



**2009 MESA Advisor Retreat and Kick-Off**  
 Hosted by Colorado MESA, St. Vrain Valley MESA &  
 University of Colorado at Boulder BOLD Center

**Day 1 – New Advisors**  
**Friday, September 11, 2009**

University of Colorado Boulder  
 College of Engineering & Applied Sciences  
 Discovery Learning Center (DLC)  
 1045 Regent Drive, Boulder, CO 80309

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|----------------|--|-----------------------------------|
| 1:00 – 1:30 pm | <b>Arrival/Registration</b>  | <i>DLC Lobby</i>                  |
| 1:30 – 1:35 am | <b>Welcome from Colorado MESA &amp; CU Boulder BOLD Center</b>   | <i>DLC Bechtell Collaboratory</i> |
| 1:40 – 3:00 pm | <b>New MESA Advisor Information Workshop</b><br>Gloria Nelson, Gale Day, Melanie Haas  | <i>DLC Bechtell Collaboratory</i> |
|                | The New Advisor Information Workshop will provide MESA Advisors an opportunity to meet and discuss the MESA program requirements and answer any questions about the program. Session topics include how to actively recruit target students, data collection, parent and community involvement and much more..... The Workshop is designed for both new MESA Advisors and Advisors who may need a refresher course on the program logistics. |                                   |
| 3:00 – 4:00 pm | <b>Middle/High School Bridge Building Workshop</b><br>Kevin Owens, University of Colorado Boulder  | <i>DLC Bechtell Collaboratory</i> |
|                | In this workshop, Advisors will be introduced to the math and science components and building techniques behind a bridge building competition, an annual event at our spring design challenges.  |                                   |
| 3:00 – 4:00 pm | <b>Elementary School Planning Workshop</b><br>Melanie Haas, Colorado MESA  | <i>DLC Murray Reading Room</i>    |
|                | Led by Colorado MESA CSU Center Director, Melanie Hass, advisors will learn how techniques on how to implement an effective elementary MESA school program. Topics include program planning, resources available and overall program management.   |                                   |

**Day 2 – All Advisors**  
**Saturday, September 12, 2009**

University of Colorado at Boulder  
 College of Engineering & Applied Sciences  
 Discovery Learning Center (DLC)  
 1045 Regent Drive, Boulder, CO 80309

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|----------------|---|-----------------------------------|
| 8:00 – 8:30 am | <b>Registration/ Continental Breakfast</b>  | <i>DLC Lobby</i>                  |
| 8:30 – 8:40 am | <b>Welcome from Colorado MESA &amp; CU Boulder BOLD Center</b>  | <i>DLC Bechtell Collaboratory</i> |
| 8:40 – 8:50 am | <b>2008-09 Outstanding MESA Program Recognition<br/>LASP Telescope Drawing</b>                        | <i>DLC Bechtell Collaboratory</i> |
| 8:50 – 9:00 am | <b>The State of Renewable Energy in Colorado</b><br>Ian Baring-Gould, NREL Senior Mechanical Engineer | <i>DLC Bechtell Collaboratory</i> |
| 9:00 – 9:05    | <b>Overview of Today’s Agenda</b><br>Melanie Haas, CSU MESA Center Director                           | <i>DLC Bechtell Collaboratory</i> |

9:05 – 9:50 am

**Networking and Best Practices Session**

In this workshop, Advisors will have an opportunity to network with your MESA colleagues from around the state, share best practices and project ideas.

Elementary School Networking Session  
 Middle School Networking Session  
 High School Networking Session

*ECCR Room 155*  
*ECCR Room 150*  
*ECCR Room 151*

9:55 – 3:45 pm

**Workshop Sessions**

			<b>High School Advisors</b>	<b>Middle School Advisors</b>	<b>Elementary School Advisors</b>
9:55	-	11:10	Mechanical Power C. Bonilha Rm 151	Resource Fair Lobby	Workshop 1 NREL/NEED Rm 155
11:15	-	12:30	Curriculum Overview C. Bonilha Rm 150	Curriculum Overview C. Bonilha Rm 150	Curriculum Overview NREL/NEED Rm 155
12:30		1:10	<b>Lunch (provided) and High School Resource Fair</b>		
1:15		2:30	Wind to Vehicle Transfer C. Bonilha Rm 150	Wind to Vehicle Transfer C. Bonilha Rm 150	Resource Fair Lobby
2:35		3:45	Electric Power E. Payton Rm 155	Mechanical Power C. Bonilha Rm 151	Workshop 2 NREL/NEED Rm 139

The 2009-10 MESA MARK workshop sessions are focused on providing advisors with all the tools needed to successfully implement the Colorado MESA program for the upcoming academic year.

**Elementary School Track:**

Colorado MESA has partnered with NREL and the National Energy Education Development Project (NEED) to provide a series of elementary focused hands on projects and curriculum in the energy field. Workshop are facilitated by NEED and sessions include....

- 1) **Workshop 1 Energy Transformations (Elementary)** *ECCR Room 155*  
 Explore the forms of energy and how energy is transformed from one form to another. The workshop will focus on kinetic and potential energy, heat, light, motors, batteries and electromagnetism and understanding how they relate to the energy sources we use every day.
- 2) **Curriculum Overview Workshop** *ECCR Room 155*  
 Gather information regarding free energy education resources which are correlated to state science standards. Learn how you can teach science concepts in an interdisciplinary approach.
- 3) **Workshop 2 (Elementary)** *ECCR Room 139*  
 Learn about wind as a renewable energy resource. Using classroom-sized wind turbines, design efficient turbine blades, perform tests using variables, and experience the wind generating power and doing work. Learn about interdisciplinary activities you can use to teach about wind energy.

**Middle/High School Track:**

The middle school and high school advisor workshop session will focus on the 2009-10 Wind Energy MESA USA National Engineering Design Competition including curriculum overview, wind to vehicle transfer, mechanical power and electric power design performance components. Workshop sessions include....

1. **Curriculum Overview Workshop (MS/HS)** *ECCR Room 150*  
Chris Bonilha, University of Colorado Boulder  
Gloria Nelson, Colorado MESA  
In this workshop, we will focus on the overall MESA USA Wind Energy guidelines developed and updated for the national MESA engineering competition. Advisors will be introduced to the four main competition components including tips for scoring.
2. **Wind to Vehicle Transfer (MS/HS)** *ECCR Room 150*
3. **Mechanical Power (MS/HS)** *ECCR Room 151*  
Chris Bonilha, University of Colorado Boulder
4. **Electric Power (HS)** *ECCR Room 155*  
Eric Payton, University of Colorado Boulder

Three in-depth workshops dedicated to each of the performance components of the Wind Energy project will outline the logistics behind successfully testing and building each task including Mechanical Power (MS/HS), Wind to Vehicle Transfer (MS/HS) and Electric Power and Wind Direction Response as outlined in the 2009-10 Wind Energy Challenge guidelines.

5. **Resource Exhibitor Session (Open to All)** *Engineering Building Lobby*  
Karen Hunter, St. Vrain MESA Coordinator

The exhibitor session is open to all MESA advisors and is a forum for organizations from around the metropolitan area to highlight their programs and outline their availability to visit your MESA program this coming academic year. Exhibitor tables provide Advisors an opportunity to quickly and easily become acquainted with local resources including networking, scheduling field trips, site visits and much more. MESA advisors will rotate through the Resource Exhibitor Fair in three sessions based on grade level; high school, middle school, and elementary school. Advisors may also use part of the lunch hour to attend the Fair. *During the exhibitor session, you will have the opportunity to plan and schedule your MESA program, so come prepared with your calendars!*

3:45 pm

**Adjourn**