

# Carbon in Extreme Conditions

October 28-30, 2019  
Eldorado Hotel and Spa  
Santa Fe, NM



**SHORT PROGRAM**

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**Monday, October 28, 2019**  
**All sessions in the Chapel at Eldorado**  
**Session: Equation of state of Low-Z materials and carbon phase diagram**

9:00 AM – 9:15 AM Welcoming Remarks  
**Dana Dattelbaum**, Los Alamos National Laboratory

9:15 AM – 9:45 AM **Michelle Marshall**, Lawrence Livermore National Laboratory  
*Equation of state and chemical reaction in shock-compressed TATB*

9:45 AM – 10:15 AM **Marius Millot**, Lawrence Livermore National Laboratory  
*Investigating the melting line of a diamond using laser-driven shock compression*

10:15 AM – 10:45 AM **Phil Sterne**, Lawrence Livermore National Laboratory  
*Equation of state considerations for ICF applications*

10:45 AM – 11:15 AM Break

11:15 AM – 11:45AM **Burkhard Militzer**, University of California, Berkeley  
*First-principles computer simulations of shock compressed carbon and silicates*

11:45 AM – 12:15 PM **Joshua Coe**, Los Alamos National Laboratory  
*Polymer equations of state and shock-driven decomposition*

12:15 PM – 01:45 PM Lunch (Cava Lounge at Eldorado)

01:45 PM – 02:15 PM **Kyle Cochrane**, Sandia National Laboratory  
*Shock compression of hydrocarbons to Mbar pressures: successes, challenges, and lessons learned*

02:15 PM – 02:45 PM **Lorin Benedict**, Lawrence Livermore National Laboratory  
*A review of LLNL's multiphase carbon EOS models: construction, applications, and open questions*

02:45 – 03:00 PM **Claire Lemarchand**, French Alternative Energies and Atomic Energy Commission  
*Molecular dynamics simulations of polymers: equilibrium, direct shock, and Hugoniot*

03:00 PM – 03:30 PM Break

03:30 PM – 04:00 PM **Rachel Huber**, Los Alamos National Laboratory  
*X-ray diffraction and scattering to probe structural changes during dynamic compression of polymers*

04:00 PM – 04:30 PM **Katie Maerzke**, Los Alamos National Laboratory  
*Equations of state and shock-driven chemistry in poly(dimethylsiloxane)-based foams*

04:30 PM Adjourn

**Tuesday, October 29 2019**  
**All sessions in the Chapel at Eldorado**  
**Poster Presentations**  
**8:30 – 11:00 AM**

Posters can be hung at 7:30 A.M. Tuesday morning and will stay up through the end of the conference on Wednesday.  
Poster submissions will be accepted as part of the registration.

**Session: Detonation carbon experiments and modeling**

11:00 AM – 11:30 AM	<b>Dana Dattelbaum</b> , Los Alamos National Laboratory <i>Detonation carbon experimental data</i>
11:30 AM – 12:00 PM	<b>Rebecca K, Lindsey</b> , Lawrence Livermore National Laboratory <i>Elucidating the microscopic phenomena governing carbon condensation in shock compressed materials from atomistic simulations</i>
12:00 PM – 12:30 PM	<b>Jeffery Leiding</b> , Los Alamos National Laboratory <i>Towards ab initio Monte Carlo simulation of high explosive products EOS</i>

12:30 PM – 02:00 PM      **Lunch** (Cava Lounge at Eldorado)

02:00 PM – 02:30 PM	<b>Kirill Velizhanin</b> , Los Alamos National Laboratory <i>Kinetics of carbon clustering in detonation of high explosives: Shaw-Johnson growth along accurate hydrodynamic streamlines</i>
02:30 PM – 03:00 PM	<b>Sorin Bastea</b> , Lawrence Livermore National Laboratory <i>Conceptual and practical challenges for carbon modeling in explosives</i>
03:00 PM – 03:30 PM	<b>Trevor Willey</b> , Lawrence Livermore National Laboratory <i>Detonation synthesis of carbon nano-onions via liquid carbon condensation</i>
03:30 PM – 04:00 PM	<b>Chris Ticknor</b> , Los Alamos National Laboratory <i>Recent efforts on high explosives modeling from equation of state to burn models</i>

04:00 PM                      **Adjourn**

**Wednesday, October 30 2019**  
All sessions in the Chapel at Eldorado

**Session: Carbon, C-H, and Low-Z materials in HED physics**

09:00 AM – 09:30 AM	<b>Peter Celliers</b> , Lawrence Livermore National Laboratory <i>Multi-Tpa shock higonot data from NIF experiments</i>
09:30 AM – 10:00 AM	<b>Amalia Fernandez Panella</b> , Lawrence Livermore National Laboratory <i>2D visar experiments at the Omega facility on diamond ablaters</i>
10:00 AM – 10:30 AM	<b>Ivan I. Oleynik</b> , Department of Physics, University of South Florida <i>Carbon at extreme conditions: New Insights from first-principles and quantum-accurate SNAP molecular dynamics</i>
10:30 AM – 11:00 AM	Break
11:00 AM – 11:30 AM	<b>Damian C. Swift</b> , Lawrence Livermore National Laboratory <i>Observations and puzzles in the EOS of carbon from ~2-80 TPa</i>
11:30 AM	Adjourn

## **Santa Fe Restaurants Nearby**

Reviews and Recommendations

Santa Fe Reporter 2018-2019 Restaurant Guide by Area

We are "Downtown"

<https://www.sfreporter.com/guides/restaurant-guide-2017/2018/10/24/restaurant-directory-2018-2019/>

Top 35 Restaurants

<https://www.sfreporter.com/restaurant-guide/>

Restaurants Nearby - Map

<https://www.google.com/maps/search/Restaurants/@35.686683,-105.9425323,16.13z>