

# STEM IN THE LAB

innovate. explore. discover.



## OUR MISSION

INL's K-12 STEM Program works to inspire Idaho's future STEM workforce, impact students, teachers and families by integrating best practices in STEM education, and empower employees to become STEM mentors to transform K-12 STEM into a driver for innovation.

## STEM IN ACTION



### CHROMATOGRAPHY BUTTERFLIES

*Chemists can use paper chromatography to separate the components of a solution. By adding a solvent (like water or alcohol) the components are absorbed by the coffee filter, separating the solution. Since different components travel up the coffee filter at different rates, they end up in different places. By examining where all the ingredients end up, chemists can figure out what was combined to make the solution. At INL, chemists use different processes to discover groundbreaking clean energy solutions.*

### TRY THIS AT HOME

*If you enjoyed this STEM activity try extending it at home. Try making Chromatography M&M's! Find a plate and make a circle around the border of the plate with M&M's. Next, take a beaker or container of warm water and pour a little bit over the M&M's. Watch as the colors begin to pull. For an extension, use different kinds of mobile phases (vegetable oil, rubbing alcohol, or saltwater) or try Skittles to compare the colors to the M&M's. At home try observing color pigments separate from markers. For this activity gather coffee filters, markers, and a cup of water to watch color pigments separate. First color a circle around the middle of the coffee filter. Then fold the coffee filter and place it in the cup of water. Watch as the water begins to separate the color pigments of the marker. Try making patterns and using different colors of marker.*

## CAREERS IN STEM

### BUILDING STEM SKILLS

*If you enjoy the challenge of learning new things, understanding how things work, and solving problems, a career in STEM could be your future! At INL, engineers are working on developing batteries for next generation concepts and working with automobile makers to advance energy storage technologies. Electric vehicles are considered clean energy or renewable energy, which means the emissions from the car do not pollute our air or water. Visit us and learn more about the careers that await you.*

### STUDENTS + PARENTS + EDUCATORS

*For information on grants, training and student opportunities; curriculum ideas and resources, please visit us at: [stem.inl.gov](http://stem.inl.gov).*

