# STEPS SYMPOSIUM

**December 11-12, 2018**
**UC Davis**
**Conference Center**

# Welcome!

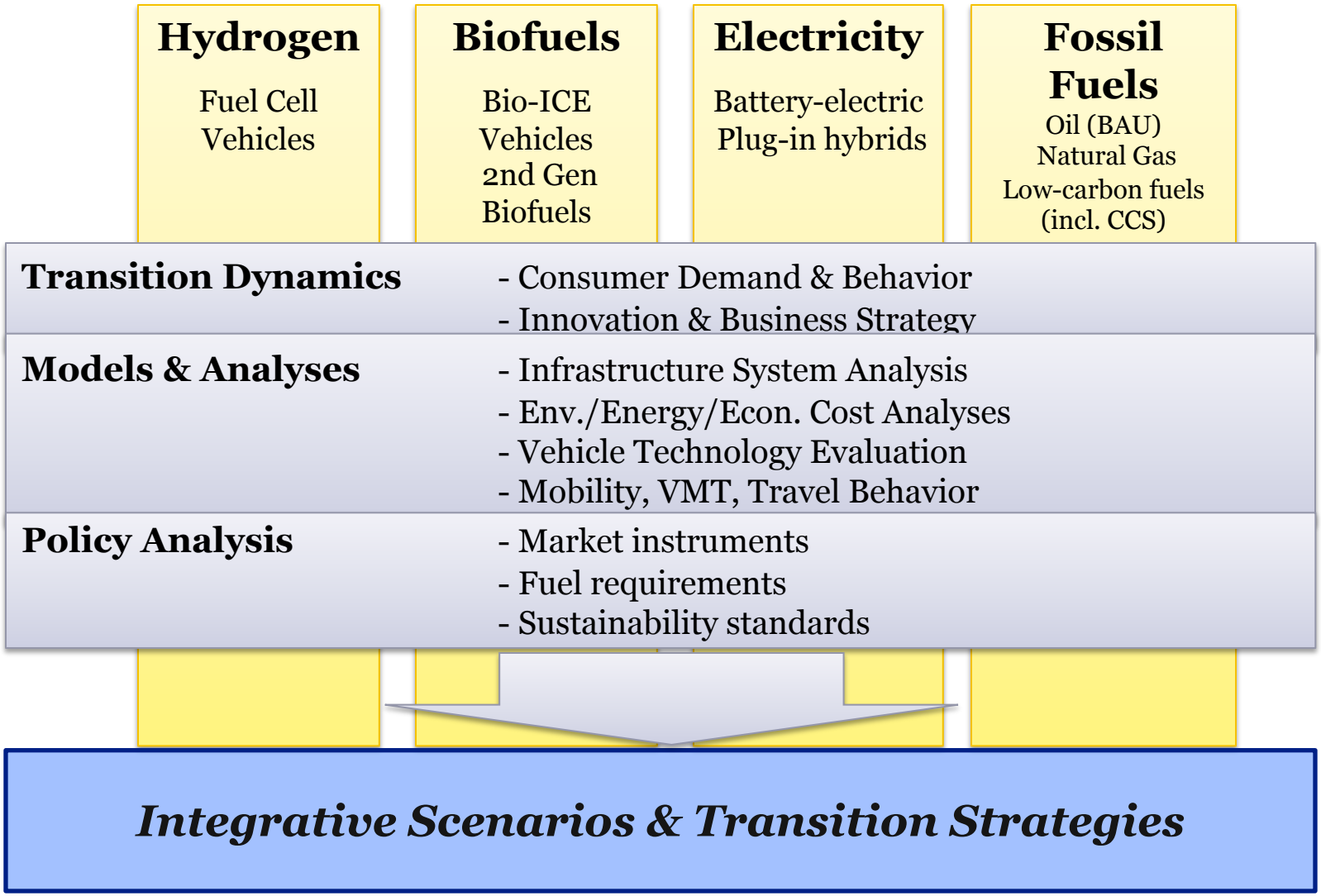
# STEPS Program: Our Goals

- **Rigorous Research:** Generate New Insights to a sustainable transportation energy future
- **Outreach:** Disseminate knowledge to industry, government, NGOs and general public
- **Education:** Train the next generation of sustainable transportation and energy leaders

**1998----------2014----------2018**

| Fuel Cell Vehicle Modeling Program | Hydrogen Pathways | STEPS | NextSTEPS | ***STEPS3*** |
|---|---|---|---|---|
| 1998-2002 FCV Technology | 2003-2006 FCVs & H2 Fuel Pathway | 2007-2010 Fuel/Vehicle Pathway Analyses & Comparisons | 2011-2014 Scenarios & Transition Strategies | 2015-2018 Critical Transition Dynamics |

# Analysis Framework



# STEPS 2015-2018 *(STEPS3)*: Understanding Critical Transition Dynamics for Sustainable Transportation

Key Research Themes developed with sponsors, invited experts, and team:

1. **Initiating Transitions 2015-2030**
   *What is required for early alternative fuel/ vehicle transitions to succeed?*

2. **The Future of Fuels and the Oil and Gas Industry**
   *How will changing geopolitical landscapes and disruptive technology in the oil and gas and clean technology industries impact future business models and the competition of fuels?*

3. **The Future of Global Urban Sustainable Transport (GUSTO)**
   *How will a rapidly urbanizing world affect transport and energy demand?*

4. **Modeling Analysis, Verification, Regulatory and International Comparisons (MAVRIC)**
   *What do improved and cross-compared energy/ economic/ environmental/ transportation models tell us about the future of transportation?*

**Draft Agenda**

# STEPS Fall Symposium 2018

December 11 and 12, 2018

UC Davis Conference Center

## *Day 1 (December 11th)*

| | |
|---|---|
| *8:30 am* | *Registration and Continental Breakfast* |
| 8:50 am | Welcome and Introductory Remarks |
| 9:00 am | **Keynote: Richard Corey,** Executive Officer, California Air Resources Board, followed by a discussion with Dan Sperling, and audience |
| 10:00 am | **Session 1. CA2050: Where are we headed and how will we get there?**<br>Lew Fulton<br>Discussant: Ellen Greenberg, Caltrans<br>Discussant: Phil Heirigs, Chevron |
| 11:00 am | **Session 2. The Role of Hydrogen in Transportation: What have we learned so far?**<br>Joan Ogden<br>Discussants: Bill Elrick, California Fuel Cell Partnership<br>Discussants: Michael Lord, Toyota |
| *12:00 pm* | *Lunch and Poster Session* |
| 1:20 pm | **Preview of STEPS+**<br>Lew Fulton |
| 1:30 pm | **Session 3. Electric Vehicles: Achieving takeoff or hitting the wall?**<br>Gil Tal, Ken Kurani<br>Discussant: Spencer Reeder, Audi<br>Discussant: Tamara Nameroff, Shell<br>Discussant: Fei Chi, Tesla |
| *2:40 pm* | *Coffee break* |
| 3:00 pm | **Session 4. 3Rs: Future Mobility Patterns, Vehicle Ownership and Evolving Travel Behaviors**<br>Giovanni Circella<br>Discussant: Robert De Kleine, Ford<br>Discussant: Guillaume Peronnet, Faurecia |
| 4:00 pm | **Session 5. Sustainable Freight: What can Trucks Deliver?**<br>Marshall Miller, Miguel Jaller<br>Discussant: Dawn Fenton, Volvo Group<br>Discussant: Jim O'Dea, Union of Concerned Scientists |
| *6:00 pm* | *Reception and Dinner, Our House Restaurant* |

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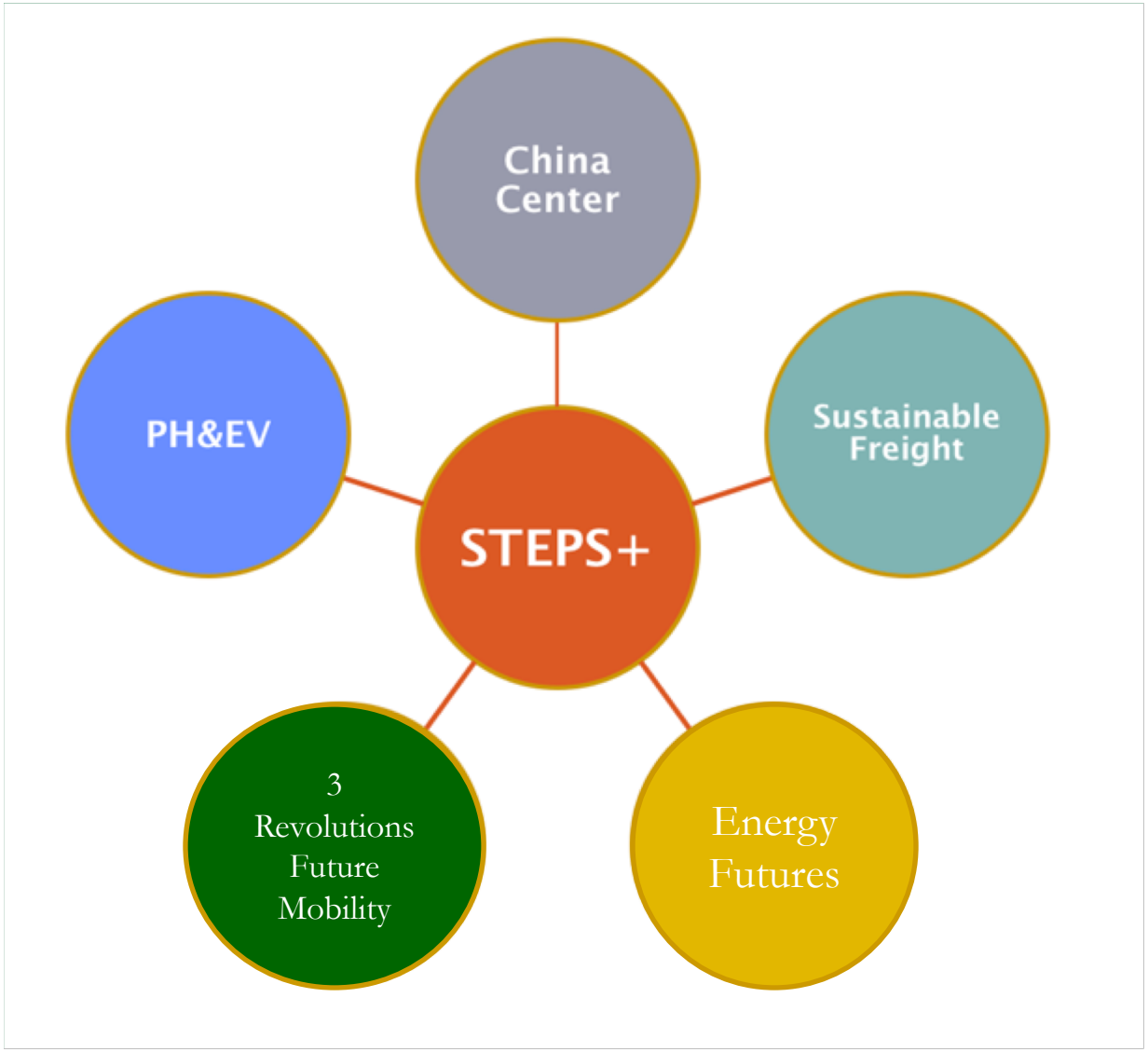
| *Day 2 (December 12th)* | |
|---|---|
| 8:45 am | **Session 6. Vehicles, Biofuels, Electricity, LCA and LCFS: How do all these fit together?**<br>Julie Witcover, Alissa Kendall/Hanjiro Ambrose<br>Discussant: Colin Murphy, PIEEE UC Davis<br>Discussant: Sharyn Lie, US EPA |
| 10:00 am | **Session 7. China Vehicle Electrification: Status and Future Directions**<br>Yunshi Wang<br>Discussant: Zhenhong Li, ORNL |
| 10:45 am | **Session 8. Policy Needs, Prospects And Looking Forward to STEPS+**<br>Austin Brown<br>Discussants: Anthony Eggert, ClimateWorks<br>Discussant: Karl Simon, US EPA |
| 11:45 am | Wrap up |
| *12:00 pm* | *Boxed Lunch and Adjourn* |

# STEPS+ 2019-2022 Research Centers

- Energy Futures (EF)
- Sustainable Freight (SF)
- Plug-In Hybrid & Electric Vehicles (PH&EV)
- 3 Revolutions Future Mobility (3 REVS)
- China Center for Energy & Transportation (C-CET)

# STEPS+ 2019-2022 Program



# Some Housekeeping

- Please no reporting, we use Chatham House Rules
- Please limit Tweeting, with no quotes or references to individuals