through Open Source Collaboration** Speaker(s): **Alex Lovell-Troy**, Los Alamos National Lab Author(s): **Alex Lovell-Troy**, Los Alamos National Lab
1:35 p.m. – 2:00 p.m.	**National Renewable Energy Laboratory: Campaign Storage Utilized to Advance Renewable Energy Efforts** Speaker(s): **Kyle Lamb**, VAST Data Author(s): **Kyle Lamb**, VAST Data; **Andy Pernsteiner**, VAST Data; **Mike Solari**, National Renewable Energy Laboratory (NREL); and **John Leicht**, NREL

Technical Talks: Optimization » **Room 280**
Moderator(s): ***Alex Loddoch, Chevron***

12:20 p.m. – 12:45 p.m.	**Software Development Case Study: The Acceleration of a Computational Stratigraphy Application Using GPUs** Speaker(s): **Martin Kuhnel**, Chevron Author(s): **Martin Kuhnel**, Chevron; **Alex Loddoch**, Chevron; and **Tao Sun**, Chevron
12:45 p.m. – 1:10 p.m.	**Turning GKE into a Supercomputer** Speakers: **Jerome Cousin**, PGS; and **Ward Harold**, Google Author(s): **Louis Bailleu**, PGS; **Ward Harold**, Google; **Eduardo Corona**, Google Solutions; and **Jerome Cousin**, PGS
1:10 p.m. – 1:35 p.m.	**High Throughput Pseudo-Acoustic TTI Wave Equations on the GPU** Speaker(s): **Ossian O'Reilly**, Advanced Micro Devices Inc. Author(s): **Ossian O'Reilly**, Advanced Micro Devices Inc. and **Essam Morsi**, Advanced Micro Devices Inc.
1:35 p.m. – 2:00 p.m.	**Evaluating Memory Bandwidth and Price Performance of CPUs Using SeisWave RTM: A Comparative Study** Speaker(s): **Weishan Han**, SeisWave Corp; **Kun Jiao**, AWS Author(s): **Kun Jiao**, AWS; **Weishan Han**, SeisWave Corp; and **Srinivas Tadepalli**, AWS

***** If you decide to add-on a Thursday workshop after you have already registered, please reach out to conference staff to update your registration.

MARCH 7 • THURSDAY

8:00 a.m. – 3:45 p.m. A

Best Practices in HPC Management* » Exhibit Hall
Speaker(s): Practitioners and Experts from Industry, Academia, and National Labs

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8:30 a.m. – 2:30 p.m. A

AI in Energy* » Auditorium
Speaker(s): **Jit Biswas**, Google Cloud; **Christy Cardenas**, Grit Ventures; Grit Labs; **Nadav Cohen**, Imubit; **Benjamin Consolvo**, Intel; **Gibby Dunleavy**, Constant Impact; **John Foster**, The University of Texas at Austin; **Apurva Gala**, Shell; **Jonny Hall**, bp; **Ra Inta**, Chevron Phillips Chemical; **Abi (Abishek) Mukund**, Imubit; **Vivek Ramavajjala**, Excarta, Inc.; **Jeremy Singer**, ExxonMobil; **Angela Wilkins**, The Ken Kennedy Institute, Rice University

Planning Committee: **Denis Akhiyarov**, AiKYNETIX; **Gibby Dunleavy**, Constant Impact; **Scott Ferguson**, New Era Technology; **Keith Gray**, Intel; **Max Grossman**, Cruise; **Giewee Hammond**, Agellus Tank Robotics; **Brianna Hemeyer-Taylor**, bp; **Tyler Peters**, Chevron; **Pam Randle**, Kinder Morgan; **Amy Rueve**, Pioneer Natural Resources; **Julianna Toms**, Halliburton; **Xiao-Hui Wu**, ExxonMobil

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8:30 a.m. – 3:00 p.m. A

Introduction to Physics-Informed Machine Learning with Modulus* » 10th Floor Conference Room 1003
Speaker(s): **Pavel Dimitrov**, NVIDIA; **Harpreet Sethi**, NVIDIA

8:30 a.m. – 4:00 p.m. A

E4S + Programming Toolkits* » Room 280
Speaker(s): **Cristobal A. Barberis**, Adaptive Computing; **Sameer Shende**, OACISS, University of Oregon


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- Gartner Global Supply Chain **Top 10**
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Want to know more?

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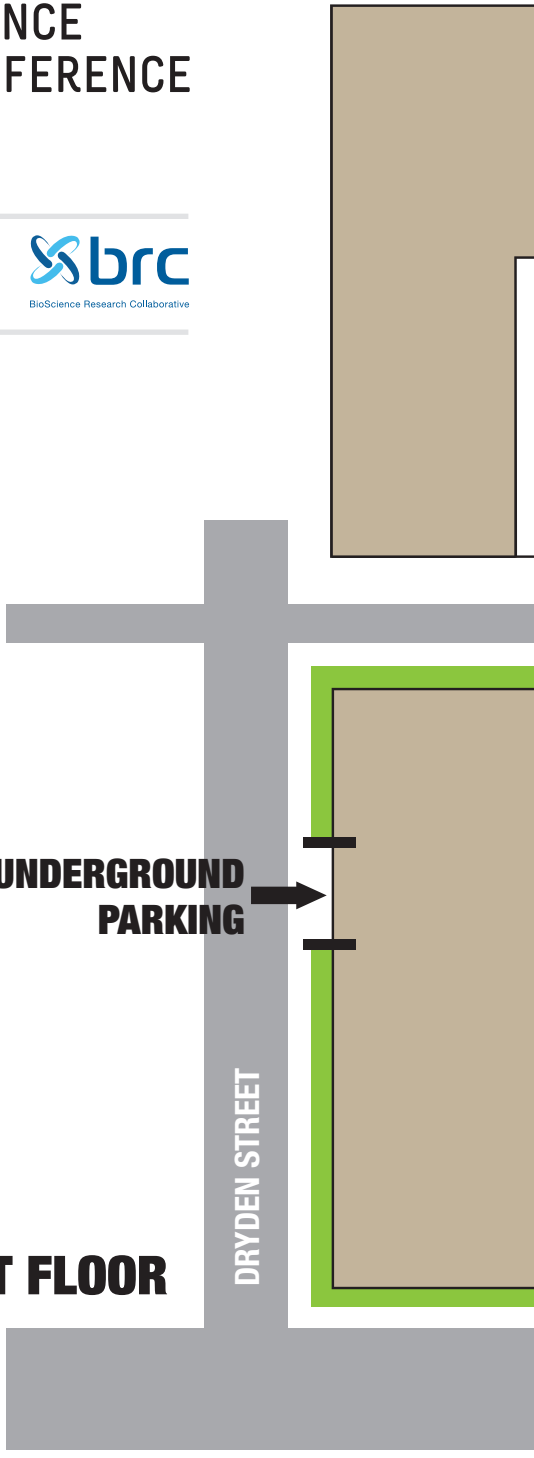
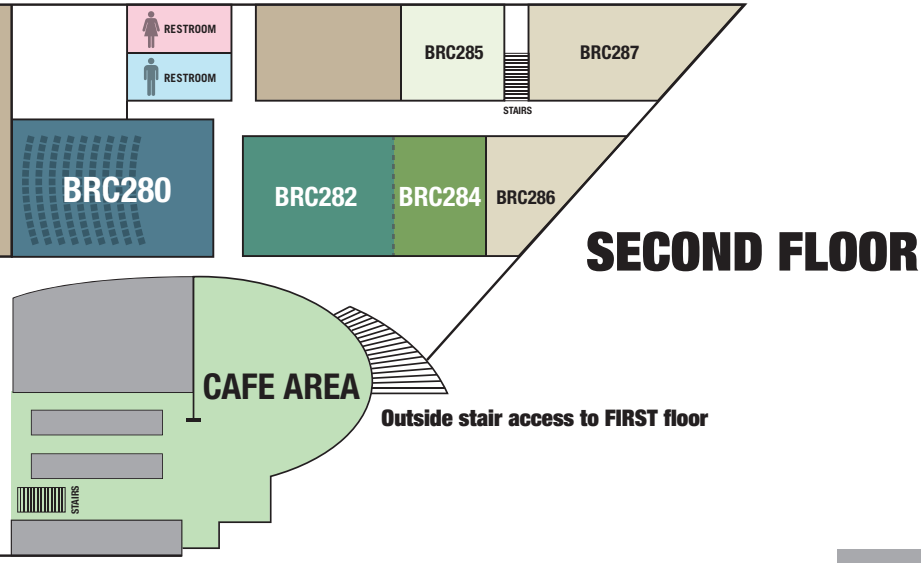
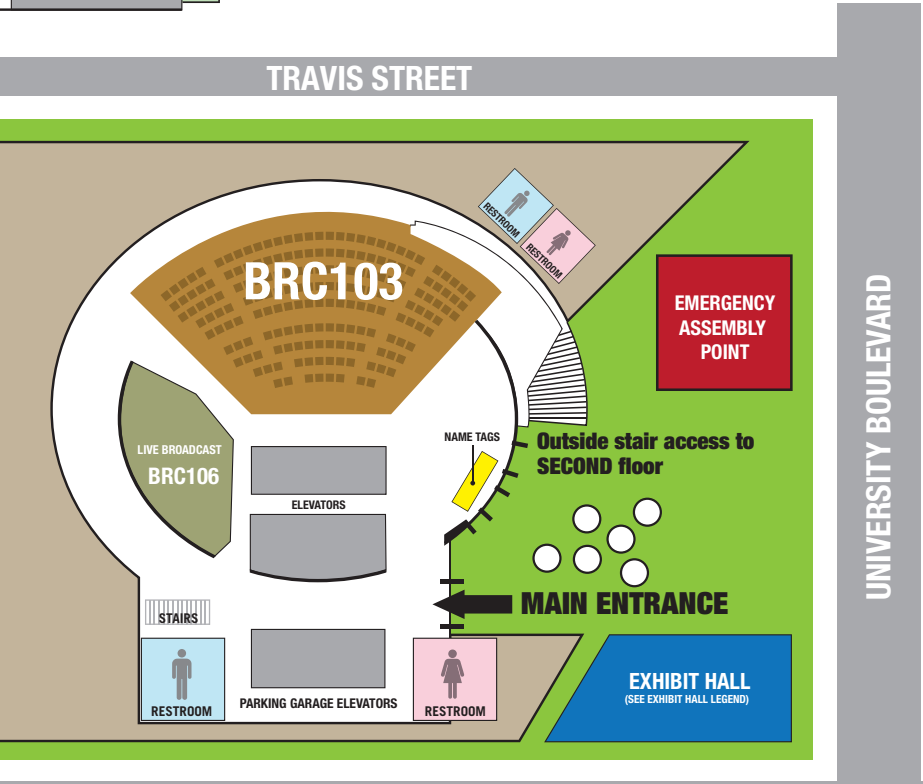
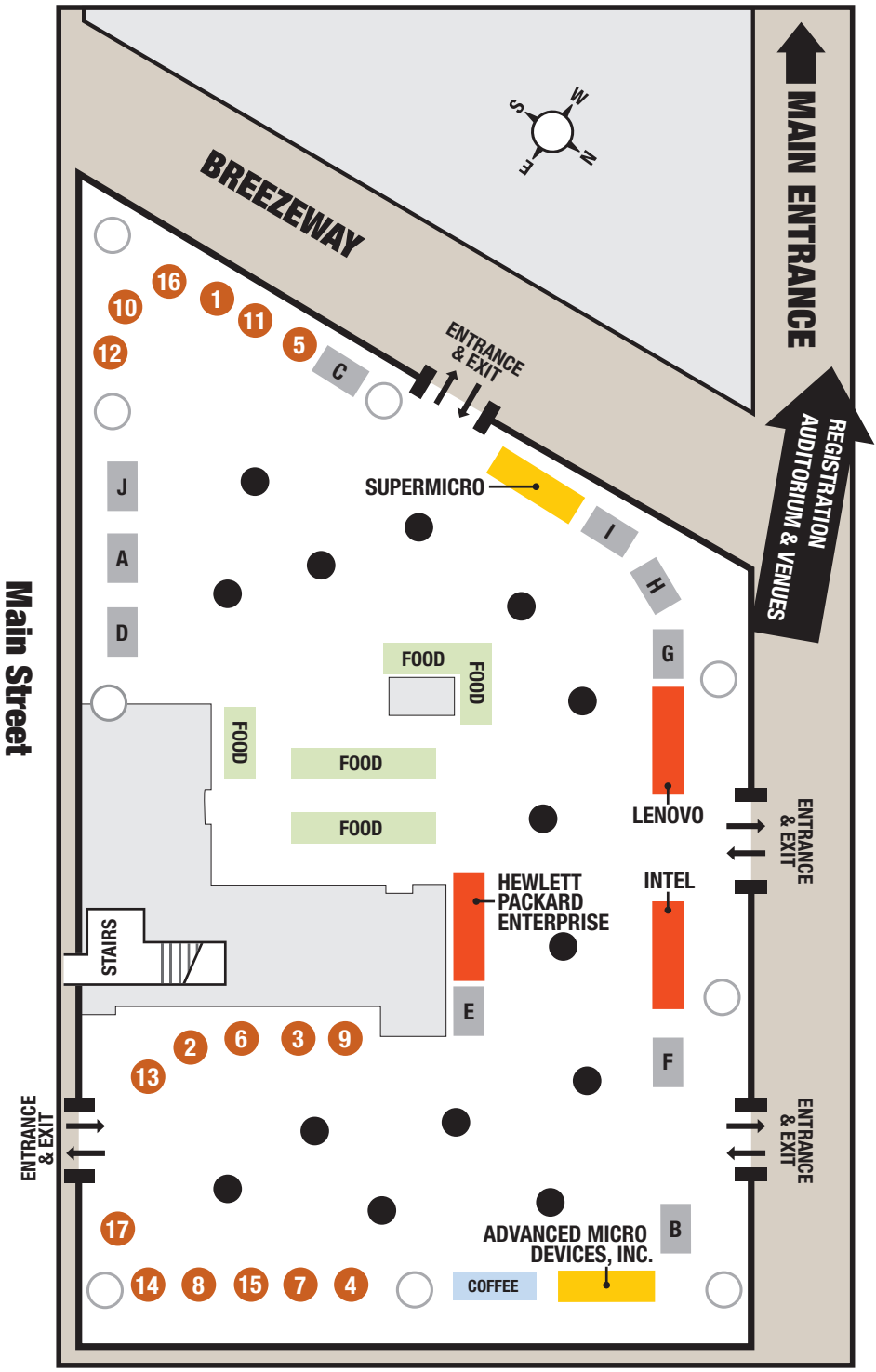



RESTROOM
RESTROOM
BRC285
BRC287
STAIRS
BRC280
BRC282
BRC284
BRC286
SECOND FLOOR
CAFE AREA
Outside stair access to FIRST floor
STAIRS


TRAVIS STREET
RESTROOM
RESTROOM
BRC103
EMERGENCY ASSEMBLY POINT
LIVE BROADCAST
BRC106
NAME TAGS
Outside stair access to SECOND floor
ELEVATORS
MAIN ENTRANCE
STAIRS
RESTROOM
PARKING GARAGE ELEVATORS
RESTROOM
EXHIBIT HALL
(SEE EXHIBIT HALL LEGEND)
UNIVERSITY BOULEVARD
MAIN STREET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REGISTRATION AUDITORIUM & VENUES
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ADVANCED MICRO DEVICES, INC.
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D DDN Storage

E GIGABYTE

F Google Cloud

G IBM

H Microsoft Corporation

I Penguin Solutions

J Rescale

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2 ALTAIR

3 Atempo

4 Cornelis Networks

5 Fraunhofer ITWM

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Carme, An Open Source Software Stack for Multi-User Interactive Jobs on HPC Clusters

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A Systems-Level Approach to Transforming 'Big Data' into 'Fast Insight'

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A Comparison of Auto Machine Learning (AutoML) Tools for Lithofacies Classification

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Sustainable HPC Through AI and CPU-GPU Technologies

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Reducing Manual Annotation Time to Count Benthic Organisms

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Mapping of Microplastic Concentration in the Pearl River Estuary in China and the Indo-Pacific Humpback Dolphins (Sousa chinensis) Population

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Automated MPI Code Generation for Scalable Finite-Difference Solvers

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Modeling, Simulation, and AI for Energy Systems

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Benchmarking Study of AI Accelerators – Electricity Load Prediction Use Case

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Performance Tuning of Containerized FFTs on HPC Clusters

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Geothermal Power Generation Potential in the United States by 2050

Chen Chen (Rice University) and **Daniel Cohan** (Rice University)

Subsurface Storage of CO2 in Shale Enabled by Integrating Measurements and Multi-Scale Simulations on HPCs

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